Report on the JANUS Workshop

Progressing the Information Society: the role of government

A workshop on the digital economy
held in Brussels on
17 February 2003

Janus is a project funded by the European Community under the “Information Society Technology” Programme (1998-2002)
Preface

This report captures the presentations and discussions of the workshop “Progressing the Information Society: the role of government” which was organised by JANUS on 17 February 2003 in Brussels. It is one of the reports of the JANUS project (Joint Analytical Network for Using Socio-economic research), funded by the European Commission under the ‘Information Society technology’ programme (1998-2002). The overall goal of JANUS is to exploit the joint scope and synergy of existing socio-economic research projects within the IST Programme, by bringing together the results from these projects, and jointly reach out with unified messages.

Products of JANUS include a Glossary of Terms on relevant concept and terms of art related to socio-economic research on the Information Society; a Mapping of socio economic IST projects that will provide a structured overview of work done under the IST programme related to socio economic research (final product to which this document is the starting point); briefings focused at key subjects in socio economics of the Information Society that are touched upon by multiple IST sponsored projects; and two issue papers that will bring IST research results together with external views, and take it a step beyond the sum of the individual projects’ findings.

Main targets of JANUS are policy makers at a national and supranational level, and all those involved in socio-economic research. JANUS looks in two directions simultaneously, i.e. within the IST Programme, and outside the IST programme to targets in European society and beyond, in order to inform them about the IST findings and interact on results and information needs.

JANUS is led by RAND Europe (Leiden, The Netherlands), and involves the following partners: Danish Technological Institute (Taastrup, Denmark), Analytica (London, UK), Empirica (Bonn, Germany), Databank Consulting (Milano, Italy), Sylvie Feindt Consulting (Köln, Germany), and Martech International (La Hulpe, Belgium).

The preparation of this deliverable has been edited by Jeremy Millard (Danish Technology Institute) based on session reports by Han de Vries, Leon Cremonini (RAND Europe) and Sylvie Feindt (SFC) and contributions from all speakers. The deliverable has been peer-reviewed in accordance with RAND’s quality assurance standards (see http://www.rand.org/about/standards/) which are applicable for most deliverables of the JANUS project.

Workshop presentations and papers are also available from:

http://www.janus-eu.org
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1 Workshop rationale

1.1 Context

The European Commission’s Fifth Framework Programme for Research and Technology Development was launched in 1999 in a period of societal optimism driven along by the rapid diffusion of Information and Communication Technology (ICT). Many conceived the on-going changes as an entire shift in the economic paradigm - a so-called new economy in the making, with promises of an all-inclusive e-governed Information Society.

Since those heady days we have witnessed a collapse of belief in the new economy, if such a phenomenon ever really existed as many are now questioning. Is it a development that is just momentarily stalled and only temporarily focusing on efficiency and cuts of services under the heading of e-government? Or is it still a promise of more citizen-centred and flexible governance models? And what are the consequences for Information Society policy development? How can policy makers and researchers proactively contribute to policy development in areas dominated by rapid change and a high degree of uncertainty such as an e-governed, all-inclusive Information Society?

The eEurope 2005 Action Plan aims to provide a favourable environment for private investment and for the creation of more and better jobs, to boost productivity, to modernise public services and to give everyone the opportunity to participate in the global Information Society. eEurope 2005 is part of the Lisbon 2010 strategy for the European Union to become the most competitive and dynamic knowledge-based economy in the world, providing not only sustained growth with more and better job creation but also social cohesion.

Whereas the Information Society is largely dependent on investments by the market, governments play a central role in ensuring socially and environmentally sustainable development. In this it is crucial to take decisions today about policies for the future. In the Janus Workshop, “Progressing the Information Society: the role of government”, some of these policy options were discussed, as were the role of scenarios in providing insights to policy makers to ensure that the European societal and economic goals are achieved in a socially inclusive and sustainable way.

1.2 The Janus initiative

Janus stands for Joint Analytical Network for Using Socio-economic research. The Roman god Janus has been adopted as a symbol because it looks in two directions. It looks back to the socio-economic research which has already been carried out to synthesise the lessons of the past; and it looks forward to the future, mapping out the new socio-economic research agenda and to inform the development of Information Society policies. It looks inward to the Information Society Technology (IST) research community, providing a forum for internal exchange of information; and it looks outward to the rest of the world, providing summaries of the research carried out by this community and a starting point for those who want to find out more. Drawing on the
results of the Fifth Framework Programme it also identifies themes requiring further research in the Sixth framework Programme.

1.3 Workshop objectives

In this context the workshop addressed regional development and governance as two of the key elements for progressing the Information Society. This topic was addressed both from a content and from a methodological perspective.

The objective of the workshop was to foster community building among socio-economic researchers, both within and outside the European Union, and to develop a common basis for analysis and recommendations concerning public policy and future research. The aims of the workshop were to:

i) identify the main opportunities and threats for governments in progressing the Information Society, and which options governments have when framing their response

ii) explore how policy makers can benefit from scenarios in determining appropriate policies by facilitating a debate among European and non-European researchers and policy makers about regional development and e-governance, and to examine the possibilities and limitations of the use of scenarios as a research and policy tool

iii) identify lacunae in current socio-economic research that need to be addressed under the Sixth Framework Programme.

This process was designed to ensure the wider understanding of possibilities for progressing the Information Society in a sustainable way, and to engage European researchers involved in scenario building activities in defining policy responses.

1.4 Workshop agenda

The workshop was designed to ensure that maximum progress was made in a short space of time, so that effective participation by key players at different levels was encouraged. The chosen format encouraged open discussion and community building amongst those stakeholders who need to work together to help the EU to set its set goals.

The Workshop agenda is shown below:
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<td><strong>Progressing the Information Society:</strong> the role of government</td>
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<td><strong>Monday 17 February 2003, Avenue de Beaulieu 33, 0/54, Brussels</strong></td>
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<td>Welcome &amp; Keynotes</td>
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<td>Progressing the Information Society: the role of government</td>
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<td>Rosalie Zobel (European Commission, Director DG Infso)</td>
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<td>IST: a challenge to government</td>
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<td>Mark Rickard (Director of the British Hansard Society)</td>
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<td>Scenarios as a means to support development of robust policies</td>
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<td>James P. Kahan, (RAND Europe)</td>
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<td>Scenarios for ICT in education policy at the OECD</td>
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<td>Beatriz Pont (OECD Education)</td>
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<td>Georg Aichholzer (Institute of Technology Assessment (ITA) - Austrian Academy of Sciences, Prisma)</td>
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<td>Gabriella Cattaneo (Databank, STAR)</td>
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<td>The new regional agenda - evolving practice and policy</td>
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<td>Jeremy Millard (DTI, Prisma, Beep, Biser)</td>
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<td>PANDORA: Pilot Action on digital economy opportunities for Rural Areas</td>
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<td>Lone Dybkjaer (Member of the European Parliament)</td>
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1.5 Participants
Workshop participants comprised about 45 stakeholders and experts invited primarily from the following communities:

- Core projects as defined by Janus, BEEP, EMERGENCE, PRISMA, SIBIS, STAR and TERRA 2000
- Other IST projects of interest such as MEDA, PANDORA, MOBICOM, IST-TV
- The wider research community beyond IST
- European National and regional governments
- Representatives from Associate States
- Representatives from international organisations and key international partners of EU (USA, Canada, Japan, Australia)
- European Commission

1.6 Purpose of this report

The purpose of this report is to record the main points made by individual speakers as well as those emerging during the ensuing questions and discussion. The background papers prepared by speakers are also available as an annex. In addition, a summary of the debate between the Janus team and other participants after the workshop is provided, including the feedback on both the content and form of the workshop. A brief overall summary is added and some conclusions are drawn from the presentations and this discussion.

This report thus contributes to the wider debate about the role of government in the Information Society, and provides an input to Janus’ synopsis of socio-economic research emerging from the IST Programme and its relation to the wider research landscape.
2 Keynotes: opening session

2.1 Overview

The opening keynote session first considered the interaction between socio economic research in the Information Society and in government by focusing upon identifying the challenges for governments, and the role of scenarios in supporting policy development.

The first two speakers highlighted the role of government in progressing the Information Society, the policy and IST research context, and the overall challenges for government. The various magnitudes of this interaction were presented by Rosalie Zobel (European Commission, Director DG Infso), and thus offered insights into the broader policy context of the research upon which JANUS is focused. This was followed by Mark Rickard, Director of the British Hansard Society, who examined one of the main challenges for government by highlighting the relationship between eGovernment and eDemocracy.

The final three speakers discussed the contribution of scenarios as support tools for policy development: Prisma, the OECD and STAR. The first, by Jim Kahan of RAND Europe, introduced scenarios as a means of supporting the development of robust policies. The second, by Beatriz Pont of the OECD, focused upon the particular use of scenarios for ICT in education policy. The third contribution, by Laurent Gille, of Ecole Nationale Supérieure des Télécommunications Paris, examined the specific use of scenarios for the Information Society.

2.2 Progressing the Information Society: the role of government

Rosalie Zobel (European Commission, Director DG Infso)

Dr. Zobel explained the importance of the relationship between research and overall policy in the European Union. In this context, she identified four important themes from the broader policy context relevant to the work of DG Infso:

a. Enlargement -- Candidate countries are full partners in the Fifth and Sixth Framework Programmes.

b. The European Research Agenda (ERA) -- focusing on the Sixth Framework Programme, Eureka, COST and the National RTD Programmes.

c. e-Europe -- focusing on broadband access, e-business, e-government, security, skills and e-health
d. Other policies - such as the single market, the single currency, the security of Europeans and sustainable development.

This workshop addresses the interactive relation between the Information Society and the role of government: one feeds into the other. The Information Society is transforming government by developing e-government, and this is demonstrated by the fact that it is a key component of eEurope 2002, 2005 and IST/ERA. E-government is Europe's next big challenge because it results from emerging research and can be considered both as a development and deployment area. This is highlighted by the forthcoming e-government Ministerial Conference, 7-8 July in Italy, in cooperation with the Italian Presidency.

In addition, e-government also impacts businesses, citizens and policymaking (e-policies). There are two core challenges for government in the Information Society:

1. government transformation to a dynamic, service-driven concept and set of institutions (for example through re-engineering)
2. providing interactive user-driven services to citizens and businesses.

E-government is thus an emerging challenge for Europe. It is addressed by various programmes, policies and initiatives at local, regional, national and European levels, but also by private industry.

Dr. Zobel also addressed the issue of why socio-economic research is important in the IST Programme. This is because such research contributes to better research overall and to a greater impact of research on policy development and implementation. Socio-economic research:

1. is a driving focus of the Fifth Framework Programme and an integral element of the Sixth Framework Programme
2. provides a better understanding of ICT impact on economy and society
3. provides the ‘glue’ between IST RTD activities for the benefit of society and the economy
4. leverages an effect on EU policy

In short: socio-economic research has a catalysing effect on eEurope, legal and regulatory issues, the Structural Funds, CAP, entrepreneurship and SME policy.

2.3 IST: a challenge to government

Mark Rickard (Director of the British Hansard Society)

Mr. Rickard is the recently appointed director of the Hansard Society's E-democracy Programme, a role which he took over for a two year term, from the eminent Doctor - now Oxford Professor - Stephen Coleman in November. His role there is to explore how electronic communications could enhance parliamentary democracy in the UK. At the same time, he has retained a foot in the Government camp, in the UK Cabinet Office, on the staff of the UK's e-Envoy. Wearing that hat, he concentrated on the exciting, and
high risk, e-voting programme on which the UK has embarked, focusing for the next three years on local government elections - but with an eye to e-enabled general elections sometime after 2006. His presentation focused on three closely inter-related topics related to eGovernment:

The first challenge is that of achieving a substantial level of take-up of electronic services - one that justifies the expense of developing them. Judgements about peoples’ willingness to make use of services provided are absolutely central to any strategy for e-government. Are the huge expenditures being contemplated based on sound judgements of the market for government's electronic products? Or are we making an act of faith, rashly consuming large amounts of other people's money? So take-up is the first challenge. If that is achieved, much else will be forgiven. If it is not, we are going to look remarkably silly.

The second challenge is that of finding a customer-focused approach to delivering the services. In Mr Rickard’s view, some of the most significant pitfalls facing e-democracy fall into this category.

The last of his challenges is to use the introduction of electronic services as a catalyst for re-thinking the whole approach to service delivery - in other words, re-engineering it. For example, to join up services that were traditionally, bureaucratically, separate. Or to deliver them through private or voluntary sector intermediaries rather than large and very expensive government departments.

E-democracy is an area in which all three of these challenges can be seen in play.

2.4 Scenarios as a means to support development of robust policies

James P. Kahan (RAND Europe, Prisma project)

One hears a lot about scenarios these days, but the definition of "scenario" can differ widely, depending on who is speaking. In this presentation, we define a scenario for policy purposes as a picture of the future, that is internally and logically consistent, that is portrayed in a concrete fashion, and that illuminates the major issues to be dealt with in the policy debate. We emphasise that scenarios in this use are not forecasts; indeed, the only thing that can be said for certain about a scenario is that it will not happen as it is presented.

Scenarios are used in many ways, but two of the most important ones may be termed "analytic" and "horizon expanding." In analytic exercises, scenarios are built that vary according to dimensions that are of importance to the scenario, and a (sometimes large) number of scenarios are analysed to yield results on (sometimes very multidimensional) outcome spaces. In horizon expanding exercises, typically scenarios are presented to groups, and the groups react to the scenarios in structured ways.
Both the analytic and horizon expanding uses of scenarios call for scenarios to come in sets. Earlier, single scenarios would be built, but in modern policy usage, single scenarios are inadequate for exploring the intricacies of options. Thus, the number of scenarios in play for a policy problem may range from 2 to 3 for a human-intense exercise up to a very large number for a major analytic effort.

Building scenarios is an exercise in both discipline and creativity. The discipline is in structuring the set of scenarios so that they reflect the issues requiring exploration, and the creativity is in fleshing out the scenarios so that they make sense. The first step in achieving this is to identify potential elements of scenarios and to sort them along two dimensions: whether the element is important or unimportant to the policy problem and whether, in the time frame posited, the element may be assumed to be more or less sure to happen or is uncertain. This is illustrated in the figure immediately below.

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Dr. Kahan’s presentation demonstrated two examples of scenario usage. The first was an analytic effort to assess the value of constructing a new large sluice at the sea entrance to the Amsterdam canal. In this study, five scenarios were constructed and subjected to model-driven cost benefit analysis. The second is a horizon expanding effort in the PRISMA project (featured a number of times at this workshop). Here, three scenarios explored possible futures for the delivery of six different types of e-services. Experts engaged the scenarios in a structured seminar game exercise.

A first conclusion is that scenario construction can be a good in itself, as it creates awareness and aligns different frames of reference in a common language of discourse. Second, using multiple scenarios permits a test of robustness of policy options. When a policy option withstands the test of widely different scenarios, this suggests that the option is significantly robust. Even with non-robust elements, the circumstances under which different policy options are important are important to understand. Signposts and triggers may be set up to detect these differences.

### 2.5 Scenarios for ICTs in education policy at the OECD

**Beatriz Pont (OECD Education)**

In 2002, the OECD's Education Committee began an activity to identify and evaluate how ICTs can contribute to improved educational outcomes. Its main, but not exclusive,
focus is national public policy issues: both the policies required for effective implementation of ICT in education, and the impact of ICT upon educational policies. It examines the relationship between ICT and key policy tools (resources, teachers and regulatory frameworks) on one hand and key educational outcomes (equity, quality teaching and improved and more equitable learning outcomes) on the other.

In planning this activity, strong advice has been provided by stakeholders that it should not only attempt to describe present policies, but also take a forward-looking approach. Thus, Beatriz Pont explained how she had adopted a different approach than the one usually adopted at the OECD Education and Training Policy Division, based on country visits, writing of analytical reports and the organisation of conferences. Scenarios have already been used by the OECD in developing alternative visions on the future of schooling. They have been extremely successful mainly because they have added a forward looking approach in education policy, an exercise that has not been common in this field. Also, it has been a highly valuable tool to help countries clarify the main directions and strategic options for schooling in the long term.

In ICT Policy challenges for education, the OECD is trying to think through what appropriate policy responses might be in the future to challenges that ICT is posing for education. Among different questions, the OECD is exploring how ICT can contribute to greater equity in education, how teachers might be used as resources, what types of resources are most useful, how ICT can improve quality and effectiveness of their work and the types of institutional and regulatory frameworks that might be optimal for the dissemination of good practice in ICT use in education.

Scenarios have been used to address these questions in an integrated manner and provide countries with a useful tool for exploring future policy options and opportunities for, and barriers to, policy implementation of ICT in education. Scenarios will complement other methodologies used. The OECD feels they can assist policy makers to understand the best options for using ICT effectively. Countries may reformulate them to suit their own reality or country setting. The might change them, and they are not meant to be a normative or empirical tool, but a useful one for policy development.

The OECD is now planning how to best integrate scenarios in the activity. It is proposing to use them to test policy options and constraints for three separate but interrelated questions:

- Resources: the resource implications of students having access to ICT when and where they need it; resource implications of use of ICT in school management;
- Teachers: the impact of ICT on teachers’ work;
- Institutional issues: How ICT may impact he institutional and regulatory frameworks of education.

The preferred options would be to develop alternative scenarios of the integration of ICT in educational systems using different dimensions of the three issues presented above. These are viewed as key factors that directly impact on the central question. The OECD is also working to identify the large driving forces that may have an impact on the main issue, including the economic, political and social forces at work.
A more practical example of how this might be done. In relation to teachers, exploration would be undertaken as to the tasks they are expected to perform, the types of skills they require, and to provide different alternatives. The different roles teachers might play according to different alternatives would be developed and these different alternative views would be put together with the alternative views developed under the other themes to develop the final scenarios.

The OECD is a good resource of national and international expertise for verifying the alternative scenarios produced and for refining them. Participating Country Delegates are often key players in the policy making process and we can use their expertise. The organisation of workshops and meetings can assist in the process. Theme Advisory Committees are excellent resources to assist in developing the different dimensions for each theme, and these are brought together for the different scenarios.

The time frame of the scenarios is quite important. If it is to be realistic and useful for policy makers, a short time frame is preferred given the rate at which the educational use of ICT is changing in all OECD countries and given the varying levels at which ICT is being used in education in OECD countries.

Overall, the OECD wishes to help its constituents, national governments and education policy makers, look to their future in order to make key decisions on how to best invest in ICT in the education process and for improved educational outcomes.

### 2.6 Scenarios for the Information Society

**Laurent Gille (Ecole Nationale Supérieure des Télécommunications Paris, STAR project)**

**Introduction**

The STAR project – Socio-Economic Trends Assessment of the digital Revolution - is focused on the analysis of the development of the Digital Economy in Europe, in order to contribute to a better understanding of the conditions leading to sustainable social and economic growth patterns – how to survive the transition phase. Within its work programme, Star aims at providing a global framework for building scenarios on the consolidation of the information society. Four scenarios have been developed by the Star team and will be published in April 2003. This presentation explained the objectives of the scenarios, the methodology that has been used, and provided a first look at them.

**Why scenarios**

The basis for any foresight exercise must be recalled: the future is not predetermined, it largely results from orientations given by the entire diverse range of players (users, suppliers, regulators, public powers, etc.) via a certain number of questions inevitably raised by any socio-economic change: uncertainty is the keyword in foresight. It is therefore not possible today to outline what the information society will be with certainty. As a result, we should consider that not one, but several information societies are possible. It is this diversity which we try to illustrate in Star scenarios. The challenge of this exercise is therefore to draw up the configurations possible which the European
information society may take on, in their diversity, so that players who are confronted with policy or strategic options can orient their decisions. Foresight is not forecasting; it involves opening a forum for debate among those who will affect the future and be affected by it. What are the major forking points possible for the European information society is the preliminary question of any foresight exercise. Once identified, a scenario is no more than a combination of possible paths introduced for all possible forking points.

**Framework of the scenarios**

Three domains have been judged to be determining:

1. The first touches the heart of social communication processes: what type of media and use will the information society favour?
2. The second concerns the economic system: what type of company and economy will the information society produce?
3. The third relates to how the State will act and be affected by ICTs.

For each of these three domains, a number of key issues or dimensions are listed:

i) The first dimension concerns how technical systems fit into psychological, social and cultural processes of communication. Individuals, social groups, cultural, ethnic or social communities obviously do not communicate identically and may favour alternative streams of media.

ii) The second dimension deals mainly with the interactions between ICTs and the economy, especially how ICTs will influence industry structures and performances.

iii) The role of States in the advent of the information society, analysed in the third dimension, is more and more often questioned. The State is required to give an example (e-government), to finance innovation, to give confidence to users (safety, security of services, personal protection, etc.) but also to guarantee a minimum of public spaces and assets in an economy tugged between reinforced property protection mechanisms and the need to disseminate innovation and creation to a maximum. Inversely, the information society is expected to allow an improvement in the provision of general-interest services and notably a reduction in their costs.

**Outcome**

Two scenarios per domain are proposed and four consolidated scenarios are developed. But, probably more important than these scenarios, is the toolkit provided. All of this scenario construction toolkit can be mobilised by each reader to enrich, adapt, and work the global scenarios on the basis of elementary scenarios. The goal of the foresight exercise is not to predict the future (which luckily it would be unable to do because the future remains to be constructed by all of the players who contribute), but to have these players reflect on the dimensions of this future, on the coherence of actions, strategies or policies which lead to it, in order to allow Europe to select the “best” information society possible.
2.7 Issues arising

The five keynote speakers presented a variety of complementary viewpoints around the themes of the interaction between government and the information society, the role of socio-economic research in this, and the particular role of scenario building as a tool to enable us to better understand the future and how to make sensible policy choices.

Dr. Zobel reminded us that e-government is Europe’s next big challenge, both because it results from emerging research and because it can be considered both as a development and deployment area. In this context there are two core challenges for government in the Information Society: how government can be transformed into a dynamic, service-driven concept and set of institutions (for example through re-engineering), and how government can provide interactive user-driven services to citizens and businesses.

Mark Rickard illustrated these issues through the lens of e-democracy. Here, the first challenge is that of achieving a substantial level of take-up of electronic services – one that justifies the expense of developing them. Next, and perhaps the greatest challenge, is to create a customer-focused approach to delivering the services. Finally, the introduction of electronic services acts as a catalyst for re-thinking the whole approach to service delivery - in other words, re-engineering it. However, there is no intention to re-engineer representative democracy, but rather to support it and enable it to function better.

The last three speakers each characterised scenarios as simply alternative pictures of the future, that are internally and logically consistent, that are portrayed in a concrete fashion, and that illuminate the major issues to be dealt with in the policy debate. The main conclusion is that scenario construction can be an extremely useful tool. Scenarios can create awareness and align different frames of reference in a common language of discourse. The use of multiple scenarios also permits a test of robustness of policy options.

The overriding importance of socio-economic research for the IST Programme was stressed. Such research contributes to better research overall and to a greater impact of the technology research on European policy development and implementation. For example, socio-economic research has a catalytic effect on eEurope, legal and regulatory issues, the Structural Funds, CAP, entrepreneurship and SME policy It helps us understand the major forking points possible for the European information society, which can be systematically analysed and pursued, for example, by using scenario building and foresight exercises. Better policy development and implementation is the result. By enabling various players to reflect on the dimensions of the future and the policies which lead to it, Europe should be able to adopt paths to a European information society best suited to all of its citizens and to its economic needs. As Dr. Zobel quoted from the 2000 Lisbon Strategy: “Making Europe the most competitive knowledge-based economy by 2010.”
3 Session 1: IST impacts on governments and their interaction

3.1 Overview

The first session had three speakers each focusing on e-governance. Georg Aichholzer, of the Institute of Technology Assessment (ITA) at the Austrian Academy of Sciences in Vienna reporting on the Prisma project, presented an overview of the e-administration in 2010 and how scenarios can be used to construct plausible pictures of the future.

Dr. Maria Wimmer, of the Johannes Kepler University of Linz, also in Austria, focused upon future e-government services. Finally, Rolf Lührs, Tutech in Germany and reporting the Demos project, examined e-democracy issues illustrated by recent experiments in Hamburg and how the Internet can be used to promote discourse between the governed and government.

3.2 Public administration in 2010

Georg Aichholzer (Institute of Technology Assessment (ITA), Austrian Academy of Sciences, Prisma project)

Georg Aichholzer discussed the impacts of ICT on the PA (Public Administration), with a view to the future. Aichholzer has been actively involved in the PRISMA (Providing Innovative Service Models and Assessment) project, which developed scenarios on European public service delivery. He stressed that, thanks to the deployment of ICT, there is an increased potential for quality and efficiency in the PA.

Aichholzer suggested a number of key drivers for e-government, including:

- increasing pressure on public budgets stimulating new ways to increase efficiency and performance within public agencies
- restructuring of public sector functions and service provision along with the trend towards privatisation and outsourcing (‘reinventing government’)
- changes to management philosophies and their application on public sector activities (‘New Public Management’)
- demands for service improvements by the public in societies which are increasingly penetrated by the use of the Internet in all spheres of life
- a growing demand for government transparency, democratic participation and legitimacy, including the need to convince citizens of political projects and decisions as well as to justify administrative procedures, especially in the European Union (‘a Europe of the citizens’).
Aichholzer explained that a common typology of e-Government services distinguishes information, communication and transaction services as well as three generic application areas – administrative affairs (e-administration), political participation (e-democracy) and everyday needs (e-Assistance). New potentials for increased quality and productivity of public services have been identified in a ‘new accessibility’ of persons, procedures, data and objects as essential determinants of administrative action.

At the same time, Aichholzer pointed out that, despite the extensive monitoring of the supply side of e-government, only been modest attention has been paid to the demand side and to responsiveness to user needs.

PRISMA developed three scenarios for Europe in 2010, i.e. a prosperous Europe, a turbulent world and a world in recession, where re-orientation is necessary (non-transparent PA, though rationalised, low technological progress, data misuse, etc.). Each of these scenarios entails different strategies in today’s policy practice, from usability analysis to more sustainable finance strategies, from multi-channel delivery policies to social inclusion and security policies.

On the basis of this, PRISMA developed policy recommendations including:
- strict target group and needs orientation in service design, increase of pro-active services
- New human agents and multi-channel delivery for flexible support
- Further social inclusion measures (assisted public access points, design for all)
- Transaction support for businesses and professional mediators
- Trust and privacy enhancing measures (transparent processes, seals), calm technologies
- Back-office reorganisation measures (intra- and inter-governmental) and portals to achieve one-stop service.

It is clear that e-government, though a driving force, is not sufficiently linked to administrative progress. The scenario tool can be useful for reducing risks.

### 3.3 E-government services in the future

**Maria Wimmer (Johannes Kepler University of Linz, eGOV project)**

The second speaker of this session was Maria Wimmer, from the Kepler University of Linz, focusing on “e-Government services in the future”. Among other issues, she expanded on the problem of integration among different realities and experiences.

As always, the aim of the “e” is to achieve more seamless government. Technology should just be an enabler for this aim. However, a crucial quandary is the lack of integration amongst different developments. There are many local developments in e-government, but in fact they do not “know about each other”, nor are they always compatible under a policy/legal perspective. Integration needs to be achieved at four levels:
1. organisational (e.g. between public agencies, through PPPs --- Public Private Partnerships etc.)
2. under a service perspective (i.e. an integrated service view)
3. content oriented (e.g. through the development of a common understanding and ontology, data exchange, etc.)
4. integration of electronic media and IT systems (front-back office integration, system interoperability, equal options for means of access, etc.)

In addition, the active participation of citizens in government and democracy has become a pivotal criterion. In future e-government, services will be offered to the customers of public administrations through a wide range of means of access: Internet portals (one-stop), mobile access facilities, physical one-stop shops, integrated in virtual market places, etc. The level of process performance will range from simple information to integrated service provision and aftercare. It will be up to the customer of public administration to decide which means to select to access a specific service.

Maria Wimmer stressed that e-government will also result in new ways of executing governmental business, e.g. through PPP (Public Private Partnerships), outsourcing of administrative work, multifunctional service shops, one-stop Government shops, etc. In fact, she added, communicating with public agencies is only the tip of the iceberg. If we really want ICT to enable effectiveness, quality, efficiency and legitimacy of public action, the entire machinery of Government requires re-thinking.

3.4 Demos: Internet, discourses and democracy

Rolf Lührs (Tutech, Technical University of Hamburg, Demos project)

Rolf Luhrs examined e-democracy issues, particularly in relation to a project called DEMOS (Delphi Mediation On-line System).

The main issue is how ICT can support democracy. There appear to be three key elements:
   i) information provision
   ii) public will formation
   iii) decision-making.

Only a mix of these factors can help democracy through the use of ICT. Luhrs described the DEMOS tool as a good way to test possible combinations of these elements. The DEMOS approach consists of two complementary parts, the participation methodology and the technical platform, and can only be understood as a socio-technical system. The participation methodology assembles and integrates three well-proven social research methods, namely the survey technique, the Delphi approach and the mediation method.

These three social research methods are applied and merged together in the so-called 'DEMOS process'. This provides support for three discussion phases:

   1. Broadening the discussion -- in this phase the discussion is initiated and information about the problem situation and the interests, positions and ideas of
the stakeholders are gathered from as many sources as possible. The DEMOS system supports this phase with tools to help moderators with clustering and structuring discussion forum articles and visualising relationships among them. The result of this phase is an outline and summary of the discussion thus far.

2. deepening the discussion – the main task of this phase is to address selected issues in more depth. For this purpose, the DEMOS system provides tools for helping the participants to break up into sub-groups, for conducting online surveys, and for collaborating on the formulation of joint position statements.

3. consolidating the discussion – the task of this third and final phase is to consolidate the results from the sub-groups into a document summarising and visualising the main points of the discussion. Ideally, this structured discussion process leads to political consensus. In practice, participants may continue to disagree, but the reasons for the disagreement will have been made clear and comprehensible.

Despite the value of DEMOS or similar initiatives, a major difficulty remains: these tests are seldom known by citizens and PAs, ensuing in failure by governments to implement their results in the political processes. DEMOS showed how, through the Internet, local authorities could improve communication and interaction with their citizens. An experiment in this sense was held in Hamburg in November 2002, resulting in almost 60 condensed ideas on how Hamburg could become a “growing city”.

3.5 Issues arising

The three session 1 speakers presented a variety of illustrations of e-governance, encompassing an overview of the e-administration in 2010, the future of e-government services, and how the Internet can support e-democracy.

Georg Aichholzer examined the major drivers behind current e-government developments, including pressure on public sector budgets, the trend towards privatisation and outsourcing, changes to management philosophies especially towards ‘New Public Management’, demands for service improvements by the public, and a growing demand for government transparency, democratic participation and legitimacy.

What is the actual role of ‘modernisation’ in this? Is it the key driver for e-government or is it just the other way round, i.e. that e-government is driving modernisation? It is apparent that, on the one hand e-government is not just about technology but also about educating PA personnel, and, on the other hand, for effective electronic government services the back office needs re-organisation as well as the front office. Georg Aichholzer also stressed that at present the supply side of the chain is the leading force for e-government and that going beyond current bureaucratic restraints is still the central goal.

Maria Wimmer focused on future e-government services and especially the need for integration in a number of spheres, including organisational (e.g. with Public Private
Partnerships), across services (e.g. around citizen life or business events instead of structured around bureaucratic departments), content integration (e.g. through the development of a common knowledge management and data exchange infrastructure), and the integration of electronic media and ICT. She clearly stated that if we really want ICT to enable effectiveness, quality, efficiency and legitimacy of public action, the entire machinery of government requires re-thinking.

An important issue in this context is what are the different roles that can and should be played by the different policy levels (European Union, nations, regions, etc.)? Nations can have a key impact in identifying current needs (e.g. where integration is most necessary). Local authorities play a strong part in communicating with stakeholders and citizens, while the European Commission should lead the way in standardisation and harmonisation initiatives.

Rolf Lührs illustrated the how ICT can support democracy, particularly in relation to the three functions of information provision, supporting the formation of public will, and decision-making. An experiment in Hamburg showed how ICT can assist in broadening, deepening and consolidating public discussion.

This well illustrated the issue of the concrete application of e-democracy. Some concern was expressed about the possible misconception of initiatives such as in Hamburg - politicians as well as citizen groups might argue that these initiatives are, in reality, aimed at ‘setting the agenda’ and ‘steering people’s minds’. In fact, however, although this was the approach the authorities had initially wanted to follow as well as seek suggestions about ‘what to do’ in concrete situations, in practice the discussions were truly open with impartial, free and credible moderators. In this way strong criticism of government was encouraged and the overall process and decisions were transparent.
4 Session 2: IST impact on regional development

4.1 Overview

Session 2 started with a keynote presentation from Olivier Pascall of the European Commission, DG Infso, who provided a view of the regional perspective, and particularly of e-government within this, in the Information Society.

This was followed by Gabriella Cattaneo of Databank Consulting, Italy who presented some results from the STAR project derived from on-going research evaluating and benchmarking regional e-government initiatives. This was followed by an overview from Jeremy Millard of the Danish Technological Institute on how Europe’s regions are responding differently to the take-up of ICTs, and the implications this has for both research and policy. Finally, Stefania Filipazzi from the Politecnico di Milano and the PANDORA project, narrowed the focus to look at rural areas and both the opportunities and threats the Information Society presents here.

4.2 E-government at regional level

Olivier Pascal (European Commission, DG Infso)

Olivier Pascal has special responsibility within DG Infso for the role of regions in the Information Society. Within overall EU policy, the regions are ‘big business’. Between 7-8 billion Euros are spent each year on the regions, mainly through the Structural Funds. In order to spend this money effectively and responsibly a policy and a vision for regional development in an Information Society context is required. Seven regional priorities are necessary as we move from the access focus of eEurope 2002 to the usage focus of eEurope 2005:

1. **Broadband infrastructure.** Strategies for broadband infrastructure beyond urban areas are necessary. These could be based upon third party infrastructure providers, a multi-platform approach and strict technology neutrality, and partnerships with the private sector. It is now possible to utilise the Structural Funds for helping to develop broadband infrastructure, for example proposals for revised guidelines and for regional Information Society strategies are welcome. All proposals should incorporate cost-benefit analysis, and compliance with telecom regulations and competition rules (on state aid and anti-trust). Consideration can also be given to, for example, passive/active infrastructures, as in France.

2. **E-government for the regions.** This is a major Community commitment with a strong political perspective incorporating the sharing of experiences (such a eForum) and the trans-European dimension (such as IDA, IST eGovernment, ICAN, etc.). Also important are benchmarking progress at European, national and regional levels. New
forms of governance, such as a specific role for Local Authorities, also enables the development of new types of regional relationships and policy making with citizens and business. E-government also implies equal access and transparency, exploiting broadband at all territorial levels, the re-organisation and decentralisation of government, pan-European services and trust and confidence.

3. **Regional benchmarking.** It is essential to establish a common framework for indicators and data collection at the regional level. This is needed for measuring disparities and evaluating public service policies. It is important to attain consistency with eEurope indicators, with IST projects (such as Biser), and with regional plans (such as in Emilia-Romagna and Acquitaine).

4. **Regional networking.** The exchange of best practices and defining frameworks for priority issues and policies is also essential. Many existing European networks are engaged in this, including CEMR/ElaNet, TeleCities, GCD (Global Cities Dialogue), Erisa/IANIS, etc. Common learning through networking is an important aspect of these efforts, which should be strengthened and coordinated.

5. **The International dimension and the World Summit on the Information Society (WSIS).** Cooperation is also essential on a global scale to reinforce global competitiveness and to fight the global digital divide. The WSIS meets in Geneva in December 2003 and again in Tunis in 2005. There is also a regional summit in Lyons, France. There is growing recognition of the importance of the role of the regions and that their voice is essential in diffusing the Information Society.

6. **Candidate Countries.** These represent a new challenge for regional policies. In the future EU, 25% of the population will live in LFRs (Less Favoured Regions), among which 60% will be in the Candidate Countries (CCs). In this context, the 2000-2006 Structural Funds operational programmes are currently being assessed for incorporating the CCs, in order to move towards a single Information Society Integrated Strategy and appropriate coordination mechanisms.

7. **Research and Innovation Policies.** These are the key to competitiveness in a knowledge economy, together with regional policy. New policy instruments and delivery systems are required, incorporating PPPs (Public-Private-Partnerships), for example regional innovation strategies.

Olivier Pascal pointed to the need, overall, for a shift in Information Society policy from an ICT/technology focus to one focused on a policy vision, enhanced socio-economic cohesion and environmental sustainability. This requires appropriate regional benchmarking systems, the exchange of good practice and a high level of inter-regional networking, and new forms of governance based upon a strong role for local authorities as well as for civic society at large.
4.3 Evaluation and benchmarking of e-government in the European Regions: problems and perspectives

Gabriella Cattaneo (Databank, STAR project)

Gabriella Cattaneo, the coordinator of the STAR project on socio-economic trends assessment for the digital revolution, reported on recent work in establishing benchmarking methodologies for e-government diffusion at the regional level. The main need for such an approach is the clear mis-match existing between the availability of e-government on-line services (for example as measure by Eurobarometer and the surveys of electronic on-line public services undertaken by CGE&Y in 2001 and 2002 for the European Commission), on the one hand, and user preferences and take up for such services (for example as investigated by the SIBIS projet and Nielson NetRatings in 2002), on the other.

Regional benchmarking of e-government is important because:

- e-government is a priority for the development of the Information Society
- benchmarking progress is an essential tool to allow monitoring and strategic guidance
- without it there is lack of evidence of the benefits and impacts
- there is a risk of losing momentum unless benefits and impacts are documented

Various approaches to the benchmarking of e-government have already been developed, including by the OECD in which e-government maturity is assessed by an examination of readiness for e-government, the actual use (or implementation) of e-government and the impact of e-government, for example, in terms of socio-economic benefits.

Gabriella Cattaneo also described the main criteria for the evaluation of e-government initiatives as their relevance, effectiveness, efficiency and their internal functioning, and gave examples of the potential benefits of e-government for the main stakeholders:

- for policy makers: a better understanding of citizens’ needs, an improvement of citizens’ satisfaction, the implementation of new services, and improved transparency and communication
- for citizens: better access to services and information, better knowledge of services, easier interaction with services, and improved transparency and communication
- for public employees: improved effectiveness, improved satisfaction, and improved transparency and communication within the organisation
- for government agencies: better cost control, rationalisation of resource management, faster interaction times, the elimination of activities without value added, process streamlining and avoidance of bottlenecks, and the merger and harmonisation of information databases.
4.4 The new regional agenda – evolving practice and policy

Jeremy Millard (Danish Technological Institute, and the Prisma, Beep and Biser projects)

Jeremy Millard, the coordinator of the Prisma project which has developed innovative models for delivering e-services to citizens, gave an overview of research, policy and practice in relation to how regions are reacting to the Information Society and the knowledge economy. It is clear from various sources (for example, the European Commission and the Digital Europe and MUTEIS projects) that as the economic position of European countries tends to be converging, increasing divergences tend to be seen within individual countries at regional level.

In fact, the Digital Europe project found that, measured at the regional scale, ICT adoption leads to a clustering effect which may be stronger than that seen with traditional economic activities, although this is also explained by industry characteristics such as skill intensity, and by wider economic forces such as globalisation, increasing competition, de-regulation, etc. Jeremy Millard went on to explain why this is so with reference to cluster formation which is being driven on both the supply and demand sides by forces similar to those existing in the traditional economy. However, these forces are, in many ways being strengthened by ICT and producing spatial patterns which may be different in detail compared to earlier geographies. For example, precise location within major urban conurbations may be less important whilst proximity to them may be even more important than before, at least for many types of high added-value activities. Thus, some decentralisation of such activities may be taking place within the urban core, but that this tends to be only to its periphery or to previously less intensely utilised sites.

However, despite similarities to earlier geographies, clear differences exist. Whereas, previously analysis was based upon the traditional economic sectors (often still used for statistical data collection), analysis now needs to proceed on the basis of types of knowledge creation and use, cutting across such sectors. Such an analysis lies at the base of the two complementary forces which seem (at a general level) to better explain both spatial clustering and spatial dispersion:

1. De-centralising, cost-based competition, i.e. where highly explicit (or codified) knowledge activities are relatively footloose and spatially distributed, so that they are often outsourced to peripheral and rural areas – here the value added tends to be embedded mostly in the technology which is easy to move around.
2. Centralising, knowledge-based competition, i.e. highly tacit knowledge activities (experiential, often requiring a large degree of face-to-face contact) tend not to be footloose and tend to concentrate in core areas – here value added tends to be embedded mostly in people and organisations which is difficult to move around.

Given the above, policy implications include the need to question the underlying assumption that the problems of ‘lagging regions’ (generally rural and peripheral areas) can always be solved by copying more successful core regions. The European regional policy model has such an administrative bias, especially in relation to developing PPPs.
and related institutional capacities. For example, it is sometimes assumed that provided peripheral regions find appropriate private sector partners then they can do (almost) anything. Future research should include closer examination of knowledge economy spatial sorting effects, and particularly the role of different types of knowledge use and creation and the knowledge-innovation life cycle.

4.5 PANDORA: Pilot Action on digital economy opportunities for Rural Areas

Stefania Filipazzi, (Politecnico di Milano, PANDORA project)

Stefania Filipazzi explained the PANDORA project as a high-impact initiative designed to show the concrete development opportunities for regional economies made possible by the adoption of ICT, applications and practices through the development and demonstration of innovative, mobile regional public services, with a particular emphasis on rural areas.

The PANDORA project aims, as a major aspect, to develop CRM programmes within Public Administrations mainly exploiting the opportunities brought by new wireless technologies and focusing on some rural areas of Europe that, because of their geographical configuration and of their distance from big cities and from Public Bodies, are in a disadvantaged position using all services provided and that need specific applications. Confidence is expressed in a number of ambitious project outcomes, including:

- an increase in regional administration productivity of 50%
- a reduction in regional administration costs of up to 30%
- serving some 200,000 SMEs in the five European regions targeted by the project, making them more efficient and competitive
- contributing to the creation of hundreds of thousands of new jobs in the innovative GPRS/UMTS service market.

In order to achieve the above, PANDORA is developing:

- a brand new Mobile Content Management Platform able to access, manage and wirelessly deliver multimedia and multilingual information extracted from Web pages, local/regional databases, etc.
- a set of advanced, multimedia, interactive and personalised IST applications devoted to the mobile user (citizen, entrepreneur, commuter, etc.).

For example, in Lombardy, the applications are aimed at farmers:

- regulation: news and contributions -- providing farmers, both in pull and push modality, with information about new regulations, focusing attention on those related to contributions distribution
- weather forecast -- providing farmers with specific weather information useful for work planning
subsidies management -- after having submitted a request for a contribution, the farmer will be regularly informed about the most significant events concerning the progress of the application through the system.

4.6 Issues arising

The four session 2 speakers covered a large number of issues but all were focused upon the regional dimension of government and the relationship of e-government to the more general concerns of regional development.

Olivier Pascal underlined the need for a shift in Information Society policy from an ICT/technology focus to one focused on a policy vision, enhanced socio-economic cohesion and environmental sustainability. In this context there is the need for a strong focus on the local and regional dimensions. This requires appropriate regional benchmarking systems, the exchange of good practice, a high level of inter-regional networking, and new forms of governance based upon a strong role for local authorities as well as for civic society at large. In this context, user needs, take-up and preferences need to be taken much more seriously. In the absence of this, significant mis-matches are already occurring between the availability of on-line e-government services and their take up.

Gabriella Cattaneo, taking up this challenge, presented on-going work on benchmarking methodologies for e-government diffusion at the regional level. She demonstrated the main criteria for the evaluation of e-government initiatives as their relevance, effectiveness, efficiency and their internal functioning. It was also clear that the needs of different stakeholders must drive the benchmarking and measurement effort.

Jeremy Millard pointed to the challenge that, as the economic position of European countries tends to be converging, increasing divergences are being seen within individual countries at regional level. Measured at the regional scale, ICT adoption tends to lead to a clustering effect which may be stronger than that seen with traditional economic activities, although this is also explained by industry characteristics and other global drivers such as de-regulation and increased competition. Overall, the drivers of these regional divergences are very similar to those existing in the traditional economy. However, they are, in many ways, being strengthened by ICT and are producing spatial patterns and sorting effects which may be different in detail compared to earlier geographies.

A useful approach to understanding and analysing these trends is to examine the role of different types of knowledge creation and use, and particularly the knowledge-innovation life cycle. This shows, that there is a continuum of different types of competition: at one end this is based on cost minimisation and at the other end is determined by the development and application of high value-added knowledge resources.

Stefania Filipazzi was able to illustrate some of the issues examined by the previous speakers through the concrete example of improving e-government services in rural
areas. This is being accomplished across a number of rural regions by showing how ICT can increase both the productivity and efficiency of the regional governments as well as the quality of services experienced by the user.

A number of general conclusions arise from these presentations. For example, in order to ensure we can recognise, understand and respond to the mis-matches seen in the supply of and demand for e-government services, especially in a local and regional context, appropriate regional benchmarking systems with built-in evaluation of services and impacts, as well as the exchange of good practice within the context of inter-regional networking, are all necessary. This will assist in promoting new forms of governance based upon a strong role for local authorities as well as for civic society at large.

There is also a clear need at both policy and practice levels to differentiate between different types of region. This includes a re-examination of the underlying assumption that the problems of ‘lagging regions’ (especially rural and peripheral areas) can always be solved by copying more successful core regions. The European regional policy model tends to do this, especially in relation to the heavy focus on PPPs and related institutional capacities. For example, it is sometimes assumed that provided rural and peripheral regions find appropriate private sector partners then they can do (almost) anything. Future policy and research should include better and more coordinated systems for benchmarking and good practice exchange, and a closer examination of the role of different types of knowledge use and creation, as well as of the knowledge-innovation life cycle.
5  Session 3: developments beyond the EU

5.1 Overview

In session 3, three speakers contributed to widening the focus beyond the EU, both in the wider Europe as well as at global level.

Challenges to knowledge systems and to science and technology policy in the Accession States were examined by Ken Ducatel from the Enlargement Futures project of the IPTS in Seville. This was followed by Ursula Huws of Analytica, UK, who presented the Emergence project’s research on the delocalisation of work through eWork and eOutsourcing, illustrating how there are regional winners and losers in the new global game in which work can be moved around at an increasingly rapid pace. Finally, Steve Simmons of Addico Cornix, UK, reported on the Terra2000 project’s work on how policies should be developed in pursuit of a sustainable world.

5.2 Challenges for Knowledge Systems in the EU’s New Member States

Ken Ducatel (Institute for Prospective Technological Studies, Seville)

This presentation focused on challenges for knowledge systems in the Accession Countries. After defining technology foresight as forward looking intelligence and a useful tool to test belief about the ‘what’, the ‘why’ and the ‘how’, Dr. Ducatel examined the role of foresight for the governance of science and technology (S+T).

With respect to the ‘what’ question a number of thematic priorities for research in Europe emerge: knowledge Europe, healthy Europe, energy and mobility and building Europe. Each of these challenges is linked to a number of cross-cutting enablers and demand-driven applications. For instance, the knowledge society is linked to the enablers ICT and complexity, as well as to knowledge S+T, Health S+T, sustainable technologies and social sciences. The ‘why’ question focuses on the rationality of harnessing both the old and new economies, knowledge systems for production and services, and life-long learning to compete in the digital economy. The ‘how’ question is the most difficult to answer. Are choices achieved in a transparent and balanced way? What about the gap between aspirations and action?

After these considerations, Dr. Ducatel examined the opportunities Accession Countries have to break through to a knowledge society. Based on a long tradition of scientific excellence and a well educated workforce, some of them, such as the Czech Republic, Hungary, Slovenia and Slovakia, have a high potential in knowledge capacities. However, the systems have suffered an enormous shock up through the 1990s. Knowledge capacities went down to a third of their original level in countries like
Hungary and the Czech Republic, and highly qualified staff moved to low qualified jobs (such as taxi driver). And with the disappearance of the old industrial base, applied research also declined, which is of importance in a global climate of increased competition. In addition, there are staff deficiencies in the Accession Countries with respect to the general flexibility, adaptability and technical skills of university graduates.

The transition of these countries is not certain, as they have not quite the capacity to compete. Without the old industrial base and with low levels of investment in research (R&D as % of GNP), there is a problem to simply replicate EU type research. The Accession Countries feel nevertheless pressured to adopt a monolithic approach when they would have preferred to be selective. In consequence, their technology plans and research requirements look very similar to the plans of current EU member states, which is however not what these countries need. Here the ‘how’ question comes into play: science governance is inadequate with S&T policy fragmented across different ministries, and with poorly developed or lacking policy development tools and follow-up evaluation. Also agendas tend to be driven by traditional S&T centres in metropolitan areas, which do not necessarily represent the interests of regions, SMEs or of society as a whole. This leads to a discrepancy between available resources and capacities versus aspiration.

There is thus a need in all accession Countries to move to a more open and transparent priority setting with effective and open management, good practice on specification and implementation of technical standards and a balance in supply and demand side interests in setting agendas. With respect to the knowledge infrastructure the Accession Countries need to overcome the fragmentation in decision making, they need to network multidisciplinary teams, and establish centres of excellence in applied research with industrial linkages. As there is not enough money to do everything – even in the very rich countries – there is a need for priority setting and greater selectivity. This can only be achieved in a transparent and open process.

5.3 The new role of the regions in a global economy

Ursula Huws (Director of Analytica and Associate Fellow of the Institute for Employment Studies, Emergence project)

Ursula Huws presented research results from the Emergence project on the new role of the regions in a global economy. She started with the identification of two paradoxes: the ‘death of distance’ is actually leading to the increasing importance of place and locality, and ‘dematerialisation’ is being accompanied by increasing material production.

The question of the importance of ‘place’ in the digital economy was posed. The possibility of delocalisation creates new forms of competition between regions. A very small difference can push a decision in favour of Banglore instead of another place in India. There are new regional critical success factors and the interplay of dynamism and inertia are shaping new geographies. In consequence, the risk of each region becoming a winner or a looser in the global economy is growing.

Another question about whether we are we seeing the dominance of dematerialisation or of new material production was also raised. There is a growth in importance of value
added by ‘knowledge’ or, put another way, an increasingly elaborate division of labour which abstracts and codifies knowledge. This leads to the creation of new knowledge-based commodities and, simultaneously, the growth in production of material goods.

Also, the ‘new economy’ is not autonomous as has been suggested. It depends greatly on infrastructure and there is a strong interdependency of manufacturing and service sectors. New sectors are born within the old. Process innovations lead to new products which in turn lead to new services which in turn generate new products. The commodification of services breaks down public-private barriers - so government becomes increasingly integrated into new markets for e-services.

Emergence focuses on business related services, looking at the whole range of potential delocation. The key questions of Emergence are:

- to what extent are these service activities telemediated?
- to what extent has this possibility of telemediation brought about a relocation of work?
- which forms does this relocation take?
- what are the implications for regions?
- what are the implications for employment?

The units of analysis used are generic business services, such as customer service, sales, data entry and typing, software development and support, financial services, etc. It is important to remember that all these services exist in relation to other commodities and sectors.

Emergence differentiates four forms of delocalisation: both internal and external individualised delocation, in-house delocalisation (e.g. remote back offices) and external delocation on the outsourced company’s premises. The latter includes specialist business services suppliers and telemediated outsourcing. There is a huge amount of delocation taking place. By far the greatest is outsourcing to business service companies. Most delocation is still out-sourced to local firms. Only 6% is outsourced outside the country. The private sector has much more outsourcing activities than the public sector, whereas the public sector relies to a much higher degree on individual e-lancers.

Looking at the significant factors which explain out-sourcing, the country variable is the most important. It is clear that there is no single European path to the information society. Based on the data it has collected, Emergence has developed an EU regional typology with respect to delocation:

- Nordic model – high eEmployment in general
- Anglo-Saxon model – moderately high eWork with diversity of forms
- Corporatist model – low incidence of eWork but with a wide spectrum with one extreme close to Nordic model
- Mediterranean model – high amount of eOutsourcing, highly networked across SMEs and largely in-country
- Transitional states model – high amount of eOutsourcing, but uneven and much cross-border, mainly undertaken by local branches of existing companies or by buying-in expertise.
5.4 Scenarios and modeling to support sustainable policy

Steve Simmons (Addico Cornix, UK, Terra2000 project)

Steve Simmons presented the Terra project which deals with the ‘IST proposition’, i.e. that IST has a significant contribution to make to sustainable development. The project aims to assist policy making decisions by assembling a large package of models and scenarios relating to IST, the new economy and sustainable development.

In this large and complex project, which includes partners from Russia and the US, as well as from the EC, it is particularly necessary to make clear and straightforward presentation of results to policy-making ‘clients’.

Project results are presented in a cascade: at the lowest level are ‘concept sheets’ – not intended to be a major activity, these present the essential background ideas existing prior to TERRA’s work, although often benefiting from further development in TERRA.

The main work in TERRA, however, is at the next level, that of creating ‘insight’ into the processes and the mechanisms by which IST contributes to sustainability. These insights are based on ‘transparent’ models, i.e. in which the workings of the model are made clear and are fully explained. Some of these are based on ‘dominant relations’ theory in order to reduce their complexity. Scenarios are used in three ways: to describe the input circumstances for models, to describe the output results of model runs, and as free-standing descriptions of options where the circumstances do not allow modelling (e.g. in ‘weak signals’ analysis where few data may exist).

At the head of the cascade of results are policy briefings: the credibility of TERRA policy briefings will be assured by the strength of its methodology. In this context, model runs...
and scenarios serve primarily to prove that the methodology works and can provide the insight (and thence foresight) necessary for policy making. The outcome of TERRA work is not some grandiose master model of all the workings of the world, but rather the provision of a set of tools of proven worth that can provide valuable illumination to the difficult task of formulating policy decisions with powerful implications for all our futures.

5.5 Issues arising

The three session 3 speakers ranged purposefully beyond the EU, both into the wider Europe as well as globally.

Ken Ducatel challenged the accepted knowledge systems and science and technology policy in the Accession States. He argued for the need in all these countries to move to a more open and transparent priority setting with effective and open management, good practice on specification and implementation of technical standards and a balance in supply and demand side interests in setting agendas. At present, the Accession Countries’ technology plans and research requirements analyses look very similar to the plans of current EU member states, which is not what these countries need. Instead, a more differentiated approach should be adopted, especially given that resources are short for doing everything in the Accession Countries; what is needed is priority setting and greater selectivity. This can only be achieved in a transparent and open process.

Ursula Huws raised critical questions about the importance ‘place’ in the digital economy, and successfully debunked the myth that we are moving to a ‘weightless’, or dematerialised, world where bits and bytes dominate over material production. The truth is that the ‘new economy’ is not autonomous as has been suggested by some researchers. It depends greatly on infrastructure and there is a strong interdependency with manufacturing and the service sectors. This leads to the creation of new knowledge-based commodities, but many of these are material commodities nonetheless.

There is an increasingly elaborate division of labour which abstracts and codifies knowledge in response to the vagaries of globalised competition, and results in fast changing winners and losers. The most important variable is that of country, particularly related to the cultural and institutional underpinnings of national and regional economies. A regional typology (as groups of European countries) offers a relatively sensitive explanation as to how e-work and e-outsourcing contribute to Europe’s emerging knowledge economy.

Finally, Steve Simmons examined the proposition that IST has a significant contribution to make to sustainable development. The TERRA project aims to assist policy making decisions by assembling a large package of models and scenarios relating to IST, the new economy and sustainable development. The outcome of this is not some grandiose master model of all the workings of the world, but rather the provision of a set of tools of proven worth that can provide valuable illumination to the difficult task of formulating policy decisions with powerful implications for all our futures.
6 Panel session: summing up

6.1 Overview

Finally, the Panel responded to some of the day's discussion points in a round table with four discussants. These were Maarten Botterman of RAND Europe as chairman and as coordinator of the JANUS project, Lone Dybkjaer, a Danish Member of the European Parliament, Andrew Miller, a Member of the UK Parliament, and Martin van Rossum, representing Telecities and Eurocities.

6.2 Themes and discussion

The main themes emerging from the workshop related to the different sectors and roles of government, where the 'e' fits in, and the importance and purpose of scenarios as a tool for a better comprehension of the world.

On this basis it is possible to sharply interrogate the pros and cons of e-government, and Maarten Botterman raised the following four key questions:

- what is the main gain of e-government?
- what holds e-government solutions back?
- what are the dangers of furthering e-government even more?
- what are the current priorities for action?

There was general agreement that a new relationship between the state and the citizen is currently developing. Andrew Miller argued that the citizen is first of all a 'customer' and that the path to e-government is not as steep as it sometimes seems. The political world is fully amenable to the organisational changes needed in shifting towards the information society. Martin van Rossum argued that, in this respect, the research community risks lagging behind in its commitment to information society progress and in comprehending its nature. Moreover, change means learning, hence it is more suitable to discuss 'benchlearning' than 'benchmarking', and there is a need for interdisciplinary knowledge. It is indisputable that a lot of interesting information is still locked within the tight boundaries of the experiment where it was developed. Networks of Excellence in the Sixth Framework programme can play a pivotal role in releasing this.

Cutting across these arguments, Lone Dybkjaer argued that, from a more 'democratic user's' perspective, the impact of current ICT usage on drawing the EU administration and EU citizens closer together is questionable. ICT potentialities seem to be inadequately deployed for such a purpose, though it should of course be a high priority. Moreover, the enlargement process brings with it new differences and new questions about the actual significance of the term 'democracy'. For example, is using a computer at all government meetings, as for example happens in Estonia, a sign of good e-government, better e-government services, etc.? The key issue is the misconception of
the problem at stake, i.e. is adding an 'ICT layer' to existing structures, de facto, effective? Does the citizen gain from such a procedure, or is it economically profitable for the government? Are, in fact, politicians too ready to accept the supposed economic gains of ICT implementation and usage?

Andrew Miller suggested that one of the problems is politicians’ propensity to regulate ‘static’ objects (e.g. the maximum height of a building) as this was easy and straightforward. Notwithstanding the difficulty of keeping track of what is happening in the ICT field, legislators are inclined to attempt to adopt such regulations in relation to specific technologies.

Martin van Rossum argued that one needs to take into account the adoption curve. As was the case with electricity, the telephone and television, ICT is also following an adoption curve which is accelerating sharply. To the citizen, it is no big deal to be able, for example, to renew a document on-line, (e.g. passports, driving licences, etc.) even if this happens as yet infrequently. Ironically, in very advanced regions (such as Scandinavia), ICT risks becoming a ‘dissatisfier’, rather than a ‘satisfier’. Citizens do not see great advantage in the new potentials but nevertheless expect instantaneous execution if they use them. If this does not occur, they will complain about it. Yet they would not have complained at all had they been compelled to use the old method! A desirable solution to any of these problems is an open source approach. If a good method is implemented in state X, this could be implemented also in state Y, if information flows properly. The problem is, things are not always like this in a world inhabited by humans, and especially politicians and civil servants. Barriers (or is it opportunities?) like culture, accepted institutional paths and ways of doing things, vested (and maybe desirable) interests often stand in the way.

Lone Dybkjaer pointed out that ICT was initially thought of simply as a new technology, not an organisational tool. But this did not last once it was realised that the control of the communication line can be changed. Moreover, in many respects it is still a one-way tool. It potentially provides so much information to which it is not always possible to respond. For example, e-mail overload does not enable the user to answer everything. Even so, if a response to a request to government is not fast, citizens will stop using e-mail and go back to traditional paper-based enquiries.

Martin van Rossum responded by arguing that the main problem is the lack of information exchange and of clear rules. Solutions to the ‘e-mail overload’ problem can and should be found, for example by answering ‘per topic’ rather than ‘per E-mail’ received. At the end of the day, there is a need for powerful knowledge sharing tools.

Even so, the political and electoral system plays a significant role according to Andrew Miller. A direct and constituency-based system, such as found in the UK, to some extent triggers off people’s expectation of receiving a prompt answer. Lone Dybkjaer argued, however, that time must mean some added value (in terms knowledge and, ultimately, money). What has the public officer actually learnt while surfing the net for 8 hours?

Drawing conclusions about the Panel’s priorities in relation to workshop themes, Maarten Botterman asked each member to explain the issues they thought most important:
• Andrew Miller: The public sector has a major responsibility. The power of the public sector as a purchaser should be directed to aggregate demand and, hence, create better possibilities for the private sector to invest in broadband and similar advanced technologies. This will assist in reaching out to peripheral regions and countries, limiting the risk of ‘have’ and ‘have not’ societies.

• Lone Dybkjaer: There is a concrete risk in increasing the gap between developed and developing countries. Ultimately it is about money. Reluctance in discussing this is wrong and can cause severe problems in the future. Additionally, gender issues are still an important issue, if not in Nordic Europe then in many other areas, and these must be addressed!

• Martin van Rossum: Much is already there, and it is not constructive to ignore this fact. Europe should build upon the current assets and launch a benchlearning event to be recognised by the heads of Europe on the occasion of the e-government conference in Italy in early July 2003.
7 Workshop follow up and conclusions

7.1 Post-workshop feedback and discussion

Feedback was sought after the workshop through a brief questionnaire asking participants to rank the drivers and barriers to e-government, to list the top three issues arising out of the workshop, and to make suggestions for future workshop formats and content. The full results are presented in Annex 2. Seventeen replies were received in total.

Drivers and barriers to e-government

Participants scored as follows on a scale rating from 1 (totally disagree) to 5 (totally agree):

<table>
<thead>
<tr>
<th>Drivers to e-government</th>
<th>Mean score</th>
</tr>
</thead>
<tbody>
<tr>
<td>a - Demand for better services</td>
<td>3.35</td>
</tr>
<tr>
<td>b - Need to improve efficiency and cut cost</td>
<td>4.18</td>
</tr>
<tr>
<td>c - Need to implement new ways of working</td>
<td>3.76</td>
</tr>
<tr>
<td>a - Lack of services offered</td>
<td>2.76</td>
</tr>
<tr>
<td>b - Services difficult to use</td>
<td>3.29</td>
</tr>
<tr>
<td>c - Lack of trust and confidence in services</td>
<td>3.82</td>
</tr>
</tbody>
</table>

The above responses strongly reiterate some of the main points made during workshop presentations. Participants seem to share the view that the main driver of e-government is the desire to ‘modernise’ government and apply ‘new public management’ methods in an attempt to make the public sector more efficient and to cut costs. The introduction of ICT into governments, both in internal processes as well as in making services more widely available, is often seen as an important cost-cutting, or at least a cost stabilisation, strategy. There are questions, however, as to how successful these are in practice. The fact that the demand for better services is not seen as an important driver recognises the fact that, at the present time, the supply of e-government services often outstrips demand, sometimes worryingly so.

As far as the barriers to e-government are concerned, the fact that lack of trust and confidence in services scores highest clearly reflects some of the issues raised during the workshop. Next but seen as less important comes how difficult services are to use which can be important in exacerbating digital divide issues. Finally, again, the lack of demand for e-government services seems to be not seen as the current bottleneck.
Main issues arising from the workshop

Many of the issues raised by participants strongly reflect the overall concerns developed during workshop presentations. The issues most commonly mentioned were:

1. The need to transfer results, learn from the experiences of others, develop ‘benchlearning’ activities, networking and collaboration, are all top priorities. This includes learning from the private sector where relevant.
2. Notwithstanding issue 1, there is also a strong need to recognise, preserve and develop the diversity across Europe.
3. The demand side of e-government needs attention as it is often seriously out of step with supply, both in terms of quantity and quality. This includes putting the ‘customer’ first, understanding why and how people use e-government services and the complexity of demand, ensuring that ‘warm services’ act as the interface, assessing the frequency of use, tackling potential digital divide and social exclusion issues, and the challenges of running parallel systems of both ‘e’ and traditional services.
4. Benchmarking thus needs to be more stakeholder sensitive and best practice should reflect different points of view.
5. There is a need for developing suitable e-government strategies, including those which:
   • are goal rather than process orientated
   • are forward looking and ambitious
   • understand that technology can be used for both good and ill
   • recognise that e-government is multi-faceted (e.g. offering administrative e-services is not the same as e-democracy)
   • promote interoperability
   • integrate organisations both vertically and horizontally, services, content and media
   • improve knowledge management capabilities.
6. Critical success factors for e-government need to be better understood, including the total consequences for government of introducing ICT, models for evaluating costs and benefits, trying to get beneath the surface similarities across government departments, access to the infrastructure and to services, and the critical need for security and privacy.

Suggestions for future workshop formats and content

In terms of workshop format, the main concerns were:

1. Lack of sufficient time for discussion and interaction between participants and speakers. There were too many speakers. One suggestion that a model workshop of a day and a half would be better.
2. More focus in a given workshop is necessary so that the agenda is not too broad. Less relevant presentations should be excluded in advance.
3. Perhaps small groups discussing ‘burning questions’ which are then brought back to the plenary debate.
4. Lunch should be taken in the room to promote networking and avoid disruption, and a larger room made available.

As far as workshop content is concerned, the main suggestions were:

1. Comparisons and benchmarking of different e-government experiences, including across different countries.
2. More emphasis on examining the differences across Europe.
3. E-government across the enlarged Europe, especially with a focus on financing and the deficit problem.

7.2 Summary and conclusions

Many important issues arose during the workshop, some contradictory but many complementary and which point forward to developing good and effective policy and research. These are discussed in some detail in the individual session reports, and are highlighted and synthesised in the following.

E-government is Europe’s next big challenge. The pressing questions are:

- how can government be transformed into a dynamic, service-driven concept and set of institutions (for example through re-engineering)?
- how can government provide interactive user-driven services to citizens and businesses which maximise security and generate trust and confidence?

The role of ‘modernisation’, or the ethos of the ‘new public management’ in this is critical, as is the relationship of government to the private and the community sectors. Many have argued that government should proceed down the path of business, for example by adopting a radical business process re-engineering approach. But, it is clear, that, despite the benefits this can bring, government is different from business for many reasons, including the fact that government cannot choose its customers and that users of government services take on a variety of roles, including as voters, tax payers as well as consumers. Thus, a “Government-Process-Reengineering” (GPR) approach may be more appropriate, learning from, but also informing business (for example in terms of social responsibility). Partnerships between the public, private and community sectors are one important way forward.

Good illustrations of both the potential and challenges faced by e-government are provided by experiments in e-democracy. These show that e-democracy is as yet severely underdeveloped in Europe. It is questionable whether simply adding ICT to existing structures will, de facto, produce more open and accountable government, even assuming that digital divide problems, including the gender dimension, can be solved. We need to re-examine the whole notion of governance and democracy, both supported by and independent of ICT, and this will take time, especially as the rapid ICT adoption
curve, is racing ahead of our ability to cope with and understand the processes unfolding. It is also important to be clear about, and control, what we wish to do. For example, e-democracy raises the potential to re-engineer representative democracy, but is this what we wish to do, or is it more simply a question of supporting our existing democratic processes and enabling them to function better?

An important related issue is what are the different roles that can and should be played by the different policy levels (European Union, nations, regions, etc.)? Nations can have a key impact in identifying current needs (e.g., where integration is most necessary). Local authorities play a strong part in communicating with stakeholders and citizens, whilst the European Commission should lead the way in standardisation and harmonisation initiatives.

It is clear that in many countries, strong central leadership, consisting of an overall vision, strategies, roadmaps, resources and the specification of standard solutions and frameworks, are paramount for ensuring success. However, this needs to be proactively complemented by local and regional initiatives, close to their social and business communities, driven forward by local champions who are able to find the appropriate balance between undermining special vested interests and fiefdoms with the need to preserve local autonomy and freedom to act. A difficult balancing act indeed, but an essential one and not confined to e-government initiatives alone. Different countries across Europe need to develop their own paths as each has unique identities, cultures, legal systems and institutional structures, but all can learn from the experiences of others.

E-government roll out across Europe today is marked by significant mismatches between supply and demand. In order to understand and respond to these, especially in a local and regional context, we need appropriate regional benchmarking systems with built-in evaluation of services and impacts. To supplement this, the exchange of good practice within the context of inter-regional networking, is also necessary. This will assist in promoting new forms of governance based upon a strong role for local authorities as well as for civic society at large.

A clear message from the workshop was the need at both policy and practice levels to differentiate between different types of region. This includes a re-examination of the underlying assumption that the problems of ‘lagging regions’ (especially rural and peripheral areas) can always be solved by copying more successful core regions. The present European regional policy model tends to do this, especially in relation to the heavy focus on PPPs and related institutional capacities. For example, it is sometimes assumed that, provided rural and peripheral regions find appropriate private sector partners, then they can do (almost) anything. A more nuanced and differentiated approach is necessary, particularly one which takes account of the role of different types of knowledge use and creation, as well as of the knowledge-innovation life cycle and how this plays out across regions and countries.

Greater policy nuance is also needed at the national and international levels across Europe, for example when it comes to R&D and S&T policy. Particularly when the specific needs of the Accession Countries are considered, there is a need for much
greater devolution and an encouragement of difference. This does not mean difference for its own sake, or not learning from, or adopting, some of the approaches of others, but it does mean not doing this blindly or assuming that ‘one size fits all’. There is all the more need for such a differentiated approach given that resources are short for doing everything. What is needed is priority setting and greater selectivity. This can only be achieved in a transparent and open process. Overall, it is clear that the most important variable in explaining these European-wide patterns is that of country, particularly in relation to the cultural and institutional underpinnings of national and regional economies.

Critical questions were raised about the importance of ‘place’ in the knowledge economy, as well as the relationship between virtuality and ‘dematerialised’ production, on the one hand, and the more traditional manufacturing and the service sectors on the other. It is clear that place differentiation is just as powerful today as ever, and, although the precise spatial patterns being produced are now more fluid and different in detail, they continue to resemble and build upon earlier patterns. The knowledge economy is not a separate identity. It depends greatly on infrastructure and there is a strong interdependency with existing sectors and regional characteristics. Many new knowledge-based commodities are being traded across the globe, but many of these are material commodities nonetheless.

The public sector has a major responsibility as driver and shaper of the information society and knowledge economy in Europe. This is not only through e-government and regional issues, but also in terms of overall policies, for example the need to limit the risk of ‘have’ and ‘have not’ societies both within and beyond Europe. There is indeed a concrete risk in increasing the gap between developed and developing countries. Ultimately it is about money. Reluctance in discussing this is wrong and can cause severe problems in the future. However, we should also recognise that much is already there, and it is not constructive to ignore this fact. Europe should build upon its current assets.

In understanding and exploring the future manifestations of many of these issues, scenarios can be an excellent tool in helping us look forward, as long as they are used purely as a means rather than the end. It became clear that the two main benefits of scenarios are to:

• assist in expanding horizons, in creative thinking, and in developing innovative solutions
• provide sharp tools for analysis and to help reduce risk whilst recognising that uncertainty will always be a characteristic of the future, and is itself, of course, also a spur to beneficial change and innovation.

However, it is important not to confer upon scenarios the near-certainty of a forecast, nor to become embroiled in the elegance of their detailed description or logical development. The question was indeed raised as to whether foresight tools or benchmarking could be misused as marketing instruments. Modelling, scenarios, foresight and benchmarking all reveal contradictions. In fact there is a big growth in these activities, but if they are simply misused as marketing ploys for old agendas they will have no credibility. More credence comes from limiting these tools to flexible and
discardable instruments with the real aim to get all actors involved in meaningful
discussion and to better understand the range of issues and the possibilities open to
policy design and choice.

Overall, there is a clear need for a shift in information society policy from one driven by
ICT/technology to one driven by a policy vision, enhanced socio-economic cohesion and
environmental sustainability, and with a strong focus on the local and regional
dimensions. In this context, appropriate e-government and regional benchmarking
systems with a built-in evaluation of services and impacts, as well as the exchange of
good practice within the context of inter-regional networking, are all necessary. Learning
through networks and communities of practice is one of the main instruments to achieve
this. Powerful knowledge sharing tools should be part of this process. Indeed, much
experience has already been gained across Europe but is often still locked within the
tight boundaries of local trials and experiments. Releasing this experience through
‘networks of excellence’ will assist in promoting new forms of governance based upon a
strong role for local authorities as well as for civic society at large. It will also ensure
that the same mistakes are not replicated across Europe.

Another important workshop conclusion was the overriding importance of socio-
edconomic research for the IST Programme in particular and for the European
information society in general. Such research contributes to a greater impact of the
technology research, and thus better research and policy overall. It was shown how
socio-economic research has a catalytic effect on, for example, eEurope, e-government,
e-democracy and regional development.

Socio-economic research helps us understand the major forking points possible for the
European information society, and how these can be systematically analysed and
pursued. Better policy development and implementation is the result. By enabling
various players to reflect on the dimensions of the future and the policies which lead to
it, Europe should be able to adopt paths to a European information society best suited to
all of its citizens and to its economic needs, whilst avoiding the biggest and most costly
mistakes.

7.3 Achievements
The workshop was successful in achieving the following results:

- Comparison of results of European and other research on regional development, e-
governance and different scenario building methods.
- Networking the socio-economic research community. Workshop participants were
drawn from EU Member States and European institutions. Importantly, participants
also included representatives from Accession States, the EU’s international partners
and international organisations.
- Providing analysis and extracting recommendations for policy-makers in the EC,
governments and industry
- Contributing to policy recommendations to the European Commission
- Identifying research gaps.

The workshop and this report contributes to the wider debate about the role of government in the Information Society, and provides an input to Janus' synopsis of socio-economic research emerging from the IST Programme and its relation to the wider research landscape.
Annex 1. Speakers’ papers

A 1.1 Rosalie Zobel -- Progressing the Information Society: the role of government

Rosalie Zobel (European Commission, Director DG Infso)

Dr. Rosalie Zobel is Director of the Unit responsible for Components, Sub-Systems and Applications in DG Information Society of the European Commission, focusing on 3 domains: technology, microelectronics and micro/nanosystems.

There is an important relationship between research and the overall policy of the European Union:

a. Enlargement -- Candidate countries are full partners in the Fifth and Sixth Framework Programmes.

b. The European Research Agenda (ERA) -- focusing on the Sixth Framework Programme, Eureka, COST and the National RTD Programmes.

c. e-Europe -- focusing on broadband access, e-business, e-government, security, skills and e-health

d. Other policies - such as the single market, the single currency, the security of Europeans and sustainable development.

The official mission-statement of the Unit is:

“To contribute to the EU Lisbon objective of making Europe the most competitive knowledge-based economy by 2010 by implementing the vision of ambient intelligence and the European Research Area through fostering R&D and mass deployment of enabling micro-, nano-, and opto-electronic components and systems, emerging embedded technologies and innovative applications and services in the areas of health, transport, environment and government”.

Perhaps a shortened version of the above is more appropriate: from atoms to administrations, from solitons to satellites, from quantum bits to terabytes, from solid states to Member States. The three most important keywords are: contributing to the Lisbon objectives, implementing and synergy.

This workshop addresses the interactive relation between the Information Society and the role of government: one feeds into the other. The Information Society is transforming government by developing e-government, and this is demonstrated by the fact that it is a key component of eEurope 2002, 2005 and IST/ERA. E-government is Europe’s next big challenge because it results from emerging research and can be considered both as a development and deployment area. This is highlighted by the forthcoming e-government Ministerial Conference, 7-8 July in Italy, in cooperation with the Italian Presidency.
In addition, e-government also impacts businesses, citizens and policymaking (e-policies). There are two core challenges for government in the Information Society:

1. government transformation to a dynamic, service-driven concept and set of institutions (for example through re-engineering)
2. providing interactive user-driven services to citizens and businesses.

E-government is thus an emerging challenge for Europe. It is addressed by various programmes, policies and initiatives at local, regional, national and European levels, but also by private industry. Examples of the former are regional e-government programmes under the Structural Funds, national programmes in both Member and Associate States, DGINFSO policy activities, IDA and eTEN at the European level. Examples of the latter are e-government business departments.

E-government research activities in the forthcoming IST Programme of the Sixth Framework Programme, Call 1, can be summarised as follows:

1. European Research on e-government
2. IST Research on e-government: Call 1 - Strategic Objective 3.1.9, focusing on networked businesses and governments
3. related parts of the IST Work Programme 2003-2004. For example: broadband, dependability/security, e-inclusion, the mobile user and worker
4. Priority 7 in the Sixth Framework Programme: Citizenship, democracy and new forms of governance
5. Priority 8 in the Sixth Framework Programme, focusing on ERA-NET and Research for Policy Support

It is important to look beyond research results and examine the impact of the IST Programme on policies in DG INFSO and other DGs, i.e. upon:

- research policy (technology analysis and trends)
- enterprise policy (competitiveness, SMEs, sectoral analysis, innovation)
- regional policy (government re-engineering, inclusion)
- enlargement policy (geographical focus, e.g. the Baltic States, SE Europe, eEurope+)
- employment policy (relocation, telework, new employment trends)
- sustainability policy (social and environmental sustainable development)

Why is socio-economic research important in the IST Programme? Because such research contributes to better research overall and to a greater impact of research on policy development and implementation. Socio-economic research:

- is a driving focus of the Fifth Framework Programme and an integral element of the Sixth Framework Programme
- provides a better understanding of ICT impact on economy and society
- provides the ‘glue’ between IST RTD activities for the benefit of society and the economy
- leverages an effect on EU policy

In short: socio-economic research has a catalysing effect on eEurope, legal and regulatory issues, the Structural Funds, CAP, entrepreneurship and SME policy.
The achievements that have been made by socio-economic research in the Fifth Framework Programme can be demonstrated according to six socio-economic research clusters in Key Action II:

1. The industrial organisation
   - scenarios
   - intangible assets
   - structural change
   - innovation

2. Work and development
   - impact on society
   - eWork and employment issues
   - e-inclusion
   - technology adoption

3. Sustainable development
   - corporate practices
   - transition to knowledge economy
   - corporate social responsibility (CSR)
   - sustainability: economic, social environmental

4. Legal and regulatory frameworks
   - virtual organisations
   - contract law
   - ADR schemes
   - DRMs
   - identity and IPR management
   - consumer protection

5. Regional Development
   - digital regional economies
   - statistical indicators, benchmarking
   - rural and regional development
   - public-private partnerships

6. Statistical indicators
   - productivity
   - intangibles
   - New Economy Statistical Information System
   - measurement harmonisation
   - impact assessment

Also in the Fifth Framework Programme there are about 80 IST projects on e-government and many interactions with related activities: networks, knowledge management technology, security, e-business, e-inclusion, e-health, regional aspects, international aspects, e-work, policy, eTen and IDA.
Mark Rickard -- IST: a challenge to government

Mark Rickard (Director of the British Hansard Society)

The purpose of this paper is to explore how electronic communications could enhance Parliamentary democracy in the UK by examining the exciting, and high risk, e-voting programme upon which the UK has embarked. This is focused for the next three years on local government elections, but with an eye to e-enabled general elections sometime after 2006. In the following an examination is made of three closely inter-related topics related to e-government.

The first challenge is that of achieving a substantial level of take-up of electronic services – one that justifies the expense of developing them. Judgements about peoples’ willingness to make use of services provided are absolutely central to any strategy for e-government. Are the huge expenditures being contemplated based on sound judgements of the market for government’s electronic products? Or are we making an act of faith, rashly consuming large amounts of other people’s money? So take-up is the first challenge. If that is achieved, much else will be forgiven. If it is not, we are going to look remarkably silly.

The second challenge is that of finding a customer-focused approach to delivering the services. Some of the most significant pitfalls facing e-democracy fall into this category.

The last challenge is to use the introduction of electronic services as a catalyst for re-thinking the whole approach to service delivery - in other words, re-engineering it. For example, to join up services that were traditionally, bureaucratically, separate. Or to deliver them through private or voluntary sector intermediaries rather than large and very expensive government departments.

E-democracy is an area in which all three of these challenges can be seen in play. In an earlier e-democracy paper ‘In the Service of Democracy’, the UK Government suggested a direction for e-democracy in the UK, based on two tracks.

One track aims to modernise the process of voting in elections, by introducing electronic channels for it. Most significantly, the Government declared its intention to develop remote electronic voting, so that people could vote from home or work. This was all set against a background of worry about declining voter turnout at elections, brought into focus by the record level of disinterest seen in the May 2001 general election, when turnout fell sharply from its historic average of about 75% - down to 59%.

Actually, this is now being seen more as a reflection of a general perception, on that occasion, that the opposition parties so obviously did not offer a credible alternative to the government that it was not worth voting merely to underline the point. Nevertheless, broad concerns about peoples’ sceptical attitudes to representative democracy remain.
So far as electronic voting is concerned, it is common ground that we cannot expect it, by itself, to increase the peoples’ propensity to participate in elections. If they are democratically disaffected, they won’t vote merely because we have made it more convenient. On the other hand, it did seem reasonable that Government should, when thinking of voting infrastructure, adopt the same broad stance it has done in respect of other public services. That is: if technology can help make the voting process less painful, or more effective, then we should try to make new channels available to the voters.

A strategic assumption underlying this policy is that a time will come when people will regard the requirement to go to a polling station to vote as so anachronistic that they will simply not be prepared to do it. That may be wrong, although we do have a very suggestive piece of evidence to support it. In May 2002, for the first time, some local authority elections abandoned polling stations altogether in favour of voting by post. A democratic innovation, albeit not a technological one: but in some areas it roughly doubled the number of people who voted.

This may be a sign that people are now applying consumer values to an activity that older generations regarded as a democratic duty, or privilege. The Government’s vision is therefore to put in place multi-channel mechanisms for voting. Some will permit remote voting, others will modernise voting from supervised polling stations.

We can link this back to the challenges listed a few paragraphs ago. Here we have a policy direction which, if fully implemented, would involve expenditure running into hundreds of millions of £s. The UK Government has sensibly committed £30M over the next three years to large scale proofs of concept. It will use the time both to promote them, and to assess, amongst other things, whether the likely eventual take-up of these services would justify their full-scale provision. In other words, Government is in this case stepping up to Challenge 1. A real acid test will come if, after three years, the public looks unconvinced.

And the Government can argue that its multi-channel approach is reasonably customer focused - within the constraints of electoral law and human rights legislation. For the foreseeable future, multi-channel voting will certainly not be cheaper than the traditional, inconvenient method – although a wholly electronic scenario might be. Nor is the initiative driven by the interests of bureaucrats – to whom it presents a host of new challenges they do not necessarily want.

Will it act as a catalyst for a radical re-thinking of the democratic process? It is certainly not the Government’s declared intention that it should do any such thing. But it might, nevertheless, one day prompt people to think that, as voting is now convenient and quick, they should have the opportunity to do it more often, and on a wider range of issues than merely the occasional election of representatives. Last Saturday, two million people walked in London, effectively voting with their feet against war with Iraq. Might an electronic equivalent one day emerge?
The second important track for e-democracy policy in the UK focuses on participation between elections. Here, there are endless possibilities ranging from the mundane to the truly revolutionary. Work is being done by a bewildering number of groups to develop the tools needed to make e-participation work in practice, some of it funded by the European Union. Perhaps Janus has all this in its sights.

A touchstone so far in the UK Government's thinking is that it wants electronic channels to strengthen, rather than undermine, the representative nature of our democracy. Any trend towards direct democracy – government by referendum – is viewed with considerable suspicion.

On the other hand, Government has been extremely wary of seeming to tell elected representatives how to do their jobs. The result has so far been a weak implementation vision for e-democracy so far its the representative elements are concerned. Everyone can have a website, and quite a few do. At the national level, many - if not most - will respond to emails from their constituents. It's not particularly expensive – but does it rise to the challenge of being customer-focused? So far this is not impressing. Is electronic communications being viewed as a catalyst for any fundamental re-engineering of representative democracy? Absolutely not!

Two quick examples can be given of the sort of radical thing that might make representation more appealing and effective in an electronic world. In the first, the convention constraining MPs to act only for their own constituents – people within their geographical area - might be relaxed. An MP having particular expertise or sympathies might then act for anyone who wants him or her to. Might this make them more effective, by playing to their individual strengths? Might people without any such distinguishing features find it harder to get elected? It's a distinct possibility - and might arguably be a good thing for democracy. In the second idea, much more systematic cooperation between tiers of representation could emerge, facilitated by electronic communications. By that is meant, cooperation between a constituent's European MP, national MP, local councillor and so on. They might even begin to regard themselves as a team, having related goals while respecting each others’ mandates. But neither of these things is on the agenda, as far as is known.

Closer to home, the policy on e-democracy recognised that there is considerable scope for Government to improve its own sensitivity to the democratic will of its citizens. In particular, the processes by which Government itself consults, at various stages in the maturing of policy, could certainly be improved by systematically incorporating electronic techniques.

As a starting point, it must surely be possible to enhance democracy by making the information on which democratic discourse depends much more accessible. The Internet is now recognised pretty universally as the mechanism of choice for finding information. Surely, Government can find effective ways to put the vast indigestible bulk of its information into the public domain in such a way that ordinary people can find their way through it. It involves not just making content available: but also making it understandable and useful to the person accessing it. That means making an effort to deliver the information in forms suitable for the expert, and for the layman.
Challenge 1 is relevant here. Would the effort required to present information in ways that meet the needs of people requiring it be justified? Would it be cost effective? And how far should Government go in this direction, without usurping the role of the media in explaining and prioritising the issues.

Assuming public debate can be more or less well informed, the next question is: how should it be conducted? At the moment, the Government has some well-defined rules for its consultations. Fundamentally, the process requires Government to publish its ideas and policy options. The public is to be given time to submit its ideas. Further time is to be taken by Government considering those ideas. And the Government’s response is eventually to be published.

This can all be done electronically, and is: but it is apparent that people’s expectations are not going to be met. They want to see the government respond to their ideas in a much more dynamic way. If they take the trouble to participate they want to see their ideas having an impact, or at least being acknowledged.

Some thinkers, notably Stephen Coleman, see the emergence of electronic communications as enabling the emergence of a process by which public policy is formed out of a deliberative process of public debate. To make sure it is fair, they would put the mechanisms for this in the hands of an independent body – some have called it a Democracy Commission.

We can bring this to a conclusion, here, by asking again the questions we opened with:

- Will people pick such mechanisms up in sufficient numbers to justify the effort involved in creating new, electronically based, institutions?
- Given the complex structure of democracy, and of government, is a customer-focused design to a new electronic environment possible? If each institution and, indeed, each representative insists on inventing their own approach, will anyone want to use them?
- Is the introduction of electronic services a sufficient catalyst for re-thinking or re-engineering the democratic process?

At the moment, the answers must be “maybe”; “I fear not”; and “I very much doubt it”.
A 1.3  James P. Kahan -- Scenarios as a means to support development of robust policies

James P. Kahan (RAND Europe)

Introduction

One hears a lot about scenarios these days, but the definition of "scenario" can differ widely, depending on who is speaking. In this presentation, we define a scenario for policy purposes as a picture of the future, that is internally and logically consistent, that is portrayed in a concrete fashion, and that illuminates the major issues to be dealt with in the policy debate. We emphasize that scenarios in this use are not forecasts; indeed, the only thing that can be said for certain about a scenario is that it will not happen as it is presented.

Scenarios are used in many ways, but two of the most important ones may be termed "analytic" and "horizon expanding." In analytic exercises, scenarios are built that vary according to dimensions that are of importance to the scenario, and a (sometimes large) number of scenarios are analysed to yield results on (sometimes very multidimensional) outcome spaces. In horizon expanding exercises, typically scenarios are presented to groups, and the groups react to the scenarios in structured ways.

Both the analytic and horizon expanding uses of scenarios call for scenarios to come in sets. Earlier, single scenarios would be built, but in modern policy usage, single scenarios are inadequate for exploring the intricacies of options. Thus, the number of scenarios in play for a policy problem may range from 2 to 3 for a human-intense exercise to literally billions for a major analytic effort.

Building scenarios

Building scenarios is an exercise in both discipline and creativity. The discipline is in structuring the set of scenarios so that they reflect the issues requiring exploration, and the creativity is in filling out the scenarios so that they make sense. The first step in achieving this is identify potential elements of scenarios and to sort them out according to two dimensions: whether the element is important or unimportant to the policy problem and whether, in the time frame posited, the element may be assumed to be more or less sure to happen or is uncertain. This is illustrated in figure 1 immediately below.
Figure 1: Two dimensions of scenarios

<table>
<thead>
<tr>
<th>Large uncertainty</th>
<th>Large effect</th>
<th>Small effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Varied among the scenarios</td>
<td>(Can be ignored)</td>
</tr>
<tr>
<td>Small uncertainty</td>
<td>Fixed among the scenarios</td>
<td>(Optional use)</td>
</tr>
</tbody>
</table>

Principally among the large uncertainty items with large effects, the dimensions to consider are constructed, attributes within each dimension to consider established, and elements that represent the attributes selected. The number of scenarios chosen will be a reflection of the space of policy issues under consideration.

The building blocks of a scenario are identified by first defining important elements, second assessing the uncertainty of elements and third creating a list of elements for possible use. Important elements are defined by desk research, interviews, focus groups and/or previous scenarios. The uncertainty of the elements is assessed by making use of the expertise of the scenario design team and/or outsiders in addition to using foresight exercises.

The next step is putting the scenarios together. This is done by defining important dimensions to consider, defining attributes within each dimension and selecting a structure of scenarios that spans the space of the policy issues that you are interested in. In defining the attributes within each dimension, it is important not to forget inherent correlations among dimensions. By selecting a structure for the scenarios it is important to focus on the the number of scenarios and the relationship among the scenarios.

Most important not to forget is having fun while doing all of this. It is important to provide common, concrete focal points, make use of trends and possible developments. Scenarios must be plausible, internally consistent, but not be likely. Therefore, some 'wild cards' can be useful to encourage people to get out of all their boxes. Finally, in designing the scenario one should not be afraid to provoke. In short: Play with them, but don't believe in them!

Illustrations

To illustrate the theory of scenarios, Prof. Kahan presents two examples of scenario usage. The first is an analytic effort to assess the value of constructing a new large sluice at the sea entrance to the Amsterdam canal. In this study, five scenarios were constructed and subjected to model-driven cost benefit analysis. The second is a horizon expanding effort in the PRISMA project (featured a number of times at this conference). Here, three scenarios explored possible futures for the delivery of six different types of e-services. Experts engaged the scenarios in a structured seminar game exercise.
1st example: Investing in the future of the North Sea Canal ports

In the Netherlands, the North Sea Canal ports have good ‘hinterland’ connections. However, the future economic development of the Amsterdam region (and the Netherlands as a whole) is perceived to be limited by bottlenecks in the sea access. Therefore, the construction of a new large sluice has been proposed. The value of this solution is uncertain: Is there really a problem? And, would a new large sluice solve the problem?

To answer these questions, the team of Prof. Kahan analysed bottlenecks and costs and benefits for a number of scenarios and a number of policy options. This was done from the point of view of different stakeholders, such as: Port authorities and port (-related) companies, regional and local governments, ministries and environmental groups.

The building blocks for the scenarios consisted of the amount of economic growth (on a world-wide, European and national level), policy (with regard to environment, energy and agriculture) and three different regional development policies: First, a product strategy – based on a discriminatory regional policy in favour of businesses that generate value added; Second, a neutral strategy – based on equal treatment for all types of businesses; and Third, a price strategy where the aim is to generate maritime flows via the Amsterdam ports. From these, five scenarios for analysis were developed, as shown in figure 1:

Figure 2: Five scenarios for analysis

<table>
<thead>
<tr>
<th>Regional development policy</th>
<th>Product strategy</th>
<th>Neutral strategy</th>
<th>Price strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Competition</td>
<td>Scenario 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>European Co-ordination</td>
<td>Scenario 2</td>
<td>Scenario 3</td>
<td>Scenario 4</td>
</tr>
<tr>
<td>Divided Europe</td>
<td>Scenario 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Each scenario was subsequently analysed by a chain of models, consisting of the demand for passage through sluices (which was based on waiting times and alternative ports), a cost/benefit analysis on multiple levels and environmental effects. This analysis was done separately for each major policy alternative. Finally, for each scenario the Net Present Value (NPV) and Internal Rate of Return (IRR) were estimated to 2035.

Based on this information it was possible to draw the following conclusion with respect to building a new, additional large sluice: The new sluice is probably in the national
economic interest, because most of the benefits come from increased economic productivity, which has nationwide effects. Although there is uncertainty in any of the scenarios considered, in most circumstances building the sluice is a good investment. In addition to that the new sluice is almost surely in the local economic interest and advanced technology can probably mitigate threats to safety and the environment.

2nd example: Prisma – e-Serving the Public

Prisma conducted an experiential-based examination of e-needs. The rationale for this can be summarized as: When I hear, I forget; When I see, I remember; When I do, I understand. Six to eight experts participated from each of the six service areas: Environment, Tourism, People with special needs, Transport, Public administration and Health. Most EU and NAS countries were represented and the experts were selected for both subject matter and ICT expertise.

In this case the building blocks for the scenarios were: Socio-political climate, Economic prosperity, Information technology growth and Sustainable development. The design team looked at two or three possible general states for each dimension and used general states as building blocks to construct three scenarios representing a range of possible futures worth considering.

In this way the following scenarios were constructed: First, ‘A Prosperous and more just Europe’, based on a democratic and equitable society, a strong economy, the fact that IT progresses and progress in sustainability. Second, ‘A turbulent world’, based on a market and centralised government clash, a cyclical economy, the fact that IT progresses and that the environment suffers. Third, ‘Recession and reorientation’, characterized by the facts that equity dominates, Eurodepression, IT progress hindered and New green prevailing.

The experts then worked within each of the three scenarios. They performed a SWOT (“Strengths, Weaknesses, Opportunities, Threats”) analysis of the scenario for the service area, they examined both demand and supply sides and finally looked at cross-cutting themes amongst service provision areas in the Brave New e-Europe.

Many of the results turned out to be scenario-specific and focused on issues like how to solve access problems, how public and private sectors interact, how much people "liked" the future they were placed in, financial structures and the nature of demands. Some results held for all three scenarios: ‘Le plus ça change ...’; ‘Equality is a holy grail’ and ‘the demographics are a major challenge’. By “Le plus ça change” it is meant that there are cost contraints, organisational constraints and e-Needs will increase (even in 3rd scenario). The fact that equality is holy grail is demonstrated by the differential access for rich and poor and the fact that some diseases will test the limits of solidarity. Finally, the demographics are a major challenge because of the ageing of the population and the existence of shortages of health care providers.

Conclusions
A first conclusion is that scenario construction can be a good in itself, as it creates awareness and aligns different frames of reference in a common language of discourse. Or more concrete, Actors in policy issues often speak in many tongues and the scenario development process forces people to use common terms of reference and to acknowledge others’ viewpoints.

Second, using multiple scenarios permits a test of robustness of policy options. When a policy option withstands the test of widely different scenarios, this suggests that the option has significant merit. If the same story results from all of the scenarios, then we have confidence that there may be a good idea there. Examples of this are the positive Internal Rate of Return for the sluice policy and the increased e-needs in PRISMA. In this cases we can begin planning for the future now and the policy focus will be on implementation: Political feasibility and Financial feasibility.

Even when non-robust results obtain, the circumstances under which different policy options rise to preference reveals what there is in the world that makes a difference. Signposts and triggers may be set up to detect these differences. So, for non-robust results it is not necessary to throw up your hands in despair nut instead look if the differences are due to scenarios. For analyses, they might be due to model assumptions. For expanding horizons, they might be due to interest groups. In these case it is important not to make a decision before its time but wait for signposts and triggers and focus on whether you can aim for a future that synthesizes the best of what the scenarios provided.

In sum, scenarios can be a useful tool to shed light on policy problems, if you don't fall into the trap of believing in your own inventions, are open to going outside of the box created by your scenarios, and use them in systematic, scientifically sound ways.
Information and Communication Technologies (ICTs) are transforming OECD economies and societies by contributing to economic growth, serving as engines of changes in business and integrating in social and individual daily practices. The fact that ICTs are engines of changes in business is demonstrated by changes in the structure of firms, changes in the organisation of work and changes in the way transactions are carried out. Although ICTs are integrating in social and individual daily practices, there are still important inequities in access and usage. The education sector is faced with similar challenges as those of industry, in structure, organisation and educational contents. In addition to this, there exist similar inequities as in the economy and society, but the education system can help to reduce them. Some examples of this are: The highest computer use is among young people; there is high investment of ICTs in education; and distance education has grown (an estimated rise from 710 000 students in 1998 to 2.2 million in 2002). Fig. 3-10 illustrate this by showing various trends.

Figure 3: Growth in the number of PC per 100 students, all levels (1999)
Figure 4: Ratio of students to computers (2000) - Total number of students enrolled in the school divided by the total number of computers, for the school in which 15-year-old students are enrolled, weighted by student enrolment, by quartile.

Figure 5: a. Frequency of students' use of computers at home and at school (2000) - Distribution of mean percentages of 15-year-old students who reported using computers at home and at school almost every day, a few times each week or between once a week and once a month.
Figure 6: Index of computer use (PISA)

Figure 7: Frequency of computer use (PISA)
Figure 8: Girls self perception of computer skills lower than boys

Chart D1.32. Gender differences in comfort and perceived ability to use computers (2000)
Index of comfort and perceived ability to use computers, for male and female students 15-years of age
With regard to the use of ICTs in education it is estimated that 75% of 15 year old students have a computer and 50% have access to internet and software at home. On average, 13 students share a computer, although there are wide variations according to countries, regions and schools in OECD countries. A third of students use computers for their schoolwork at least once a week; 22% between once a week and once a month. Use is lower for schoolwork in some lower per capita income countries.

The use of computers is spread between school and home and access and use is very different by countries. In some countries, use at school compensates for lack of resources at home. The data given so far provides an idea of the changes in the integrations of computers for learning at school. However, there is lack of key data on the use of ICTs in the education process, for example the use in management of educational institutions and the use by teachers and use in the education process.

In 2002 the OECD's Education Committee began an activity to identify and evaluate how ICTs can contribute to improved educational outcomes. Its main, but not exclusive,
focus is national public policy issues: both the policies required for effective implementation of ICT in education; and the impact of ICT upon educational policies. It examines the relationship between ICT and key policy tools (resources, teachers and regulatory frameworks) on one hand and key educational outcomes (equity, quality teaching and improved and more equitable learning outcomes) on the other.

In planning this activity, strong advice has been provided by stakeholders that it should not only attempt to describe present policies, but also take a forward-looking approach. Thus, we have adopted a different approach than the one usually adopted at the OECD Education and Training Policy Division, based on country visits, writing of analytical reports and organisation of conferences. Scenarios have already been used by our colleagues in developing alternative visions on the future of schooling (OECD, 2002). They have been extremely successful mainly because they have added a forward looking approach in education policy, an exercise that has not been common in this field. Also, it has been a highly valuable tool to help countries clarify the main directions and strategic options for schooling in the long term.

**Best practices of icts in educational innovation (oecd-ceri)**

The International comparative study on ICTs and organisational change in education (CERI, OECD) has the objective to understand the relationship between ICT and educational reform and innovation. In this study 94 good practices in 23 countries were selected because of innovations and investment in ICT. The main conclusions of this study are that ICTs are tools to carry on planned education innovations but they do not replace traditional education. Integration of ICTs in education render basic skills and teachers knowledge even more important.

The study addressed the question whether ICTs are engines of change. It was shown that they can be enigines of changes to the extend that technologies favour prepared institutions and ICTs don't act as engine by themselves. They are tools to carry on planned education innovations and the direction of change must be previously defined and personnel must be prepared for changes. In most cases, ICTs act as support for planned school improvements for teachers or the administration.

Furthermore the study showed that most innovations arose because of strategies to solve school problems, related to school survival, low academic achievement, independent studies, preparation for work and development of IT skills.

Strategies that were adopted are: Curricular change or improvement, improvement of access to education (anytime anywhere), new learning methods, reforms of school organisation and improvement of personnel support.

In conclusion, successful application of ICT and educational innovation depends on infrastructure, teacher and student skills and support, school context, ‘User friendly’ infrastructure, pedagogical skills of teachers and integration of ICTs in curriculum, training and development programs to teach ICTs and pedagogical skills with ICTs and barriers to adoption. Infrastructure relates to issues such as equipment, internet
connection and technical support. Barriers to adoption are the lack of opportunities for development during working hours, teacher resistance and a limited infrastructure.

**Ict: policy challenges to education**

In ICT: Policy challenges for education, the OECD is trying to think through what appropriate policy responses might be in the future to challenges that ICT is posing for education. Among different questions, they are exploring how ICT can contribute to greater equity in education, how teachers might be used as resources, what types of resources are most useful, how ICT can improve quality and effectiveness of their work and the types of institutional and regulatory frameworks might be optimal for dissemination of good practice in ICT use in education. This all happens in a context of high investments in educational ICT, but uncertain returns in better teaching, wider access and improved and more equitable outcomes.

The study concentrates on four themes:

1. ICT and policies for inclusiveness and equity
2. ICT and educational resource policies
3. ICT and teacher policies
4. ICT and education’s institutional and regulatory frameworks

In total, 22 countries are participating. The method is based on some shared labour and some division of labor and is quite diverse, based on workshops and seminars, expert papers, scenarios, site visits and study groups. It focuses on policy as implemented, not only as described.

The study has a strong forward-looking element. It is not an attempt to describe present policies, but an attempt to adopt a forward-looking approach, based on scenario building. There is valuable experience: schooling for tomorrow (OECD, 2002) and a valuable tool for countries to clarify main directions and strategic options for effective use of ICT in schooling.

Scenarios will complement other methodologies in the activity. It is felt that they can assist policy makers to understand the best options for using ICT effectively. Countries may reformulate them to suit their own reality or country setting. They might change them, and they are not meant to be a normative or an empirical tool, but a useful tool for policy development.

The researchers are now planning how to best integrate scenarios in the activity. They are proposing to use them to test policy options and constraints for three separate but interrelated questions:

- Resources: the resource implications of students having access to ICT when and where they need it; resource implications of use of ICT in school management;
- Teachers: the impact of ICT on teachers’ work;
- Institutional issues: How ICT may impact the institutional and regulatory frameworks of education
The preferred options would be to develop alternative scenarios of the integration of ICT in educational systems using different dimensions of the three issues presented above. These are viewed as key factors that directly impact on the central question. The researchers would also work to identify the large driving forces that may have an impact on our main issue, including the economic, political and social forces at work.

A more practical example of how the researchers might proceed: In relation to teachers, they would explore the tasks they are expected to perform, the types of skills they require, and provide different alternatives. They would develop views of the different role of teachers might play according to different alternatives. They could place these different alternative views and put them together with the alternative views developed under the other themes to develop the final scenarios.

The OECD is a good resource of national and international expertise for verifying the alternative scenarios produced and for refining them. Participating Country Delegates are often key players in the policy making process and we can use their expertise. The organization of workshops and meetings can assist us in the process. Theme Advisory Committees would be excellent resources to assist in developing the different dimensions for each theme, and these would be brought together to for the different scenarios.

The time frame of the scenarios is quite important. If it is to be realistic and useful for policy makers, a short time frame is preferred given the rate at which the educational use of ICT is changing in all OECD countries and given the varying levels at which ICT is being used in education in OECD countries. Overall, the OECD wants to help their constituents, national governments and education policy makers, look into their future and help them make key decisions on how to best invest in ICT in the education process and for improved educational outcomes. As the researchers are now exploring different alternatives, this conference will be a good source of information and practices in the field of public policy.

In response to Mrs. Pont her talk the remark was made by one of the participants that he was happy that a more skeptical view of the role of ICTs in education was also taken into account in the scenarios.

Furthermore the question was asked how the huge variety in each state was taken into account. The comment was made that scenarios are excellent to present in each separate country.
Laurent Gille (Ecole Nationale Supérieure des Télécommunications Paris, STAR)

Introduction

The STAR project – Socio-Economic Trends Assessment of the Digital Revolution - is focused on the analysis of the development of the Digital Economy in Europe, in order to contribute to a better understanding of the conditions leading to sustainable social and economic growth patterns – how to survive the transition phase. Within its work program, Star aims at providing a global framework for building scenarios of the consolidation of the information society. STAR original research is contributing by analysing evidence on the multiple changes brought about by the new economy in the socio-economic system and their policy implications. More than 30 issue reports are available on www.databank.it/star/. Four scenarios have been developed by the Star team and will be published in April 2003. This presentation explains the objectives of the scenarios, the methodology that has been used, and gives a first look at these scenarios.

Why scenarios

The basis for any foresight exercise must be recalled: the future is not predetermined, it largely results from orientations given by the entire diverse range of players (users, suppliers, regulators, public powers, etc.) via a certain number of questions inevitably raised by any socio-economic change: uncertainty is the keyword in foresight. It is therefore not possible today to outline what the information society will be with certainty. As a result, we should consider that not one, but several information societies are possible. It is this diversity which we try to illustrate in Star scenarios. The challenge of this exercise is therefore to draw up the configurations possible which the European information society may take on, in their diversity, so that players who are confronted with policy or strategic options can orient their decisions: foresight is not forecasting; it involves opening a forum for debate among those who will affect the future and be affected by it. What are the major forking points possible for the European information society is the preliminary question of any foresight exercise. Once identified, a scenario is no more than a combination of possible paths introduced for all possible forking points.

Before going to the framework of the scenarios it is important to clarify what a scenario is and what it isn't. Scenarios need to be simple but not trivial. They need to reconcile micro and macro approaches and not pretend at all to be forecasts. Scenarios aim at providing a framework to help think about futures. Any forecast is by essence "false" and qualitative thinking (what are the key issues) is essential. They should be accessible and comfortable to use and everyone should be able to comment, criticise, enhance and modify these scenarios.
Framework of the scenarios

Three domains have been judged to be determining. The first touches the heart of social communication processes: what type of media and use will the information society favour? The second concerns the economic system: what type of company and economy will the information society produce? The third relates to how the State will act and be affected by ICTs. For each of these three domains, we listed five key issues.

The first dimension concerns how technical systems fit into psychological, social and cultural processes of communication. Individuals, social groups, cultural, ethnic or social communities obviously do not communicate identically and may favour alternative streams of media. The second dimension deals mainly with the interactions between ICTs and the economy, especially how ICTs will influence industry structures and performances. The role of States in the advent of the information society, analysed in the third dimension, is more and more often questioned. The State is required to give an example (e-government), to finance innovation, to give confidence to users (safety, security of services, personal protection, etc.) but also to guarantee a minimum of public spaces and assets in an economy tugged between reinforced property protection mechanisms and the need to disseminate innovation and creation to a maximum. Inversely, the information society is expected to allow an improvement in the provision of general-interest services and notably a reduction in their costs.

These dimensions lead to five key issues in each of the domains. The key issues of domain 1 are as follows: First, which type of media will the adoption of communication services favour? This is addressed by the fact that the dominance of media making greater use of sensory communications or symbolic languages. Second, Will the increased availability of media modify social behaviours? In this domain this leads to the instant adaptation of behaviours: each person constantly adapts his community loyalty to the objectives pursued introducing "zapping attitudes". Third, Will the increased availability of information and communication systems modify individual behaviours? For example, ambient intelligence penetration: Individuals "outsource" their decision. The confidence placed in systems favours the birth of intelligent automata to whom many functions are delegated. Fourth, What adoption mechanisms (learning and dissemination) will be established? And Fifth, What consideration will be given to information? Figure 10 shows how these key issues are translated to different answers. In this figure, the set of answers in the second column is called ‘Corps’ and the set of answers in the third columns is called ‘Code’.
The key issues of domain 2 are: First, What impact will the information society have on industrial structures? For example, the fragmentation process (dis-aggregation): Profound technological changes reduce dramatically transaction and organisation costs, and threatens boundaries of firms. In addition to this, there is a growth of e-lancers. Second, What impact will the information society have on industrial performance? For example, efficiency gains through ICT either enhance consumer willingness to pay through customisation and other service features or a cost reduction strategy. Third, how will the production system respond to the demands of the information society (especially in establishing multi-actor information systems required by an intelligent ambient world)? Fourth, How will the company, society, knowledge and territories articulate? And Fifth, How are information society products defined and how do they develop? Figure 11 shows how these issues are related to different answers. In this figure, the set of answers in the second column is called ‘Hierarchy’ and the set of answers in the third columns is called ‘Market’.

**Figure 11: Alternative answers for domain 2**

| Industry structures | Stable constellation of incumbent companies: No impact on transaction and organisation costs; Industrial structures remain governed by classic economic effects. | Fragmentation process: Profound technological changes reduce dramatically transaction and organisation costs, and threatens boundaries of firms; growth of e-lancers. | ICT allow no gains, either on the cost side or the utility side. |
| Industry performances (Solow paradox) | Efficiency gains through ICT enhance consumer willingness to pay through customisation and other service features: ICT allow market extension strategy. | Willingness of small firms to establish collaborative MIS; MIS facilitate vertical fragmentation of systems; standards ease the establishment of MIS (and outsourcing strategy). | Inability of firms to adapt consumer behaviour; lack of integration of information systems. |
| Adaptability of firms to market requirements (building large scale multiactor information system - MIS) | Increasing complexity of the organisation of the value chain: MIS appears as part of a large organisation, e.g. through horizontal and vertical aggregation; lack of standards. | | |
| Network and territory | Personal or professional relationships secondary to social or business relationships; distant relations expand: induce more travel, more online contacts; the relationship to the territory is loyal but superficial; Uniforms and push internet in English; Internet commodfied. | Personal or professional relationships become more important because social or business relationships become more transitory (short lived); physical meeting retains its importance; the relationship to the territory is intense, but precarious; More local; sociability based on neighbouring improving the intensity and significance of local interactions; Widespread authoring; local contents. | |
| Evolution of products and markets | Little change in the definition of products and the structure of markets; strong bundling of products; maintenance of a certain free of charge nature. | Orientation towards product costs is favoured, thus dissociating bundles. Demand for truth about prices in order to pay for solely what is useful. | |
For domain 3, the key issues are the following. First, Can governments mobilise the information society to solve problems which they encounter in their administrative and productive activity? For example, will ICT help reduce cost pressure on services of general interest (health, education, transportation...). Second, What policy as regards investing in public assets? Third, What protection will exist for authors and consumers? Fourth, What policy will governments adopt to extend ICT uses and consumption e.g to those excluded? Fifth, What relation exists between policy towards the information society and sustainable development policy, notably understood from the angle of the environment? Figure 12 shows the alternative answers related to these issues. In this figure, the set of answers in the second column is called ‘Traditional Policy’ and the set of answers in the third columns is called ‘New Policy’.

Figure 12: Alternative answers for domain 3

<table>
<thead>
<tr>
<th>Policy regarding e-administration (e-health, e-education, e-transport,...) and e-government (fiscal, adm, citizen,...)</th>
<th>ICTs do not significantly improve the provision of services nor do they manage to reduce the general-interest services bill, notably due to resistance from professionals; public-private partnerships try to get around this problem</th>
<th>Reduce cost pressure on public services (health systems); Large benefits for education and training; through the introduction of normative best practices; Agreed standards; users agree to conform to common behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy regarding public goods</td>
<td>Production of public goods is left to the market, with these being regulated closely</td>
<td>Governments set the conditions for financize public assets which permits a “commons” policy favourable to the widest innovation</td>
</tr>
<tr>
<td>Protection policy</td>
<td>Oriented suppliers: strong protection of creation and of knowledge, low protection of personal data</td>
<td>Oriented consumers: more liberal policy in terms of copyright, relatively strong protection of personal data</td>
</tr>
<tr>
<td>Social policy</td>
<td>Interventionist policy: support for industrialists, policies of combating inequalities of access</td>
<td>Policy oriented towards competition (with the aim of obtaining the best prices), but lower interventions to correct inequalities</td>
</tr>
<tr>
<td>The information society and the sustainable development</td>
<td>More mixed contribution by the information society to sustainable development</td>
<td>Positive assessment of the information society in terms of sustainable development: provides arguments for a voluntary policy as regards the information society</td>
</tr>
</tbody>
</table>

Finally, figure 13 shows how the different sets of answers related to four global scenarios.

Figure 13: Four global scenarios

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Society and the individual</td>
<td>Corps</td>
</tr>
<tr>
<td>Industry</td>
<td>Hierarchy</td>
</tr>
<tr>
<td>Government Policy</td>
<td>Traditional</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 3</th>
<th>Scenario 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Society and the individual</td>
<td>Corps</td>
</tr>
<tr>
<td>Industry</td>
<td>Hierarchy</td>
</tr>
<tr>
<td>Government Policy</td>
<td>Traditional</td>
</tr>
</tbody>
</table>

Scenario 1 can be characterised by the fact that society prefers interpersonal media which reserve an important place for the emotions, the affective and the collective.
Ergonomics and learning of communication improve more quickly than their complexity and sociability develops significantly thanks to the facility of communication. The influence of ICTs is primarily felt at the level of the service relationship. Permanent industrial structures exist, while large multi-player information systems develop within legitimate organisations: the confidence placed in such systems is measured. State intervention remains important, but in a traditional way: Governments do not have policy latitude in the development of this information society.

Scenario 2 consists of a Gradual development of “ambient intelligence”: a massive invasion of “instrumental” tools and communicating objects. Technical progress is quicker in the mastery of complex systems than in man-machine interfaces and there is confidence in the safety and security of systems that generates strong delegations to systems: social relationships weaken. There is a significant reduction in costs in numerous activities, traditional organisations (firms) tend to break up and lose market power. General-interest services benefit from gains in productivity and succeed thanks to the power of information systems in determining good practices and in having behaviour adhere to these. Finally, governments recover financial and policy latitude leading to improved control of major public services and stronger involvement in the production of public assets in the economic sense of the term, infrastructure and knowledge.

Scenario 3 takes into account that interpersonal media dominate, but progress in man-machine interfaces is significant and this ease of communication gives birth to a new industrial fabric which is built around projects led by individuals. Here, people communicate to do business in a different way and this gives them an efficiency which can compete with large traditional organisations. Products are very modularised and therefore easily configured: each person can assemble the goods and services which suit him. Governments decentralise the production of general-interest services and infrastructures remain public, but competition for services develops and a considerable effort is made in the service relationship, as in e-government: Personal data is closely protected and protection of intellectual property is barely enforced. Also, this scenario revitalises localities, communication and proximity-based sociability.

Scenario can be characterised as a withdrawal scenario: development of media is mainly based on information and communication systems which use “symbolic” languages. ICTs do not manage to intervene massively in interpersonal relationships because the functionalities do not meet market expectations. “Instrumental” media tend to develop, although their appropriation raises questions. Economy is slightly affected by ICTs, with some effects on improving the quality of products, but not enough to launch strong penetration, as the service relationship essential to the first scenario is not fundamentally improved here. In this scenario, the two mechanisms present in the first two scenarios do not function. Nor does anything change in terms of public policy.

**Outcome**

As shown above, two scenarios per domain are proposed and four consolidated scenarios are developed. But, probably more important than these scenarios, is the toolkit provided with. All of this scenario construction toolkit can be mobilised by each
reader to enrich, adapt, and work the global scenarios on the basis of elementary scenarios. The goal of the foresight exercise is not to predict the future (which luckily it would be unable to do because the future remains to be constructed by all of the players who contribute), but to have these players reflect on the dimensions of this future, on the coherence of actions, strategies or policies which lead to it, in order to allow Europe to select the "best" information society possible.

After Mr. Gilles’ talk the question was asked whether e-government should be one of the tools for modernisation. From the short discussion it emerged that e-government should not only be perceived as e-administration, and not only as technology. New public management should also be included.

Finally, the issue was raised whether we should try to address at pan-European level or bottom-up?
The public sector is confronted with an unprecedented wave of pressures towards change. The presentation identifies major drivers and focuses on electronic government as a comprehensive change programme with a view towards 2010. Evidence is mainly drawn from results of work on the European research project PRISMA.

The idea of e-government, embracing the comprehensive use of ICT for the business of government and public administration, is reinforced by a number of drivers: an increasing pressure on public budgets stimulating new ways to increase efficiency and performance within public agencies; a restructuring of public sector functions and service provision along with the trend towards privatisation and outsourcing (‘reinventing government’); a change of management philosophies and their application on public sector activities (‘New Public Management’); a demand for service improvements by the public in societies getting more and more penetrated by the use of the Internet in all spheres of life and, last not least, a growing demand for government transparency, democratic participation and legitimacy, including the need to convince citizens of political projects and decisions as well as to justify administrative procedures, especially in the European Union (‘a Europe of the citizens’).

The potential of information and communication technologies (ICT) to innovate internal operations of governments as well as services to citizens and businesses has, together with other developments, spurred political initiatives all over the world during the past decade to implement “electronic” or in short “e-government”. Governments around the world have set very ambitious targets and are running programs with considerable financial volume for the implementation of electronic service delivery in the public sector. Continuous benchmarking of the progress in e-government is used as a key instrument to motivate implementation efforts through a sense of competition and the European Commission is reinforcing this innovation program with her “eEurope” initiative. Many countries target at making all public administration services available online by the year 2005 or earlier. No wonder that e-government has become one of the most widespread terms when it comes to the modernisation of public services. The wide diffusion of the concept entails that it is used with different meanings but basically e-government stands for a novel and comprehensive mode of using ICT, notably the Internet, by institutions of the state.

A common typology of e-government services distinguishes information, communication and transaction services as well as three generic application areas – administrative affairs (e-administration), political participation (e-democracy) and everyday needs (e-

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1 PRISMA (Providing innovative service models and assessment) is funded by the IST-Programme within the 5th Framework Programme of the European Union. For further information on the project see [http://www.prisma-eu.net/](http://www.prisma-eu.net/).
New potentials for increased quality and productivity of public services have been identified in a “new accessibility” of persons, procedures, data and objects as essential determinants of administrative action. It enables new designs and largely allows overcoming traditional limitations to administrative structures and processes with respect to space, time and organisation. Consequences for quality and productivity improvements of services will be outlined.

A view on the progress of implementing e-government services is offered by recent benchmarking studies, in particular the web-based surveys of 20 basic public services for citizens and businesses: The results find individual EU countries close to world leaders in e-government but also point to the limits of expectations of a fast and broad progress towards service innovation. More complex procedures are still far from a full interactive stage and would require extensive back-office reorganisations. But whereas supply is monitored quite intensively, it will be pointed out that the demand side and responsiveness to user needs deserve much more attention than they enjoy to date. Given the very ambitious targets and resource intensive implementation programmes there is also a need for greater awareness of risk management and more future-oriented strategies.

The PRISMA project applied a scenario approach to explore the variability and uncertainties of environments of e-government in a more long-term view towards 2010. This involved a two-stage process: First, three macro-scenarios of Europe in 2010 were developed (Scenario 1: “A prosperous and just Europe”, Scenario 2: “A turbulent world”, Scenario 3: “Recession and reorientation”) and were then scrutinized in workshops with external experts on the consequences for the development of e-government services. To put it short: Scenario 1 is in some sense an utopian scenario: The first decade of the 21st century has been beyond everyone’s expectations; the world is at peace and has experienced widespread economic and social progress as well as technological dynamic. In this environment e-government could fully unfold and progress in a balanced and generally accepted way. In Scenario 2 economic volatility and conflicts predominate and e-government has progressed but in a socially very segmented way, increasing the digital divide and efficiency pressures for public administrations on the cost of user needs. Scenario 3, finally portrays a rebel against technology, government and markets in favour of decentralisation and citizen empowerment, including a drastic demise of trust in e-services after a series of scandals with misuses of personal data which largely undermines the prospects of more complex e-government services.

These scenarios suggest certain caveats for future-oriented design strategies and offer insights for more robust policies. On the basis of this, PRISMA has developed recommendations for future-oriented good practice and roadmaps. In a nutshell, they include:

- strict target group and needs orientation in service design, increase of pro-active services;
- new human agents and multi-channel delivery for flexible support;
- further social inclusion measures (assisted public access points, design for all);
- transaction support for businesses and professional mediators;
- trust and privacy enhancing measures (transparent processes, seals), calm technologies;
– back-office reorganisation measures (intra- and intergovernmental) and portals to achieve one-stop service.

Practical roadmaps for today’s actions include topics such as ratings of administrations to promote service ethic, quality controls and surveys of online services to increase user benefits, identification of service priorities and incentives for reaching critical mass for more complex (transaction) services, incentives for inter-governmental and trans-sectoral cooperation and integration, specific programmes for the elderly, and strategic alliances with private companies and community organisations.
Similar to electronic Commerce in the private sector, electronic Government (e-Government) is the recent guiding vision for public administrations and governments to undergo a huge modernisation supported with advanced electronic media. Modern telecommunication infrastructures are explored to enable co-operation over time and distance and between the different actors in e-Government (citizens, businesses and public administrations themselves). The technical infrastructures provide the basic means to access governmental services and knowledge resources required in performing administrative work and democratic participation.

Yet, e-Government not only stands for using the Internet in performing administrative work. It also implies re-engineering of administrative processes, reorganising and restructuring of public organisations and shifting of focus towards a citizen and customer-centred service provision. In addition, the active participation of citizens in government and democracy has become a pivotal criterion.

In future e-government, services will be offered to the customers of public administrations through a wide range of access means: Internet portals (one-stop), mobile access facilities, physical one-stop shops, integrated in virtual market places, etc. (cf. figure). The level of process performance will range from simple information to integrated service provision and aftercare. It will be the customer of public administration to decide, which means to select to apply for a specific service.

Figure: Development of e-Government portals
Not only will the service delivery channels change, the implementation of new ways of governmental business through e.g. public-private partnerships, outsourcing of administrative work, multifunctional service shops, one-stop Government shops, etc. will become true as well. Through such organisational changes, the provision of better services for the citizens and businesses through e.g. one-stop shops, usable and easy-to-use services, availability at any time from everywhere and for everybody, etc. will become reality.

Portals for delivering services to business, individual citizens, mobile civil servants and communities reflect the view from outside government and administration. Although portals are of prime concern, it should be noted that communicating with public agencies is only the tip of the iceberg: the entire scope of administrative action has to be involved. Also, success in delivering electronic services depends upon the capability and self-confidence of citizens in doing e-transactions, as well as upon their trust and confidence in the protection of their personal data and in an open and accountable government.

A thorough rethinking of the machinery of Government is mandatory, to reveal many more situations where IT as an enabling force can enhance the effectiveness, quality and efficiency of public action, as well as its legitimacy. In some respects, the legal framework of these processes will need revision. New institutions, adapted to the new ways of producing and delivering public services, will emerge. The challenge of today’s system development teams is, now, to carefully integrate the technological advancements for the public administration’s benefit. To sum up, essential parts of such a vision are:

- Exploitation of technological advancements to support interaction among citizens or business organisations on one hand, and public authorities on the other hand.
- Use of modern technology with smooth adaptation of traditional processes and proper co-ordination to facilitate cross-border operation such as one-stop Government, electronic parliament or electronic democracy (towards seamless government).
- Re-engineering and adaptation of government and governance activity in order to meet the requirements imposed by society and market: customer- and service-orientation; eliminating outdated, bureaucratic structures; creating dynamic and flexible work structures with cross-organisational and public-private partnerships.
- Integrated view and adaptation of internal (workflow, databases, intranets etc.) and external (information and communication services to the citizens and customers, transactions of goods and services via the Internet) change requests for public activity.
- Guaranteeing the necessary level of security, authenticity and privacy in communication and transactions via the Internet.
- Realisation of political participation: electronic Democracy.
DEMOS stands for Delphi Mediation Online System and is until the end of February 2003 an e-democracy research and development project funded by the European Commission (IST-1999-20530). The result of the DEMOS project is an innovative Internet service facilitating democratic discussions and participative public opinion formation. The DEMOS methodology and system together represent an innovative service to powerfully support the public debate on-line, to generate and collect new ideas and to offer new ways for active participation to the citizens. For the local administrations DEMOS offers new ways to communicate with their citizens, to promote their aims and policies and a source of inspiration and idea generation.

The DEMOS approach consists of two complementary parts, the participation methodology and the technical platform and can only be understood as a socio-technical system. The participation methodology assembles and integrates three well-proven social research methods, namely the Survey technique, the Delphi approach and the Mediation method.

The three social research methods are applied and merged together in the so-called 'DEMOS process'. This process provides support for three phases of discussions: broadening, deepening and consolidating the discussion. In the broadening phase the discussion is initiated and information about the problem situation and the interests, positions and ideas of the stakeholders are gathered from as many sources as possible.

The DEMOS system supports this phase with tools to help moderators with clustering and structuring discussion forum articles and visualise relationships among them. The result of this phase is an outline and summary of the discussion thus far. The main task of the second phase is to address selected issues in more depth. For this purpose, the DEMOS system provides tools for helping the participants to break up into sub-groups, for conducting online surveys, and for collaborating on the formulation of joint position statements.

The task of the third and final phase is to consolidate the results from the sub-groups into a document summarising and visualising the main points of the discussion. Ideally, this structured discussion process leads to political consensus. In practice, participants may continue to disagree, but the reasons for the disagreement will have been made clear and comprehensible.

In November 2002 the DEMOS System and approach were tested in the City of Hamburg (Germany) in a real world experiment. In co-operation with the local government an online discussion and idea contest was initiated asking the citizens to contribute to and discuss the 'Leitbild growing city' which aims at increasing the numbers of inhabitants and the quality of live at the same time.

The contest was accompanied by intensive advertising and public relation activities and broadly covered in the local news papers, radio stations and television channels.
The DEMOS trial in Hamburg proved to be one of the largest experiments in electronic democracy on a municipal level ever conducted. With 538 users who registered for the discussion and 3907 contributions to the debate it made a substantial step towards laying the basis for more regular large-scale political debates online.

The discussion resulted in almost 60 condensed ideas pointing out how Hamburg could become a ‘growing city' and increase the quality of life for its current citizens at the same time. The ideas have been evaluated by an expert jury and seven of them were selected and recommended to the first major for implementation.

Both the DEMOS approach and the results of the trial in Hamburg will be introduced in the presentation.
The political question, the role allocated to regions in relation to State or local level, or the question of decentralization being a regional policy matter, only technical considerations of this question will be dealt with:

- The e-Europe 2005 action plan focusing on usage and users, the local/regional level is where information society develops, where continued progress in digital technologies translate effectively into economic activities and everybody’s life. But where is the right level to give on-line public services? Which coordination between the various government levels? e-Europe 2005 is about providing a favorable environment for private investment and the creation of new jobs, modernizing public services and providing a secure and dynamic framework for e-business. That is precisely where opportunities and challenges for regions and municipalities lie.

- ICTs are the vehicle of this interaction and open possibilities of a new type of governance where the supply of public services is conceived and organized in a co-operative and transparent way between users (citizen/company), governments and business. ICTs also make it possible to connect citizens to the political decision-making process, by creating e.g. a consultative relation in line with the citizen (e-democracy).

- Governments will have to ensure multiple and equal access - call centers, web, public access points... - and to apply the principle of technology neutrality based on sound feasibility studies (various technologies are available and competing like wireless, satellite or cable).

- The regional level is probably the most suitable one to bring coherence between the local initiatives and to engage collaborations/partnerships at the European level on interregional innovative projects in the public services. But major cities are also emerging as centers of development networking at global level. For example the city of Lyon, which benefit from advanced communication infrastructures and services, is trying hard to get a European dimension, in close cooperation with the department and the region, the objective being to get a favourable position in the international arena.

The electronic administration of the future

E-government is a key domain on which the Union has been working in close coordination with Member States, already since the definition of the e-Europe 2002 action plan. The role of the Commission is of: (1) defining a political perspective to allow to increase the value in the services brought by the administration to the citizen (productivity gains resulting from the Internet) and to set up new forms of governance,
(2) to be a forum of good practices and of experience sharing on various topics (quality of the services and improvement of the procedures, accessibility, democracy, local experiments and decentralization...), (3) to develop and support the trans-European dimension of services (public tendering, company registrations, social security...)

Important progress has been made in Europe on the provision of on-line public services since the comparative evaluation ("benchmarking") setting in place by e-Europe. However an engagement at highest political level remains necessary to take up the next challenges.

The main issues for the future appear us to be as follows:

- Equal access and transparency: public services accessible to all, from the geographical and social point of view and according to conforming to technology neutrality.
- Transition to broadband: a major challenge for the public sector in Europe to progress towards real interactivity of the services and to ensure interoperability for the provision of pan-European services. The e-Europe 2005 action plan sets the aim of 2005 for broadband connection to all administrations reorganizing for e-government: certainly the most ambitious challenge which covers in particular the integration of "back office" functions, between the departments (inter-connected and interoperable systems) and the redefinition of the procedures, of the tasks and of the qualifications, while taking expertise from the private sector ("Customer Management Relationship").
- The adoption of pan-European services for citizens and companies whenever it is necessary to establish an electronic relation with an administration which is not the national one (calls for tender, recording, taxes, licenses, Social Security...). This requires the interoperability and openness between systems at various national levels.
- Trust and confidence: communicating personal data on the Internet or carrying out transactions with the administration requires confidence in the safety of the information system and in the use of this information. As you know several subjects are also critical for the on-line public services such as electronic signature, on-line procedures or payments, as well as the confidentiality of data and privacy. This requires close coordination at European level.
- Defining a new governance: finally, beyond improvement in quality to the users, ITCs provide new "governance" opportunities, e.g. better participation of the citizen in the political decision-making process or development of "electronic communities". International cooperation between local authorities can well stimulate innovative experiences in this field.
In the last two years, considerable progress has been made to set in place methodologies of benchmarking e-government diffusion. For example, the Commission developed a common list of indicators to benchmark the achievement of eEurope 2005 targets. Concerning e-government, the indicators suggested include the supply and usage levels of interactive public services, on the basis of the classification developed by Cap Gemini Ernst & Young in the first benchmarking report. The most recent surveys in fact register noticeable progress in the online provision of public services and their degree of interactivity. According to the Survey on Electronic Public Services by CGE&Y\(^2\), in April 2002 the score for online offering of the 20 most important public services had reached 55% (where 100% is complete interactivity and 0 no online presence). Efforts and investments in e-government are starting to become relevant.

On the other hand, surveys on citizens/enterprises attitudes and usage of e-government applications have been showing only moderate approval and uptake, with strong variations among Member countries\(^3\). And evidence of achievement of the efficiency-effectiveness benefits expected from e-government implementation is still quite rare. Given the present negative economic climate, there is a risk that the momentum gained in the last years for e-government diffusion may slow down. Policy makers faced with decreasing resources and pressing immediate needs may postpone or reduce investments in e-government, unless they are convinced of its value. For all these reasons, it is important to start gathering evidence about the actual results of e-government initiatives. But policy makers and administrations managers need more than diffusion surveys: they need a good set of flexible and sound evaluation tools, in order to make decisions on investment priorities, monitor ongoing and ex-post results, measure success, and in general sustain in time a considerable effort of innovation introduction. In order to allow benchmarking at the European level, common criteria should be established to gather comparable evidence.

According to a forthcoming paper by the OECD\(^4\) E-Government Task Force, which carried out a first review of existing evaluation practices, findings about real and overall achievement of benefits are still limited. They do not support a comprehensive assessment of e-government. "The establishment of strategic and common evaluation frameworks, linking e-government initiatives at all strategic managerial and operational levels and which include key performance indicators to collect data on a regular basis will significantly improve the quality of the findings in the future" says the OECD paper.

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\(^2\) Web-Based Survey on Electronic Public Services, April 2002, Cap Gemini Ernst & Young for benchmarking eEurope 2002

\(^3\) See report "SIBIS Benchmarking Highlights 2002", from project SIBIS www.sibis-eu.org

\(^4\) "Examples of evaluation Practices used by OECD Members Countries to Assess e-Government" draft Point 9 by Diane Van Gills, Brussels September 2002
The lack of evaluation and benchmarking indicators is even more evident at the regional level. The role of regions is particularly relevant for e-government. Most online public services are managed and delivered at the local level. Moreover, the regions' political role and strategic leadership in modernising government and promoting innovation are increasing in many European countries. From the point of view of evaluation and benchmarking, the regional dimension allows for some aggregation of effects of local e-government experiences, without losing the specificities of the local context. On the other hand, most national indicators cannot be transposed at the regional level without any change.

There are research efforts by some regions (e.g. Emilia Romagna in Italy) and some European projects which are developing regional indicators for the Information Society, including e-government (specifically IST in the Regions and BISER, which is carrying out surveys of citizens and enterprises in a representative sample of European Regions). They tend to be focused on the "readiness" and "intensity of usage" dimensions, investigating citizens and enterprises attitude and practice of IS services. But even if these indicators become available, there is a problem in evaluating their significance in the context of each region, which implies the definition of a target or benchmark to measure progress against. Impacts analysis in turn requires more qualitative and in-depth analysis methodologies.

The STAR project is conducting a pilot study in a selected sample of European Regions (NUTS II level) to investigate the evaluation and benchmarking practices of e-government adopted at the regional level and gather the available data on results. An indicative classification of readiness, intensity and impacts indicators for the evaluation and benchmarking of e-government in the regions is being developed and will be presented at the workshop. On the basis of the pilot study, conclusions will be drawn about the relevance and feasibility of e-government evaluation at the regional level, and relative problems and perspectives for the achievement of main policy targets in this field. The interest of regional governments to develop benchmarking between European Regions will also be examined. Existing evidence of e-government effects will be analysed and if possible compared. Recommendations on guidelines for good practice of e-government evaluation implementation will be developed. The study will be published in July 2003.
Jeremy Millard -- The new regional agenda – evolving practice and policy

Jeremy Millard (Danish Technological Institute, Prisma, Beep, Biser)

According to the European Commission, there are striking differences in economic performance between different parts of Europe, particularly between the central and peripheral regions. As the economic position of countries converges, the divergences tend to be located increasingly within individual countries rather than between them. For example, there is a clearly delineated core super-region within Europe, whether measured in terms of employment, GDP, research expenditure, etc., which stretches as a band from north-west Italy through the south and south-west of Germany, up the Rhine/Ruhr west German corridor, into Flanders, Belgium, southern and central Netherlands, to south-east England and the Ile de France. The Digital Europe project calls this the ‘blue banana’ super-region and their research concluded that, measured at the national scale, ICT adoption has tended to weaken this core. At the sub-national scale, however, they found a clustering effect associated with the digital economy and the adoption of ICT which is stronger than that seen with traditional economic activities, although this is often better explained by industry characteristics, such as skill intensity, than purely ICT intensity.

Other research also points in the same direction, i.e. that, even though countries in the EU 15 may to some extent be converging in terms of economic indicators, at the regional level divergence is more likely to take place, and that some of this may be due to ICT adoption, although the effects of this must be seen together with wider economic forces, such as globalisation, increasing competition, de-regulation of markets, etc.

At the sub-national level, this clustering, or concentration process, seems often to be driven by both the demand and supply sides simultaneously. On the demand side, positive externalities for information flows and inter business exchanges are gained in larger markets, where the intensity of networks of exchanges also reduces the effects of risk from shocks. Other accounts extend traditional observations of the continuing importance of face-to-face contact in high-order business exchanges. From a policy perspective, there is also an important supply-side to the concentration process, including the role of education and labour skills, land and site availability and the supply of innovation, new knowledge and finance. Supply-side effects also result from institutional structures, which are also strongly influenced by the wider state-

6 http://www.digital-eu.org
administrative apparatus: competition law, regulatory structures and compliance frameworks. Indeed, the role of central government is vitally important and does not seem to be being squeezed to insignificance between the jaws of a new local-global dichotomy as some would have it.

Some proponents of the new and specifically the digital, economy paradigm have argued that the importance of urban centres as primary business locations is being challenged by the growth of company downsizing and decentralisation, outsourcing and a greater role for SMEs in the economy. These developments have, it is postulated, allowed a more flexible and footloose pattern of location for many types of business, and the contention is made by some that ICT actually leads to the “death of distance”. Others, however, see new or adapted types of both spatial centralisation and decentralisation taking place, with the former, in many important respects, often dominant over the latter. This would help to explain some of the increasing divergence in Europe’s regional map.

In this context, Castells\textsuperscript{10} charts an increasing separation of what he terms the space of flows from the space of places, leading to severe spatial, social and economic dislocation. This is exemplified when large metropolises, whilst becoming bound more tightly together on a global scale through exclusive high speed electronic networks, become disconnected from their local hinterlands leading to the splintering of physical networks and communities and increasing geographic polarisation. In similar vein, the examination of the digital divide can also be seen in a spatial context, i.e. the access to, and the use of new technologies, and the benefits they may bring, can be determined by both relative and actual location in important ways.

Thus, despite the apparent potential for economic decentralisation riding on the back of ICT adoption, most empirical research is pointing strongly the other way, certainly in the context of ‘high-order’ business activities. Whilst corporate decentralisation, outsourcing and SME development may be giving greater scope for development outside the main centres, the extent of spread of many of these developments tends to be restricted to within 50-80 kilometres from the headquarters or from major centres.\textsuperscript{11} Indeed, Bennett et al conclude that in Britain a very high proportion of external sources of supply to firms, particularly business services, is sought within the nearest 10-25 kilometres. Distance thus does appear to matter a great deal to the location of all businesses, and to business service firms most of all.\textsuperscript{12} Hence, proximity to major urban centres continues to be significant even if location within them may be less important. New agglomeration economies are apparent, suggesting that there is a continual concentration on existing major centres, especially for high value added activities, such as specialised (non routine) business and financial services, research and development, media, etc.

\textsuperscript{11} This process is also been seen in Finland – personal communication from Nina Mustikkamäki, Research Unit for Urban and Regional Development Studies, University of Tampere, Finland
\textsuperscript{12} Bennet op cit. pp. 415-416
This importance of business concentration throws emphasis on policy interventions that focus on improving local factor conditions as a means of enhancing competitive advantage. Most local factor conditions depend on local markets: for factor inputs, local demand and supply, industrial interdependencies and the structure of firm strategy and competition. Policy initiatives can play an important role in improving these conditions. At a local level, major efforts can be devoted to improving education, training, public research and infrastructure. Exchange of information can be stimulated and common approaches can be developed to improve synergies between businesses, and between public and private agents. Barriers to market entry or growth can be reduced, particularly for small firms, by improving access to ‘business supports’, for example through provision of information, advice and improved access to venture capital.

An underlying assumption of much of this kind of analysis is that a major problem for ‘lagging’ regions is that they either lack the type of institutional capacity present in more ‘successful’ areas, or, if they do exhibit some degree of institutional thickness, the local institutional milieu is conflict-ridden and dysfunctional. This agenda has been taken up in the European regional policy model with an administrative bias towards developing partnerships and capacities observed to have ‘worked’ in more successful regions, including the shift from local government to local governance, in which local authorities appear to be just one player amongst many, having become ‘strategic enablers’ rather than direct deliverers of services and policy. Apart from the democratic deficit problem in this approach, these assumptions do not appear to always be tenable in less developed regions, and the political question of how regional development should best proceed remains open. “In the Humber (UK) case, the most effective form of development might well involve strong leadership from the public sector. It may not be the case that (sub) regional prosperity could be easily achieved if only the appropriate private sector partners could be found. Institutional capacity might be appropriately directed and shaped by those local authorities who have had experience in grappling with, for example, the history of economic decline in the Humber sub-region.”

Similar conclusions have been reached by the Tigers project which examined six European regions or small countries away from Europe’s core. The common factors for success in such areas do not include a declining role for the local authority but upon strong public policy, a solid education system in the broadest sense (i.e. much more than IT skills), case specific investment policy, and conducive regulatory frameworks.

A clear strand in many research findings is that, although there is some decentralisation of economic activity this tends to be restricted to either the edge of the core or, if to more peripheral regions, to activities involving lower or medium added value in manufacturing or more routine service activities. Such ‘footloose’ activities are often attracted to non-core locations by lower wage costs, pockets of flexible and more stable

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14 Gibbs op cit. p 116
15 [http://tigers.infonomics.nl](http://tigers.infonomics.nl)
labour, and the existence of special skills and expertise\textsuperscript{16}. It does not seem that specific sectors (particularly when these are classified using the standard taxonomies) are being moved around in the new economy. Rather, a new type of spatial sorting seems to be taking place which is, to some extent, dependent on the type of knowledge created and exploited in a given activity, for example as seen along the tacit to explicit knowledge spectrum, so that at the two extremes\textsuperscript{17}:

- highly explicit (or codified) knowledge activities are more footloose and thus more spatially distributed, thereby prevalent in both peripheral and core areas – here the value added tends to be embedded mostly in the technology\textsuperscript{18}
- highly tacit (experiential, often requiring a large degree of face-to-face contact) knowledge activities are much less footloose and tend to concentrate in core areas – here value added tends to be embedded mostly in people and organisations.

The above research and policy strands and contradictions illustrate the fact that, to perhaps an extent greater than in many other policy fields, the new economy/the information society involves the shift to a new type of socio-economic system which as yet we are at a loss to understand within a regional governance context. There is now at least a ten-year history of regional planners and policy makers attempting to make use of ICT to enhance the socio-economic development of regions, and to use new and knowledge economy concepts as a basis for regional policy making and implementation. For example, the new regional policy agenda is largely bound up with understanding and promoting new forms of relationship between the local and the global, without forgetting, as some researchers seem to insist we should, the continuing though changing role of nation states, and how geographic and virtual attributes impact on such relationships.

As pointed out above, much recent research points to new or adapted processes of both spatial concentration and spatial deconcentration. Part of the new regional research agenda should be to examine this contention, and to attempt to unravel the causes, paths, impacts and interrelationships of these two processes. Perhaps one avenue is to examine how different types of knowledge creation and use fuel or mitigate such spatial sorting effects.

\textsuperscript{16} The Emergence research, for example, shows this, and especially Flecker J, Kirschenhofer S (2002), Jobs on the move: European Case Studies in Relocating eWork, IES Report 386, Brighton. See also : http://www.emergence.nu
A 1.12 Stefania Filipazzi -- PANDORA: Pilot Action on digital economy opportunities for Rural Areas

Stefania Filipazzi (Politecnico di Milano, PANDORA)

PANDORA is a high-impact project designed to show the concrete development opportunities for regional economies brought by the adoption of new information society technologies, services and practices through the implementation and demonstration of innovative, mobile (3G) Regional Public Services (administration-to-citizen, administration-to-business and administration-to-administration). The PANDORA Consortium, including Regional Governments from and outside the Union (thus supporting the EU enlargement policy), large Mobile Telecommunication Operators, renowned Research Centres and leading-edge medium-sized IST Providers is ideally positioned to address this opportunity.

In the last few years, industrialised Countries faced up the necessity of reforming Public Administration, a crucial problem since that context is quickly evolving. The mere political rules’ transformation is, actually, not enough and it is necessary to develop a specific method in order to enhance organisations’ performance, effectiveness and efficiency. By the way, it is necessary to implement new or further customer-oriented services and new technologies such as the automation of administrative procedures. The technological innovation and web-oriented technology are the necessary starting point for improving Public Administration performance; nevertheless, they need to be constantly accompanied by complementary changes in administrative and organisational fields. Consequently, there is the necessity to use a “change management“ approach, which should combine with information technology, change of organisation and human resources management. The change management is guided by four factors: the crisis of bureaucratic model, the monitoring of public expenditures, the pushes coming from the dissatisfaction of the citizen-user and the European integration. The advantages, coming from a new orientation towards objectives and to the final user of the offered service, lead to a greater flexibility in activities management, to the possibility to eliminate the no added value activities and to a higher knowledge of the managed activity.

The main aim of Public Administration is to be able to answer to the needs of citizens and enterprises. While in the previous time the citizen was the receiver of services and public activities, now he is the client of a modern and efficient system that offers certain services.

In this context develops PANDORA project that, with its aim of bringing nearer the citizen and the Regional Administration guarantying great benefits to both, can be defined as a Citizen Relationship Management project.

Moreover, the dynamic environment, where Public Administration operates, requires the need to access information regardless of distance and language, paving the way to make mobile public services affordably and securely available by anyone, anytime and
anyplace. This will result into a growing demand of tailored Web-based government information services to meet the increasingly mobile citizens (including individuals, domestic households, enterprises, etc.). PANDORA focuses directly on the information needs of citizens, SMEs, associations, etc. (the users) in five European rural areas (Lombardy, Italy, Basilicata (EU Ob. 1), Italy, Central Macedonia (EU Ob. 1), Greece, Limerick (EU Ob.1), Ireland, and Rhodope, Bulgaria) and offers an innovative solution for bringing them to the forefront of the Information Society.

The vision of the project, inspired by present user needs but projected to future requirements, is based on the delivery of one-stop shop multimedia and multilingual Web-enabled information services to serve the increasingly mobile citizens and enterprises.

The expected results of PANDORA project are:

- mobile users to access directly the required multimedia and multilingual information coupled with a set of integrated applications related to the public sector and SMEs;
- fast integration and on the move delivery of data and information stored in web pages, web databases, GIS systems, and other sources;
- distribution of time-variant data over the wireless Internet;
- set up of a vocal interface to all information and applications through voice recognition and speech synthesis technologies;
- set up of wireless communities sharing messaging, calendar, information, etc.

Therefore, the project outcomes are to reduce, in thirty months time, the regional administration costs up to 30%, to increase regional administration productivity of 50%, to serve some 200,000 SMEs (in typical rural economy sectors such as agriculture/farming, crafts, etc.) in the five European regions targeted by the project, making them more efficient and competitive and to contribute to the creation of hundreds thousand new jobs in the innovative GPRS/UMTS service market.

The project have been firstly engaged in identifying the user requirements and defining the PANDORA system architecture taking into account the number of standards under definition in the 3G mobile sector (3GPP, W3C Consortium, IETF and the WAP Forum).

Currently, the project team is carrying out the specification and implementation of an a brand new Mobile Content Management Platform able to access, manage and deliver wireless multimedia/multilingual information from Web pages, local/regional databases, etc., specifically exploiting UMTS technology features such as VHE – Virtual Home Environment and UPT – Universal Personal Telecommunication and building on the widespread-accepted, XML and J2ME (Java) powerful technologies. Finally, PANDORA will deliver the specification, implementation and subsequent extensive demonstration of customised services for the mobile citizen/business so as to improve citizen’s quality of life and help SMEs. The range of foreseen services will include public services such as mobile e-government, health, cross-border applications and support to wireless community networks and services to rural SMEs in the sectors of agriculture/farming, tourism, crafting and retailing.
References

Ken Ducatel -- Challenges for Knowledge Systems in the EU's New Member States

Ken Ducatel (Institute for Prospective Technological Studies)

This paper considers the potential contribution of foresight in addressing the challenges facing EU Candidate Countries on the pathway to the Knowledge Society. It draws inspiration from substantive results from recent studies carried out by the JRC/IPTS in the context of constructing the European Research Area and the Europe Enlargement. It begins by briefly considering what we mean by foresight and how it differs from cognate future orientated work such as Technology Forecasting and Technology Assessment.

The paper then moves into an analysis of the functions of foresight in terms of the 'what', 'why' and 'how' of science and technology (S&T) governance. The 'what' and 'why' questions for this paper can be regarded as relatively unproblematic. Answering the 'what' question requires the identification of the most important S&T issues, this is illustrated from JRC/IPTS work on thematic priorities for European Research in relation to the knowledge society. The why question concerns the degree to which S&T issues are important, which is again illustrated through the theme of the knowledge society as developed in IPTS work.

The third question, the how, is perhaps the most important part of the new S&T governance regime of which foresight is a part. Here the paper considers the issue of how to move from the identification of critical technologies into their selection with a special reference to transitional economies. In particular, it stresses the importance of open and interactive approaches in developing priorities and of co-ordinated and realistic priority design of S&T plans if critical technology exercises are to be effective.
This presentation takes as its starting point two paradoxes relating to the knowledge-based economy: the way in which the apparent ‘death of distance’ leads to increasing importance of the specific character of individual places; and the way in which ‘dematerialisation’ leads to increasing material production.

Using an analysis based on the concept of commodification it then demonstrates some of the inter-relationships between the ‘old’ and ‘new’ economies, presenting the development of a separate knowledge sector in the context of a general elaboration of the division of labour and commenting on the spatial and sectoral dimensions of this division.

This sets the context for a presentation of the empirical results of the EMERGENCE project, set up to measure and map the new global division of labour in knowledge-based work.

According to the results of a major employer survey carried out by the project in 15 EU and 3 NAS states, nearly half of all employers in Europe already carry out some form of eWork. Individualised forms of eWork, such as telehomeworking, multilocational eWork and eLancing form only a minority of this eWork but nevertheless account for some 10 million workers in the EU in 2000, predicted to rise to 27 million by 2010 according to EMERGENCE forecasts.

However, the majority of eWork involves the development of remote back offices or outsourcing work to remote office-based locations. This form of eOutsourcing is strongly associated with eGovernment but the evidence from the survey is that the public sector is lagging behind the private in this regard.

Despite evidence of common patterns, national differences emerge as more important than those by sector, establishment size or other variables. It must be concluded that there is no single European path towards a knowledge-based economy but that, on the contrary, there are still major differences between countries and regions in the ways in which ICTs are adopted. The presentation concludes with a presentation of different national styles in the adoption of eWork practices and uses this as the basis for the development of a tentative typology.

Biographical details

Ursula Huws, is the director of Analytica Social and Economic Research Ltd., the UK partner in the JANUS project. She is also Professor of International Labour Studies at the Working Lives Research Institute of London Metropolitan University and an Associate Fellow of the Institute for Employment Studies.
Steve Simmons -- Scenarios and modelling to support sustainable policy

Steve Simmons (Addico Cornix, Terra2000)

The presentation will look at some ways in which the creation (and maintenance) of policy affecting the Information Society and its contribution to Sustainable Development and societal well-being generally can be supported by the RTD community.

Using the TERRA2000 project as the baseline example, the development of understanding through semiotic, semantic, and syntactic levels can be interpreted into a more implementable schema of exposition of concepts; illumination of mechanisms and processes; and assembly of briefing material for the policy maker. Arriving at policy decisions requires more than just awareness of concepts and understanding of how processes operate however: policy is always concerned with the future, and thus with often uncomfortable issues of choice; of the exercise of will; of uncertainties and events, and so on. Support for policy must be accessible, unbiased and ultimately, useful to discussion that advances beyond statements of conflicting position.

TERRA2000 assembles a large package of modelling and scenario writing activities concerned with ISTs, the New Economy and SD, and places them into an integration framework. Its outputs include both specific thematic policy briefings and a wider methodological tool kit offering the potential to handle more and wider policy issues and instruments than those initially considered. Its approach is necessarily holistic, global and epistemological: but its policy-related outcomes must be sharply focussed and practical. This mirrors the ‘think globally, act locally’ paradox quite precisely: scenarios are one way by which the mundane realities of policy can be placed correctly into a larger picture. Scenarios can also help to cope with the epistemological conflict between prescriptions and options, and can provide a “shared space” for discussion and interpretation of model assumptions, mechanisms and outputs. The advantage is that such a common stage can reduce the potential for every discussion to produce an agreement to disagree.

Sustainability is a field in which many commentators see a need for urgent action: gross failures of sustainability evidenced by e.g. pollution events, inequity, or absolute poverty are generally seen as requiring urgent remedial action. This naturally leads to prescriptions (the medical analogy is particularly appropriate here). Scenarios enable the presentation of a range of possibilities where the pushing of a prescription (however well-intentioned or even indeed correct) would be neither acceptable nor appropriate. In

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19 This is especially true for: i) areas like the ‘New Economy’ or ‘Information Society’ (where definitions are so vague that parties are almost guaranteed to be arguing from different premises and where the discussion is likely to polarise into cheerleaders and doomsayers), ii) issues like sustainability (which are both ill-defined and remote in time, leaving ample scope for people to promise the earth and do precisely nothing), and iii) areas with a profusion of policy players wielding weak instruments in support of divergent agendas (where the effectiveness of a policy is directly tied to the degree to which it is commonly understood).
a fully developed and mature discipline unique solutions may be available; but aspects of our understanding of sustainable development (and ditto the socio-economic impacts of the Information Society) are not mature so our uncertainties about the future are compounded by our insecure understanding of the present. TERRA2000 addresses these difficulties: it does not offer solutions: but it does take a significant step forward in creating a credible support system for policy briefing in this difficult field.
Annex 2. Janus workshop questionnaire results

Questionnaire JANUS workshop

<table>
<thead>
<tr>
<th>Q1 - eGovernment is held back by</th>
<th>Individual scores</th>
<th>Total</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>a - Lack of services offered</td>
<td>2 3 2 1 4 1 4 2 3</td>
<td>47</td>
<td>2.764706</td>
</tr>
<tr>
<td>b - Services difficult to use</td>
<td>3 2 2 1 4 1 4 3</td>
<td>56</td>
<td>3.294118</td>
</tr>
<tr>
<td>c - Lack of trust and confidence in services</td>
<td>4 5 1 3 4 5 4 3</td>
<td>65</td>
<td>3.823529</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2 - eGovernment is stimulated by</th>
<th>Individual scores</th>
<th>Total</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>a - Demand for better services</td>
<td>4 3 4 1 4 5 5 3 3</td>
<td>57</td>
<td>3.352941</td>
</tr>
<tr>
<td>b - Need to improve efficiency and cut cost</td>
<td>4 4 5 5 5 5 4 5 4 4 3 2 3</td>
<td>71</td>
<td>4.176471</td>
</tr>
<tr>
<td>c - Need to implement new ways of working</td>
<td>4 5 2 3 5 3 5 4 3 5 1 3</td>
<td>64</td>
<td>3.764706</td>
</tr>
</tbody>
</table>
Q3 - In your opinion, what are the top three issues coming out of the workshop?

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Greater attention to demand side issues</td>
<td>Transfer of results and insights across projects</td>
<td>Inputs to e-government strategy building</td>
</tr>
<tr>
<td>a</td>
<td>joint benchlearning opportunities</td>
<td>possible future collaboration under FP6</td>
<td>networking</td>
</tr>
<tr>
<td>a</td>
<td>identifying the issues that need solving before just inventing solutions</td>
<td>need for <em>systematic and structured</em> communication among all stakeholders</td>
<td>information technology can be used for either good or ill</td>
</tr>
<tr>
<td>a</td>
<td>The distinction between e-Government and e-Voting</td>
<td>The distinction between more process efficiency and change in content offering</td>
<td>The distinction between knowing what to do, and doing it</td>
</tr>
<tr>
<td>a</td>
<td>Critical success factor för EGovernment (What will make it to happen and take off, initiatives, killer-applications etc)</td>
<td>Cosequences of eGovernment for the total use of IT in the administration i.e. portal, work-flow and datawarehouse etc. - How to make the quantum-leap to stage 4 in the EU Bechmarking stairs, Investments, Demand on Infrastructure, Skill and Competence in the organisation etc</td>
<td>Impacts of eGovernment on services and efficiency in service-providing, models for evaluating benifits and costs of eGovernment investments</td>
</tr>
<tr>
<td>a</td>
<td>The diversity across Europe</td>
<td>The need to put the customer first has become recognised widely</td>
<td>Judgements about peoples’ willingness to make use of services provided are absolutely central to any strategy for e-Government</td>
</tr>
<tr>
<td>Issue</td>
<td>Focus</td>
<td>Additional Considerations</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>We need to better understand and tackle the real needs of the stakeholders of e-government</td>
<td>Integration (of various kinds) of e-government developments is of utmost importance</td>
<td>e-government is multidisciplinary and has many facets and perspectives ... we need to find a common understanding!</td>
<td></td>
</tr>
<tr>
<td>Next generation benchmarking. (Bench learning as Jeremy named it)</td>
<td>How to develop goal oriented policies rather than procedure oriented</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disparities in regional development</td>
<td>need for better knowledge management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maturity of a number of research projects and strong case for &quot;using&quot; the results at all levels. This goes in the line of the Networks of Excellence = more sharing and collaborating , less competing to develop projects</td>
<td>A component of forward looking should be always an important part in all policy making, be it at the private or public level</td>
<td>Best practice should be search at from different points of view. More than trying to have a &quot;single and perfect&quot; data base I think that is going to be better to have several good databases and a lot of intermediation in order to help the users to obtain the most relevant practices in relations with their needs. Benchmarking exercises are very limited by their concrete objectives.</td>
<td></td>
</tr>
<tr>
<td>Understanding what is really happening in government departments who all try to look and sound the same (really story hidden).</td>
<td>Understanding what really works in G-C services - citizens not well represented.</td>
<td>Understanding why governments do not have clear interoparlability frameworks in place!</td>
<td></td>
</tr>
<tr>
<td>better assess the frequency of relations between citizens and administrations</td>
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<td></td>
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</tbody>
</table>
Implementing e-government has become a priority issue for most European
governments, but the level of development and the services offered vary substantially
from country to country. The success of e-government programmes also depends on
citizen interest and use of the services (demand) as well as access to the
services (access) (this can be a problem in areas or communities without the
connecting infrastructure or access to PCs linked to internet). This leads to social
inclusion issues.

| Lots of initiatives in eGov. but variable take up across countries. | Lack of innovation - a lot of initiatives but they are all similar. |
| The Central, fundamental role of the users in e-Government future evolution and development | The need of using new instruments inspired by those already efficiently and effectively used in the private sector |
| The need for ‘warm services’ to act as the interface to on-line services | The complexity of demands on public services | the risk of over burdening public services through having to run parallel systems on-line and traditional |

Concern about security and privacy--many are same concerns as for e-commerce.
Q4 - Do you have any suggestions for future workshops (either on content or organisation)?

<table>
<thead>
<tr>
<th>Some more room for discussion</th>
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<tbody>
<tr>
<td>continued discussion based on work integrated prior to the meeting itself, or in other words: outcome can be approved by circulating reports &amp; ideas prior to meeting, to prevent the need for instant response</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
</tr>
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<tbody>
<tr>
<td>1. Comparison and Benchmark of eGovernment for tax-administration, employment-service and population-registration in EU-states</td>
</tr>
<tr>
<td>2. Compare such projects in some EU-states such as Italy, France, Spain, Ireland, UK, Sweden, Denmark etc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Not yet</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. The benchmarking-criteria would be: Achievements by the aid of eGovernment</td>
</tr>
<tr>
<td>History and decision points</td>
</tr>
<tr>
<td>Demand from core-processes/services/New business-idea/New goals and new service-processes</td>
</tr>
<tr>
<td>Change in IT-organisation/IT-Management</td>
</tr>
<tr>
<td>Impacts on target-groups citizens and enterprises</td>
</tr>
<tr>
<td>Impacts on front-office</td>
</tr>
<tr>
<td>Impacts on back-office</td>
</tr>
<tr>
<td>Changes in infrastructure and systems</td>
</tr>
<tr>
<td>Security</td>
</tr>
<tr>
<td>Costs and benefits</td>
</tr>
<tr>
<td>Driving forces behind the eGov project</td>
</tr>
<tr>
<td>Conclusions</td>
</tr>
</tbody>
</table>

| More focus on papers like Jeremy Millards ie examining real differences in Europe. A little less scenario planning. It came accross as a sales pitch for Rand and not relevant. |
| It would be nice to have more discussion on the topics and to have more focused workshops (maybe 2-3 day workshops where per half-day specific issues are discussed and focussed solutions are presented and investigated in more detail. |
I think it would be a good idea to have less presentations at the workshop which would leave more time for discussion. Especially when the subject is methods a more unformal setup, maybe discussions on a "burning question" in smaller groups, could generate a more vivid learning experience among the participants.

It was a pity such a little time for discussion and informal contacts. A model workshop of a day and a half, allows for more discussion and informal contacts
frameworks for interoperability (e.g. eGIF); harmonising G-G, G-B and G-C across borders
While most of the presentations were quite interesting in and of themselves, there were way too many packed into one day: this made the later presentations rushed and prevented discussions from developing and offering constructive feedback. There were a few presentations that were much less relevant than others--these could have been excluded. On the other hand there were some that were very interesting, but there was practically no time for discussions. Since many of the participants wanted to engage in networking, it would have been nice to have more time for that. Instead of having lunch in the EU cafeteria, maybe it would have been better to have had sandwiches brought in -- but perhaps have the seminar in a somewhat larger room -- so that the cohesion of the group could be maintained.
Future topics: e-government across the enlarged Europe: it costs money to implement an effective and responsive system--how will growing government budget deficits affect the ambitious (or less ambitious) e-government pro

Less presentations and more discussion
Changing demands and changing government
## Annex 3. List of participants

The following people participated to the workshop as speaker or participant:

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