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TECHNICAL
REPORT

Towards a Digital Europe, Serving Its Citizens

The EUReGOV Synthesis Report

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Prepared for the European Commission,
Directorate General for Information, Society and Media

RAND EUROPE

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Preface

This report compiles and draws lessons from the various outputs of the EUReGOV project (2006–2008), which studied the development of (innovative and adaptive) Pan-European eGovernment Services for the Citizen (PEGS) in 2010 and beyond. In addition, it draws on parallel projects assessing the security aspects of PEGS (Securegov) and the evaluation of various EU instruments to support the development of PEGS, such as the eTEN programme.

The research object proved to be "a moving target", as the field of eGovernment and especially the delivery of cross-border services rapidly evolved during the course of the project. Illustrating this development is the fact that the number of eGovernment cases in the EC Good Practice Database was around 200 at the start of the project, while its successor, ePractice, currently contains over 1000 cases. In addition, PEGS were not well defined and different expectations arose as new policy instruments such as the CIP ICT PSP pilots, thematic networks and ePractices were being developed. This has lead to a continuous revision of the project goals to suit the changing context and policy agenda. Since the end of data-gathering for this report in May 2008, a considerable number of new eGovernment cases have been posted on the ePractice site of the EU, possibly also containing PEGS. Also, though PEGS may support eInclusion and eParticipation (as is demonstrated in the Solvit, MySociety and HELP Austria cases), this report does not explicitly deal with these two policy areas.

To allow the European Commission and EU Member States to actively and effectively engage in the development of PEGS, this report synthesises the findings of the EUReGOV and some of the Securegov projects to help inform future policymaking.

The target audiences are the European Commission officials involved in eGovernment policy, the national policymakers and case-owners thinking of developing cross-border applications, and people interested in new dimensions and dynamics of European integration. For more information about RAND Europe or this document, please contact Constantijn van Oranje at:

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Different Commission officials have been involved in various stages. A particular word of thanks is due to Trond Undheim, who has been a driving force behind ePractice and PEGS development in general, to Jean-François Junger, who succeeded Trond in a very constructive and supportive manner, and to subsequent Heads of Unit of the eGovernment and CIP ICT PSP unit at DG INFSO, Per Blixt, Dave Broster and Mechthild Rohen. Thanks, also, to Freek van Krevel and Pascal Verhoest from the European Commission for reviewing this final report.

Most importantly we would like to express our gratitude to the case-owners that allowed us to interview them, who gave presentations at workshops and who shared their knowledge and experience about PEGS to the benefit of the project, and the greater PEGS development community.

Thank you.

Executive Summary

Purpose, scope and considerations of this report

1. This report aims to pull together different pieces of work carried out by RAND and UNU Merit in the EUReGOV project and also builds on other RAND Europe projects (Securegov, eTEN Final Evaluation and eGov Vision 2020), in order to deliver the most comprehensive report on pan-European eGovernment services for citizens (PEGS) available to date. The topic of PEGS is often discussed but not well defined, and PEGS are frequently not seen for what they really are. More than services, they are policy instruments of a cross-cutting nature (between policy areas, European Commission Directorates General and different Member States).

   The goal of this report is to:

   - provide the first comprehensive review of PEGS and existing barriers to their development
   - inform the European Commission, as well as the current and future EU presidencies, in developing the successor to the eGovernment Action Plan
   - advise the European Commission on how to strengthen its role in supporting PEGS development
   - share lessons learned with public authorities contemplating or in the process of setting up a PEGS.

The role, nature, and context of PEGS

2. The role, impact and nature of pan-European eGovernment services (PEGS) for citizens and businesses are not yet fully understood. PEGS can directly improve the quality of life of (mobile) citizens and residents in Europe by facilitating cross-border administrative procedures, such as the registration of work permits, residency, and cars; healthcare provision and health insurance; payment, tracking and management of employment benefits and social security; student exchanges and recognition of papers, certificates and diplomas; and also the exchange of information on property rights and land registry. The list of potential services and associated benefits to the users and providers of eGovernment services in an integrating Europe with an ever stronger internal market is long.
3. At least as important is the role PEGS could play as a policy instrument in supporting strategic EU policy objectives, such as growth and competitiveness, mobility and the internal market, participation and inclusiveness. They hold the potential to directly affect

private individuals and economic actors and to improve the socio-economic climate in Europe. In addition they are an instrument to ensure effective cross-boundary (between government departments and crossing geographical borders) integrated policy development. As such they have internal as well external benefits. However this potential is not exploited yet.

4. The interest of Member State policymakers and of practitioners in cross-border and pan-European eGovernment services (PEGS) is growing. As European cooperation and integration deepens in all policy areas, the awareness of (administrative) barriers to this cooperation and integration is increasing – simply because increased cross-border activity leads to increased confrontation with administrative borders. In addition, the policy area itself is becoming more mature; PEGS (or more generally the need for cross-border cooperation of public services in Europe) have been on policy agendas for several years now and are gaining momentum as an instrument for strengthening the internal market and providing better services to the citizens of the EU. Furthermore, support tools such as the ePractice portal, the CIP ICT PSP programme Pilots and the interoperability observatory are improving. Consequently, the discussion is becoming richer, more sophisticated, visionary and future-oriented, and the knowledge of PEGS is growing, eventhough implementation is in many ways still in its infancy.

Current PEGS practice

5. However, there is still an important gap in the appreciation of PEGS as integrated policy tools for supporting EU policy objectives such as the internal market, competitiveness and growth agenda, connecting the EU with its citizens, administrative burden reduction, healthcare delivery standards, etc. Also, Member States, in developing national eGovernment strategies, rarely take account of the European perspective and the potential for wider benefits of cross-border services. The report will argue that the main contribution of PEGS should be found in the secondary impacts or 'outcomes' related to the wider policy objectives noted above, such as increased mobility, network effects and economies of scale and scope.

Defining PEGS

6. Until the current date the number of PEGS for citizens is limited. When defined as centrally run services (possibly using a federated structure) for all EU residents and accessible from everywhere in the EU, there is only SOLVIT, which provides citizens with solutions concerning the faulty national implementation of EU law. To capture current developments in any meaningful way the definition needs to be broadened to cross-border services and possibly even wider: those services that contribute to the permeation of a European perspective in eGovernment, which includes services for national citizens wherever they are in the EU and national services which are seamlessly accessible for non-national residents. Even the effective cloning of national eGovernment services across the EU through active good-practice sharing must be considered in this context.

7. Taking a wider perspective allows adopting a typology of different categories of PEGS.

   Type 1 PEGS develop as a top-down pan-European initiative. They are supra-national (beyond MS level) rather than international (between MS), in the sense that an extra

supra-national layer is developed in which services are integrated. These services can be either:

a) centrally managed and implemented by the Commission, or

b) facilitated by the Commission by linking existing services in Member States.

Type 2 PEGS evolve in a bottom up manner on the basis of existing eService initiatives at the Member State, the regional or the municipal level.

a) on the basis of eServices built by some leading actor in one of the Member States who seeks out counterparts to develop a joint or linked-up service, or

b) by a consortia of national actors and with support of the European Commission (as in the case of NETC@RDS).

c) PEGS can also develop bottom-up as a single national eService opens its doors to citizens at home and abroad.

In *Type 3 PEGS*, the 'pan-Europeanisation' takes place not via top-down or bottom-up coordination, but via the exchange, spread, and take-up of good eGovernment practices throughout Europe.

For these three types of PEGS, cases were selected and studied to identify the critical lessons that can be learned in developing PEGS; what the driving and enabling factors are; and what the barriers and concerns might be.

Common features of existing PEGS

8. The existing PEGS and cross-border services show a remarkable set of *common features*. Most PEGS develop bottom-up, driven by a few champions based on an existing network of similar organisations in MS that share a degree of trust. This trust, combined with a common goal or vision, is necessary to overcome the inevitable coordination challenge for participating partners. EULIS, a European land registry service, is a good example of an existing community of national land registries coming together to develop a common European eService. The development process is characterised by trial and error, remaining open for new applications, and solutions and new partners from other MS to join, as has been the experience in Netc@rds.

9. The *design* is usually based on the principle of user centricity, applying existing standards, and a portal structure, providing a neutral interface with the underlying national solutions, which need to be sufficiently mature to participate – including the availability of critical building blocks. Case-owners emphasise the need to ensure simplicity in design.

10. *Setting up and managing a PEGS* requires a responsible lead actor, project-management and public-finance skills, a project secretariat, a roadmap and clear milestones. This is the same for public and private cross-border services, as is shown in the case of SEPA (Single Euro Payment Area). Starting a PEGS is financially challenging as national or local organisations rarely have a budget for this kind of (external) activities. In most cases Commission funding proved pivotal in the start-up, although no case-owner suggested that the Commission should provide a sustained financial base. The services are governed by dedicated boards that tend to be large and inclusive, while acknowledging the need for effective decisionmaking (clear mandates, voting rights, instead of purely consensus-based).

In general it proves critically important to think about the long-term sustainability (management, financing, adaptation, etc) of the service early on in the process. For this it is important to also engage the private sector early in the process of designing the system as well as in developing the business model.

11. As the development of PEGS is cumbersome, the study sought to identify the factors that may be *drivers* in the process to overcome persistent barriers. Obviously there should be a clear user need that the service aims to address. Then it seems important to have high-level political backing in a ministerial declaration, Commission communication or EU regulation – as in the case of eEHIC/Netc@rds. This provides a justification and a framework for collaboration. A number of indirectly related policies are speeding up PEGS, like the Services Directive (requiring a one-stop-shop treatment for businesses, through electronic means), and targets for administrative burden reduction There are also other more existential motives for developing PEGS, like the desire to provide better public services, more justice and security, the environment, but also the ambition to be a leader among European peers, and to show off (and share) best practices. The expected pressure from (potential) users who would benefit from the service has been limited and fragmented across Europe. More support and drive for developing pan-European solutions may be expected from banks, health insurance companies and other actors with strong pan-European interests such as law enforcement agencies. These may either set up their own platforms or decide to use public platforms to support their services, if these are suitable and accessible.

12. PEGS face a number of *obstacles*, not least the obvious ones like the complexity of trying to cooperate among dispersed organisations in different countries, with different cultures, jurisdictions, legal traditions, incentives and concerns. But there are also more subtle systemic problems that impede cooperation and actual integration of services. The lack of a clear EU mandate means that the EC is not in a position to lead; in most cases it can only support and facilitate the actions of national governments. Also, cross-border activity is rarely budgeted for within national public agencies, and the project-management skills of qualified IT personnel to run multinational, multi-stakeholder initiatives are a scarce resource. At the same time the risks of failure are high and the rewards for success are not always apparent, in part because the costs and benefits are not always well aligned – the benefits accruing elsewhere and/or after a considerable time lag. This is exacerbated by the not-invented-here-syndrome and a tendency of overstating national specifics, which are hampering effective exchange of good practice, and lead to resistance at the shop floor level. There are also technical challenges, such as achieving interoperability between very different legacy systems; however, most practitioners indicate that these are the least of their concerns. Achieving full interoperability has many more aspects that are more intangible, such as overcoming differences in semantics, administration, operations and legal constructs. Technical, legal and organisational issues are also at the heart of achieving sufficient security levels to ensure system resilience, quality of service and the protection of privacy.

Role of the Commission and recommendations for possible policy options

13. As stated, in most relevant policy areas the Commission has only a limited or no formal Treaty mandate. Its instruments are largely those of the Open Method of coordination.

Still, the Commission is a central actor in all aspects of PEGS policymaking and its involvement is actively sought by stakeholders. It is at times a facilitator, enabler, initiator and executor of PEGS and/or related activities; and it does this in the political strategic domain, as well as through financial support, organisational and technical involvement, and legal and regulatory intervention. The most appropriate form of intervention will depend on the type of service (e.g. healthcare, law enforcement, etc.), the phase of development (preparatory research, improving national building blocks, enabling infrastructures, development of business plan, the design of delivery mechanisms, implementation of services), and the degree of collaboration (harmonisation, centralisation, federation, or best-practice exchange) appropriate to each different type of actionable activity needed to achieve the desired service.

14. As a development strategy for PEGS the Commission should combine quick wins for short-term momentum and visibility with the establishment of a roadmap for addressing more complex issues in the mid- to long-term. Quick wins can be obtained, for example, by focusing on relatively easy target groups that are likely to act as "early adopters" of PEGS. Examples are citizens and organisations that are "e-ready", already making extensive use of information and communication technology, and which have a clear need for cross-border eGovernment – think of organisations in the justice system (crime knows no borders) and of mobile citizens. The degree to which PEGS will be accepted as integrated policy instruments in a greater variety of EU policy domains – beyond the narrow field of 'eGovernment' – will determine how the Commission and MS prioritise the long list of possible policy interventions.

Measuring PEGS development: Impact-Assessment and Benchmarking

15. One specific concern of the EUReGOV study was the development of a framework for measuring readiness of MS and impact of PEGS. The first is intended to allow PEGS to be integrated in regular benchmarking of eGovernment activity in the EU and the second to prioritise in the choice of supporting different PEGS based on "high impact" potential – and also to scope what the overall benefits of PEGS could be for the EU as a whole. To be able to benchmark existing activity, a composite indicator for PEGS readiness and accessibility was designed, which captures some of the critical building blocks for PEGS, or at least factors that help enable the development of PEGS. The indicator serves to signal the importance of PEGS and create awareness, as well as actually measuring progress. In this initial stage where hardly any real PEGS exist, the emphasis will be on the first objective. To achieve this it will initially be a rather simple and crude instrument, which can evolve to become a more sophisticated tool once PEGS reach a higher level of maturity.

16. Building an impact-assessment framework for PEGS faces a similar challenge, given the limited number of actual PEGS available. Before developing a framework it must be clear what it should be used for. The study therefore explored different objectives of impact-assessment and selected the frameworks that are most suitable for that purpose, and adjusted them to suit the specific character of PEGS: ex ante or ex post, for assessing monetary returns and cost benefits or providing an evidence base for the wider policy relevance of PEGS, to select the "next big thing" or to justify expenditure. Most important in assessing PEGS is to look beyond the direct results or "outputs" and focus on capturing

the wider second-order impact or "outcomes". These can be very large, but are often difficult to determine and to isolate, due to the many other factors that play a role in the realising of these more complex effects. It is the challenge of impact-assessment, regardless of what system, methodology or model is chosen, to include these effects in the case of assessing the impact of PEGS. Only if this is recognised and made visible, real informed decisionmaking on PEGS can take place. Other critical factors that have to be taken into account while conducting an impact-assessment of a PEGS are:

- domain specificity (only assess PEGS within their specific policy domain)
- integrated nature of PEGS
- context of the overall policy package; involvement of stakeholders
- use of scientific tools and methods.

Models for impact-assessment

17. For more fine-grained ex ante and ex post assessment the most appropriate framework would be the eGEP, developed at the request of the Commission. To incorporate the specific nature of PEGS and capture the outcomes with wider European relevance it is suggested to add two more channels of economic impact: 1) the deepening of the single market; 2) leverage effects of cross-border eGovernment on existing eGovernment trajectories. An important function of impact-assessment is to support decisionmaking – for example, to help select and prioritise potential PEGS within a certain policy domain. In order to be useful for decisionmaking, a certain degree of simplification may be advisable, making eGEP less appropriate. For this we suggest using the ImPAcT model (taken from IPAT which is used in the area of environmental impact-assessment) given its great heuristic value in unpacking impact issues and communicating these. IPAT consists of a simple equation I = PxAxT; Impact = People x Activity x Time; for the purpose of ex ante evaluation of PEGS initiatives in their broader socio-political context the meaning of the variables P, A, and T have been expanded and reinterpreted, and m (mobility and modifiability) and c (complementarity) have been added to get I= m x P x A x c x T. Capturing PEGS within these impact-assessment frameworks remains a challenge in which accuracy, simplicity and user-friendliness need to be balanced. Both eGEP and ImPAcT need further refinement to achieve the right balance for their specific purposes.

Composite indicators for Benchmarking

18. PEGS challenges us to look ahead. The underlying policies in support of EU-wide solutions to interoperability, eIDM, eSignatures, eDocuments, data protection and security, etc. are all long term. At the same time, initiatives on the ground have their endogenous development trajectories, following their own objectives and constraints. Whatever common frameworks the EU can deliver now and in the future they will have to deal with the legacy of current and past development. If we assess these more bottom-up trends, there is a clear risk of fragmentation by individual services, policy areas, and geographical scope. However, it is not realistic to block developments until the pan-European frameworks are in place. Moreover it is better to harness and exploit the energy, drive and experience generated by first movers, whilst at the same time actively stimulating a convergence of good practices and solutions, as well as creating momentum and trust to establish effective common frameworks over time. This gradual and multi-pronged

approach will also allow the notion of PEGS as integrated policy instruments and potential drivers of European integration to evolve. At this stage any composite indicator for benchmarking PEGS should take these concerns into account, by applying realistic measures of PEGS potential (readiness) and progress (accessibility) at MS level. At a later stage it could become appropriate to focus on PEGS-specific performance, such as the number of PEGS, the level of sophistication, the volume of traffic, user-friendliness, etc.

A future perspective

19. Finally, in the future – depending on the level of EU integration and political desirability – it may become possible to provide PEGS as parallel services specifically targeted to the mobile citizen. This would be a voluntary system conceived as a virtual Member State providing social security, healthcare, employment benefits and pension rights. Such a system would avoid the complexity of linking MS social security systems, or needing to fit mobile workers in different systems as they move across the EU. This prospect is still far off. In the meantime PEGS are here to stay and are developing in a fragmented and diverse manner, while the EU is trying to catch up in developing the necessary supporting infrastructure such as eIDM, eDocuments, eSignatures, EIF, to allow pan-European interoperability. The potential of PEGS as provider of services to mobile citizens and as integrated EU policy tools remains largely untapped.

Contents

Table of figures

Table of tables

Table of boxes

Glossary

CCAFIS	Common Criminal Automated Fingerprint Identification System
CCN/CSI	Common communications network/Common System Interface (network for delivering EU customs services)
CIP	Competitiveness and Innovation framework Programme that started in 2007 and will run to 2013
CIP ICT-PSP	ICT Policy Support Programme (ICT PSP), a component of the Competitiveness and Innovation Framework Programme (CIP), which will run until 2013
DAM-VAM	Demand and Value Assessment model
Digital divide	Socio-economic inequalities caused by wide deployment of information technologies, separating the digital literate from those who do not have access to or are not able to use ICTs
DG	Directorate General
DG Digit	Directorate General for Informatics of the European Commission
DG JLS	Directorate General for Liberty Justice and Security of the European Commission
EC	European Commission
ECB	European Central Bank
eGEP	eGovernment Economics Project
eDocuments	Electronic documents
EDPS	European Data Protection Supervisor
EHIC	European Health Insurance Card (EHIC)
eIDM	Electronic Identification Management

eIDM score	eIDM in MS eGovernment policy strategy and implementation
EIF score	European Interoperability Framework in MS eGovernment policy strategy and implementation
EIF 2.0	Second version of the European Interoperability Framework
EMR	Electronic medical records
ENISA	European Network Information Security Agency
EPC	European Payments Council
ePractice.eu	The eGovernment portal and good practices database of the European Commission
eSignatures	Electronic signatures
eTEN	The European Community eTEN programme helps to stimulate the deployment of innovative, trans-European eServices of social or economic interest
ETSI	European Telecommunication Standards Institute
EUCARIS	European Car and Driving Licence Information System
EULIS	European Land Information Service
EUReGOV	EC-funded project about "innovative adaptive pan-European eGovernement Services for citizens in 2010 and beyond" of which this report is the final deliverable (2006–2008)
EURES	European job mobility portal
Eurodac	Community-wide information technology system for the comparison of the fingerprints of asylum-seekers
FIDIS	Future of Identity in the Information Society
FP7	The seventh EU Research Framework
G2B	Government to Business services
G2C	Government to Citizen services
G2G	Government to Government services
GUIDE	Project for creating a European identity management architecture for eGovernment
i2010	eGovernment Action Plan – The EU initiative dealing with various aspects of eGovernment under the umbrella of the i2010 Programme
IA	Impact-assessment

ICAO	International Civil Aviation Organisation
ICT	Information and Communication Technology
IDABC	Interoperable Delivery of European eGovernment Services to public Administrations, Business and Citizens
IP	Internet Protocol
IPAT	Impact = People x Activity x Time
IPR	Intellectual property rights
ISO	International Standards Organisation
LCA	Life Cycle Analysis – an impact-assessment technique much used in the field of sustainable development
LSP	Large Scale Pilot
MAREVA	Method of Analysis and Value Enhancement
MoU	Memorandum of Understanding
MS	Member States of the European Union
NHS Direct	National Health Service Direct is a 24-hour healthcare service in the UK delivering telephone and eHealth information services day and night direct to the public
OA	Online availability
OMC	Open Method of Coordination
PA	Public Administration
PAW score	MS policy awareness of and political will to develop PEGS
PCP	Pre-commercial procurement
PE	Pan-European
'pan-Europeanisation'	Increasing the European nature of public services delivery
PEGS	Cross-border and/or Pan-European eGovernment Service
PEM	Privacy-Enhancing Measure
PET	Privacy-Enhancing Technology
PKI	Public Key Infrastructure
PPP	Public-Private Partnership
PRIME	Research projecte for PRivacy and Identity Mananagement in Europe
PRM	Performance Reference Model

PSI	Public Sector Information
RHA	Regional Health Authorities
RTD	Research Technological Development
SAML	Security Assertion Mark-up Language
SD	Services Directive
Securegov	EC-funded project about "security requirements of pan-European eGovernment services for citizens" (2006-2008)
SEMIC	Semantic Interoperability Centre Europe
SEPA	Single Euro Payment Area
SIS	Schengen Information System
SISII	Second generation of the Schengen Information System
SME	Small to Medium Enterprise
sTESTA	Secure Trans-European Services for Telematics between Administrations
Subsidiarity	Principle enshrined in the EU Treaty, affirming that decisions should be made as close to citizens as possible
Subsidiarity failure	Concept developed in EUReGOV to describe national governments' shortcomings in taking into account the larger potential EU-scale effects of their actions
DG TAXUD	Directorate General for Taxes and Customs of the European Commission
UCE	Unsolicited Commercial Email
VAT	Value Added Tax
VIS	Visa Information System
WiBe	Economic Efficiency Assessment model
XML	Extensible Mark-up Language

CHAPTER 1 Introduction

1.1 Background to PEGS

An important benefit of being part of Europe for the citizens of European Member States (MS) is the freedom of movement. In principle EU citizens are free to live, work, study and retire in whichever EU Member State they want. In practice, however, mobile citizens are confronted with many costly administrative barriers, and are effectively limited in their role as citizens, voters, consumers, students, patients, employees, etc. As such the EU has an interest in ensuring equal access to all government information and services across Europe at all government levels; to allow citizens to interact, participate and transact with all relevant public authorities (PAs).

Participation and mobility of people are valuable in themselves. However, these also support the realisation of a number of other important European policy goals which carry great benefits for MS and their citizens. For example, mobility of citizens is crucial for further realising the internal market, and thus for realising all its associated benefits, such as better functioning markets for products, services and labour. Also, participation bridges the gap between the EU and citizens, which strengthens the legitimacy of the EU and its decisions. It is important that citizens feel the benefits rather than the limitations of being part of Europe in a very direct way. Administrative barriers are not only costly in a practical sense, but also in a psychological sense (e.g. euro scepticism).

In practice many barriers to cross-border service provision and pan-European access remain. Public administrations of MS are organised in different ways, and citizens switching from one MS public administration (PA) to another and/or being part of more than one PA face high transaction costs, in terms of the time and effort involved in dealing with non-compatible bureaucracies. The public administrations of Member States themselves also face high costs in terms of administrative burden related to dealing with mobile citizens, be they their own or from other MS. It is important that these costs are reduced and that mobility becomes a normal parameter of citizen behaviour; that it becomes integrated into the design of public service provision. The digital provision of public services, eGovernment, can play an important role in realising this, due to its ability to reduce the geographical constraints of service provision and to enable interoperability of different administrative systems.

Stimulating the development of pan-European eGovernment services (PEGS) and of the cross-border dimension of eGovernment services more in general are thus important objectives in the area of eGovernment policy.

In Member States, eGovernment services are mainly services provided by national and local institutions. The ongoing integration and expansion of the EU, however, demands that eGovernment services increasing take account of the European dimension. Pan-Europeanisation of eGovernment is therefore an important issue at the level of political declarations and European policies.[1] Driving forces of pan-Europeanisation of eGovernment are the obligations related to the implementation of the EU Services Directive, the EU-level administrative burdens reduction targets, the i2010 eGovernment Action Plan,[2] and the ICT Policy Support Programme towards eProcurement (Europe-wide tendering) and eIdentity management.[3]

1.2 Objectives of this report

This report is the final report of the EUReGOV project on "Innovative adaptive pan-European eGovernment services for citizens", commissioned by the Directorate-General Information Society of the European Commission. It presents a synthesis of the outputs and deliverables generated by the EUReGOV project, leading to a comprehensive study of the phenomenon of PEGS. The report will also draw on results of its "sister project" Securegov, which was primarily concerned with the eIDM and security issues involved with developing PEGS. The purpose of this report is to provide insights in:

1. what cross-border and Pan-European eGovernment services (PEGS) are
2. how PEGS evolve
3. what their impacts are on the organisation of government services and on the relations between government and citizens / businesses
4. how PEGS development, readiness and impact can be assessed and measured
5. what possible policy measures could be taken to support the effective development and roll out of PEGS.

The report intends to provide input in the ongoing development of PEGS and the follow-up of the eGovernment Action Plan.

1.3 Approach

The project covered a period of more than two years, in which the notion of PEGS developed further and the policy context changed. The project thus had to be flexible and

[1] See, for instance, Weehuizen and van Oranje (2007), p. 6.

[2] See European Commission (2006a). The action plan largely aims at increasing cooperation among EU Member States to establish eGovernment services that have real, tangible benefits to citizens and businesses across Europe.

[3] See the European Commission's Information Communication Technologies Policy Support Programme (ICT PSP) (European Commission 2009b). See furthermore the report on the workshop "Re-inventing the Wheel? – Transferring Best Practices in eGovernment" that we organised in the framework of this project in November 2007 (Quast and Glott, 2007).

adaptive in itself to provide inputs to changing policy needs. A number of methods have been applied at different stages of the project:

- The project started by defining PEGS and establishing a theoretical framework for an empirical review of PEGS. This was achieved through a literature review, stakeholder interviews and an expert workshop. This process helped develop a definition and typology of PEGS, their possible development trajectories and main stakeholders; the result of this process is reflected in Chapters 2 and 3.
- The definition and typology provide the framework for an empirical assessment of the nature, potential, design, characteristics, drivers, barriers, etc. of PEGS, which was conducted first through an analysis of the EU eGovernment Good Practice Database, then narrowed down through a survey and finally a set of case studies. The case studies are summarised in Appendix 3, and the main conclusions are featured in Chapter 4.
- Case study approaches:
  - The in-depth case studies draw on a review of policy documents and semi-structured interviews to learn how PEGS develop in practice and how this development can be stimulated by policy interventions. Case studies reviewed the innovation challenge, the technology involved, the organisation of the case, incentives and motivation for developing the service, and challenges and issues in good practice transfer.
  - To broaden the knowledge base, three additional comparative case studies were conducted:
    a. A non-EU-based service: A review was carried out of Canadian cross-state telehealth services. This case was chosen as health is a promising domain for PEGS and Canada has similarities with the EU, due to its federal and bi-lingual government.
    b. A second comparative case study reviewed PEGS activity in a non-governmental context. The MySociety case was set up as a pilot for assessing ongoing "European permeation" dynamics. In order to do this we monitored the email traffic of the employees, which was subsequently categorised and analysed to determine work patterns, priorities and intrinsic motivation of the organisation. We tested the findings and assumptions with the senior executives of the organisation in an internal workshop.
    c. A commercial pan-European eService: Single Euro Payment Area (SEPA). This case study – based on desk research and a presentation at the Securegov working conference – focused on the processes for managing multi-stakeholder involvement by private sector actors and the interaction with public sector entities.
- The empirical research identified the main elements that needed to be captured in an impact-assessment framework and in future benchmarking of PEGS. The impact-assessment framework is based on a review of existing eGovernment impact-assessment methods, validated against the project findings. The heuristic value of I=mPAcT method was tested for identifying high-impact PEGS use cases, which were presented

to a meeting of Member State governments' representatives and discussed in a scenario-based workshop. For assessing impacts of PEGS in a more detailed manner, I=mPAcT should be tested and developed further, to ensure clearer definition of the variables and their interaction in delivering impact. eGEP was modified by including the EUReGOV understanding of the different potential impacts of PEGS, framed within economic theory. The modified eGEP framework was not tested; eGEP itself has been used in national contexts to determine impacts of spending on eGov projects, but this has not been applied to PEGS yet. Given different functionality and use we suggest that I=mPAcT and eGEP are both valuable for different purposes. A detailed account of approaches to impact-assessment is given in section 5.1.

- The indicator design is based on benchmarking theory, literature review and an expert/stakeholder workshop to validate the definitions and indicators; it also serves to assess how relevant and practical the indicators would be. The indicator has been vetted by stakeholders and is likely to be applied in the next eGovernment benchmarking exercise. Section 5.2 discusses the PEGS indicators.
- The future outlook is based on two main pillars: first, an analysis of drivers and barriers from literature, and second, a discussion in an expert workshop and a scenario workshop in the Securegov project, which used hypothetical use cases of potential high impact PEGS (see previous bullet points) to colour the scenarios. Chapter 7 discusses these PEGS prospects.
- Policy recommendations combine our own understanding based on the various deliverables, the outcomes of two EUReGOV workshops and a working conference of the Securegov project, all involving case studies of different PEGS and different policy aspects (security, design, incentives and obstacles, good practice exchange, etc). The policy options and recommendations are described in Chapter 6 and the Conclusions.

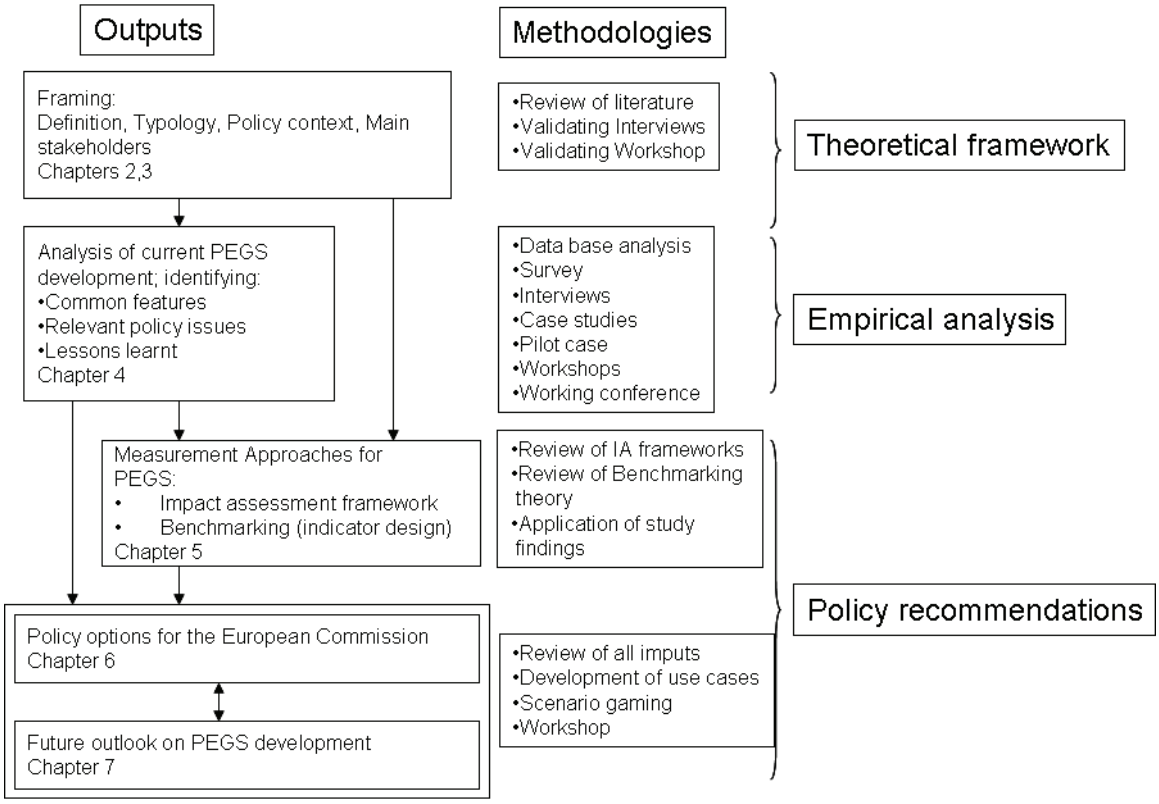

Figure 1 Flow of the project

1.4 Scope

The project gives a comprehensive overview of current PEGS for citizens and also looks at policy requirements beyond 2010. In some cases services were reviewed that were not primarily focused on citizens. As in many cases the cross-border G2G and G2B services are more mature, these were studied to learn lessons that may be applicable in services for citizens.

In the original title of the tender the services also needed to be adaptive and innovative. The project integrated the element of innovation in the development of a heuristic tool for ex ante impact-assessment. The "adaptiveness" of services is reflected in the repeatedly identified need for feedback, and user involvement in the development of a service. The pilot study of the civil society case specifically assessed the organisation's ability to adapt and reform services. In fact adaptiveness proves to be an important characteristic of any PEGS design, given the bottom-up mechanism driving the development of most PEGS. It is also instrumental to trigger the desired "snowball" dynamics, which may be one of the main effects policy should try to trigger, i.e., a few MS starting to cooperate via an open, adaptive structure (such as a portal), so that other MS can join in when they are ready.

Developing a measurement framework for PEGS for citizens proved difficult as no fully-fledged PEGS existed (except perhaps SOLVIT). Subsequently the definition of PEGS was widened, because it became apparent that the real phenomenon of interest was not so much PEGS but rather the process of "weaving together" of public service provision into

one "European tapestry" of pubic service provision, in which different patterns of connection can be seen. This part of the study's remit was thus reinterpreted to develop methods for measuring the propensity and different trajectories of eServices to develop into PEGS. Thus we looked at the most important drivers of cross-border service development and delivery and suggested measuring these elements in order to stimulate the strengthening of a European base for PEGS.

1.5 Content of the report

The content and outline of the report reflects the overall objectives of the EUReGOV project. It is structured roughly along the lines of different work packages.

Chapter 2: The Emergence of PEGS. This chapter gives a definition of PEGS, in order to establish a basis for the rest of the study. For example, what is a PEGS? Which PEGS exist? How do PEGS evolve? What is the policy context? What are common features (drivers, enablers, barriers, etc)? A typology of different forms of PEGS is presented.

Chapter 3: Understanding the stakeholder perspective. During the EUReGOV and Securegov studies many stakeholders have participated and their engagement and interests have been discussed in a number of ways. Based on these largely qualitative findings this chapter briefly discusses the main key stakeholder groups and their roles in a cursory manner, without having carried out a statistical analysis of their size and other measurable factors.

Chapter 4: Case Studies, Common features and lessons to be learned. This chapter provides an empirical basis for the study through a series of case studies of different types of PEGS: centrally run by the Commission with true pan-European coverage; bottom-up initiatives involving a number of MS organisations; and best practices in national eGovernment services offered to all citizens of the EU in residence with a strong potential for developing into cross-border services and eventually PEGS. In addition we looked at comparative cases from non-government actors in civil society and business and outside the EU (Canada), to provide alternative view points. The chapter assesses common features and lessons to be learned.

Chapter 5: Measuring: benchmarking and impact-assessment. Measurement of PEGS is required to highlight progress and to reward leading nations and PAs for their efforts. In an ex ante setting, impact measurement or assessment is needed to support prioritising of policy interventions, such as funding for research and service development, as well as providing political support through communications and even regulation where required.

Chapter 6: Policy instruments of the Commission. From the empirical research in the cases, surveys and workshops, a wide range of current and potential policy actions of the Commission can be identified, covering different kinds, areas and levels of intervention.

Chapter 7: Future outlook: a common or fragmented European public space? After assessing the current state of play it is useful to elaborate on the expected future developments. Given that the post i2010 policies will cover the 2010–2015 time frame and because the development of PEGS is very dynamic it is important to avoid taking a static view of the PEGS world. Pointers to future development and the identification of

trends help develop appropriate (future-proof) policy recommendations and measurement framework. In different PEGS-related analyses the EUReGOV, Securegov, and eGov Vision 2020 studies explored possible future developments, to help develop current policies. This chapter represents the common findings from these studies to inform PEGS policy going forward.

Conclusions and recommendations: Summarising main findings and actionable outcomes, which are translated into concrete policy recommendations.

CHAPTER 2 The Emergence of PEGS

In order to measure PEGS and their (potential) impacts, and also to provide a more solid basis for the study, a definition of PEGS was developed through a review of literature and validated in an expert workshop. Two further workshops were organised to discuss the findings of a series of case studies in order to determine the policy context(s), drivers of, enablers of and barriers to PEGS development and to better understand the mechanisms and potential for good practice exchange. This chapter summarises the outcomes of these activities to provide an in-depth assessment of the nature of PEGS.

2.1 Defining PEGS

Innovative Pan-European eGovernment services for citizens (or PEGS) form the subject of this study. At the start of the project in 2006 and in subsequent work it became apparent that no formal, accepted PEGS definition existed, even though the concept was mentioned in a number of policy documents[4]. The different elements (innovative, pan-European, eGovernment, services) left considerable scope for interpretation. Is cross-border or European-scale delivery of a public service by a Member State to its own citizens that live in other Member States sufficient to qualify it as a PEGS? Do services have to be executed or mandated by a government entity in order to count as PEGS, or does it suffice that the service is non-commercial? Is the mere provision of information in, for example, European languages other than the providing Member State's own language also a form of cross-border service provision? Would the data exchange and transaction between government agencies of different Member States that benefit citizens indirectly also count as "PEGS for citizens"?

The analysis of available services with a cross-border or pan-European dimension demonstrates (Diederen and Glott, 2008) that at present most eGovernment services with a PEGS dimension are provided at the national or sub-national (regional, local) level. As

[4] Such as:

1. the eEurope Action Plan 2005 (European Commission 2007e)
2. IDABC (See http://ec.europa.eu/idabc/)
3. European Commission (2003b)
4. European Commission (2005b)
5. European Commission (2006a)

discussed in Box 1 there are several ways in which to add a cross-border dimension, ranging from a relatively simple such as making a service available in a language other than the national Member State's language, to more complex ways such as information sharing between public administrations of different Member States, or even a European-level provision of a service in which parts of the public administrations of all Member States participate as "back office" to this service. The term "pan-European eGovernment services" (PEGS) may seem to imply that only the latter example (service provision at the European level) would classify as a PEGS.

However, it would not be useful to understand PEGS in such a limited way. PEGS are important because they add a European dimension to eGovernment services. It is this European dimension and the progress towards it which matter, and which should be captured in the definition and analysis of PEGS (see Box 1). Thus, for the purpose of benchmarking PEGS development the study developed a definition that would give room to emerging properties of PEGS and capture the process towards the development of an optimal (rather than maximal) pan-European dimension of public administration, which is the real phenomenon of relevance, PEGS being important carriers of this. Measurement of the right basic inputs would allow estimating the likelihood and readiness for PEGS development to take place. A more detailed breakdown of the definition was applied in selecting and categorising case studies (see Box 1).

Box 1 Definition of PEGS

Pan-European eGovernment services (PEGS) are digitally provided public-sector services that significantly contribute to creating a pan-European dimension of public administration.

This definition of PEGS based on the notion of development trajectories was used to design a PEGS indicator to be included in the eEurope benchmarking exercise.

The definition was broken down in more detail for selecting and assessing existing cases. For this purpose PEGS are defined as:

a. services provided by or on behalf of public-sector entities in Europe

b. at local, regional, national, international, or supra-national level

c. by means of interoperable trans-European telematic networks (e.g. the Internet)

d. in order to perform public administration tasks, including provision and exchange of information and provision of participation opportunities for citizens

e. that meet a demand of other public entities and particularly demand of other citizens at any geographic level

f. for "material" services as well as for the generation of civic attitudes that address pan-European tasks or improve citizens' identification with the EU

g. with the potential to be extended towards a majority of EU Member States (instead of, for instance, only in countries with the same language, such as the UK and Ireland or Germany and Austria)

h. by either being designed to expand or by containing elements (of, for instance, service integration, interoperability, or eInclusion) that could feed in the design of future eGovernment services at pan-European level.

Source: Weehuizen and Van Oranje (2007), and Glott and Haaland (2007)

2.2 Policy context for PEGS development

The aim of PEGS is to realise an optimal (rather than maximal) pan-European dimension of public administration. Given this aim of optimality and given that resources are limited, policy for PEGS should be strategic and prioritise those PEGS that have an important impact on wider EU (cross-border) policy objectives. Inversely, these policy domains are also most likely to trigger action by policymakers to develop PEGS.

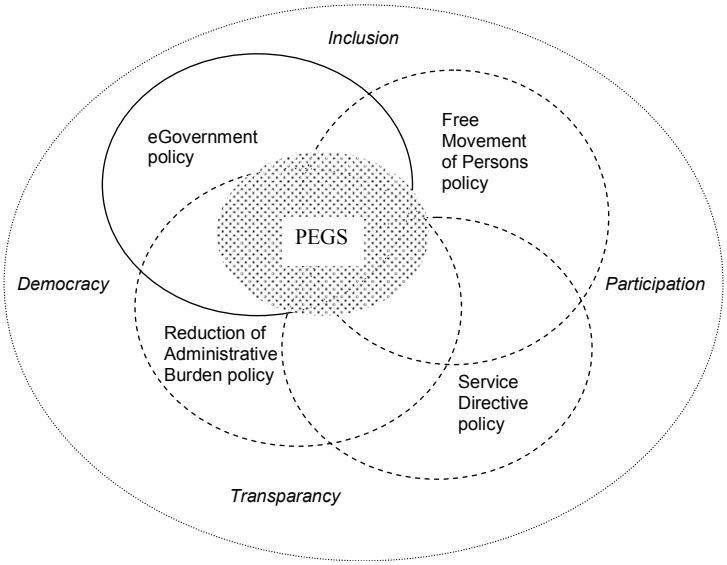

Figure 2 Policy context of PEGS

Source: Weehuizen and van Oranje (2007)

Besides *eGovernment* as a policy domain in itself, the literature review and an internal expert workshop on 26 April 2007 showed that there are three policy areas in which the needs for PEGS development are strongest, as is presented above in Figure 2:

1. Freedom of Movement of Persons
2. The Services Directive
3. Reduction of Administrative Burden.

These related high-profile policy areas will be briefly discussed below, with a focus on the importance of cross-border provision of eGovernment service for each of them. PEGS in these areas are likely to have potential for policy impact and provide sufficient incentives for policymakers to act.

Free movement of persons within the EU is one of the four freedoms (movement of goods, services, persons and capital) that were core aims of the European Communities and now the European Union.[5] Member States are obliged to actively remove barriers towards the flow of these factors of production, and thus to remove barriers towards mobility of persons. Administrative barriers are among the most important ones in this respect.

Notable in the context of freedom of movement of persons is Article 12 of the EC Treaty which prohibits discrimination on the basis of nationality. Broadly defined, the freedom of movement of persons enables citizens of one Member State to travel to others, alone or with their families, to work[6] there (permanently or temporarily), to visit places as tourists or simply to live there – like domestic citizens without discrimination[7]. But despite considerable advances, EU citizens still face problems when they move to another Member State. Common difficulties notably concern the lack of information about the extent of their rights and lengthy administrative procedures in obtaining residence documents.[8]

In addition to the legal obligations to facilitate the mobility of citizens, public administrations are generally increasingly aiming to become more citizen-centric[9]. Public service provision is in practice not tied to the citizen and his activities but to a geographical space. As the activities of citizens increasingly bring him or her outside of his or her national geographical space, the accessibility and quality of public service provison become less adequate. Mobile citizens are in that respect at a disadvantage compared to non-mobile citizens. The costs of living or working in another Member State and of being part of more than one national public administration are substantial for citizens[10]. This is at odds with the principles of equality and universal access – basic principles for a public sector.

Beside these more general obligations and incentives to free movement of people there are concrete obligations for delivering cross-border eGovernment services under the *Services Directive*. Though these are not directly targeted to services for citizens, they are expected to have a profound impact on the way governments organise themselves and provide cross-border services. The objective of the Services Directive is to achieve a genuine Internal

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[5] Treaty of Rome establishing the European Economic Community (EEC) 1957. Article 2 of the EEC Treaty (see European Commission, 2007f): "The Community shall have as its task, by establishing a common market and progressively approximating the economic policies of member states, to promote throughout the community a harmonious development of economic activities, a continuous and balanced expansion, an increase in stability, an accelerated raising of the standard of living and closer relations between the states belonging to it."

[6] Complementing the Treaty: Regulation 1612/68 on the rights of workers (European Commission, 2009c) and the recent Directive 2004/38 on citizenship (European Commission, 2004b).

[7] Article 39 (ex 48) of the EC Treaty that prohibits restrictions on the basis of nationality (European Commission, 2007f).

[8] The Directive 2004/38/EC adopted by the Parliament and Council on 29 April 2004, on a Commission's proposal (COM (2001) 257 in JOC 270 E of 25 09 2001) was meant to overcome these difficulties (European Commission 2004b).

[9] HELP and e@SY Connects are illustrative in this respect. The main reason for the Austrian government to develop the HELP-portal was to bundle services and information provided by different public authorities.

[10] European Commission (2006d) European Year of Workers' Mobility 2006 and also European Commission (2009e) "EURES in cross-border regions".

Market in services by removing legal and administrative barriers to the development of service activities between Member States.[11] The effective electronic organisation and delivery of public services (eGovernment) is expected to have an important role in facilitating the conditions for implementation of the Services Directive.[12]

In implementing the EU Services Directive, the 27 Member States of the European Union are requested to achieve the aim of administrative simplification through provisions governing, amongst others, the electronic processing of transactions by means of a single contact partner by 28 December 2009. A number of articles of the Services Directive are relevant from the perspective of pan-European eGovernment for citizens: Article 46 (procedures by *electronic means* and the establishment of a framework for authorisation schemes); Article 48 ("points of single contact"); Article 50 (making this information accessible through a *website*); Article 51 (.. conditions for access to public registers and *databases*); Article 52 (e*lectronic means* of completing procedures and formalities); Article 92 (refers to the recipients of services, often citizens in their role of consumers).

The identification and *reduction of administrative burden* as one of the major constraints in European economic growth is also expected to push the development of PEGS. An assessment based on an extrapolation of Dutch data suggests that administrative costs may amount to circa 3.5 percent of GDP in the EU.[13] In response to the June 2006 European Council conclusions and within the competitiveness framework of the re-launched Lisbon agenda, in 2007 the Commission is launching a major Action Programme[14], to measure administrative costs and reduce administrative burdens generated by existing legislation in the EU. The Commission paper sets out a possible road map for achieving a cut of 25 percent in administrative burden by 2012, based on a partnership between the EU Institutions and the Member States. The Commission estimates that such a 25 percent administrative cost reduction may yield significant benefits of up to 1.5 percent – or some €150 billion – in the level of GDP.

Among the "common principles for reducing administrative burdens" (p.12), the need for streamlining administrative procedures is mentioned in the Action Plan, in which the ideal of a "one-stop-shop" comes forward: "review whether the same information obligation is not requested several times through different channels and eliminate overlaps" (p.12). Not surprisingly, eGovernment is mentioned explicitly: "require electronic and web-based reporting where paper-based information gathering is presently required, using intelligent portals where possible" (p.12)

The policy trajectory for reducing administrative burden has its emphasis on reducing the burden for businesses, but clearly mentions the importance for reducing the burden for citizens at several places. Research estimates that millions of hours of citizens' time (and

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[11] European Commission (2009d).

[12] The Commission has launched its SOLVIT network, with the aim of making it easier for businesses to make full use of their Internal Market rights (IP/02/1110) (European Commission, 2007g).

[13] Kox (2005): Intra-EU differences in regulation-caused administrative burden for companies. CPB Memorandum 136. CPB, The Hague.

[14] European Commission (2007a).

thus billions of euros in terms of direct costs and opportunity costs) can be saved by eGovernment in general. For example, in 2005 it was found (in IP/05/41) that "online income tax declarations already save 7 million hours. If generally available and widely used in all Member States, the savings could rise to more than 100 million hours for citizens each year. On average, citizens and businesses save over one hour per service transaction". Furthermore, it has been demonstrated (in COM(2006) 173 final, p.3) that "Electronic invoicing in Denmark saves taxpayers €150 million and businesses €50 million a year. If introduced all over the EU, annual savings could add up to over €50 billion." Gains such as these can be expected to be even higher when it concerns mobile citizens (in terms of gain per citizen) because eGovernment takes away the geographical dimension which is for them even more relevant than for citizens within their own Member State. As the number of mobile citizens grows, the gains of developing a cross-border dimension of public-service provision will also grow.

The obligations of Member States resulting from the legal commitment to facilitate the internal market, to enable freedom of movement of persons, to facilitate the implementation of the Services directive and to reduce administrative burden in general and the administrative burden associated with cross-border activity in particular creates strong incentives for policymakers to develop PEGS and to cooperate with other MS in this, in the areas that are of direct relevance for these obligations. It is important to point out that the incentives do not only have the character of obligations but also consist of favorable cost-benefit ratios in these areas, as will be addressed in Chapter 5.

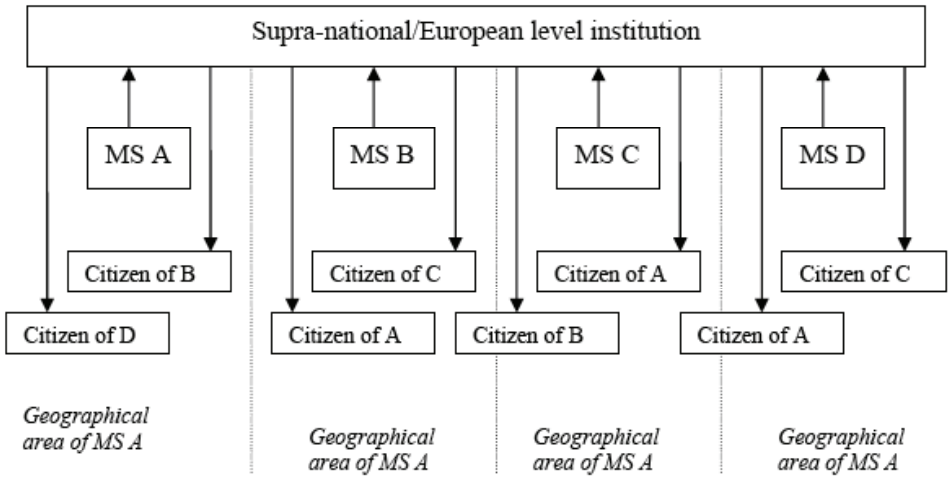
2.3 A typology for PEGS

In assessing all the eGovernment services listed as PEGS in the (former) Good Practice Database of the Commission in the period 2006–2007 it became apparent that PEGS for citizens, following a strict definition (e.g. provided at a pan-European scale) did not exist, though some were in preparation. Moreover, it became clear that a narrow definition was not useful; the real phenomenon of interest was the increasing integration of public-service provision in Europe, and this integration has many different forms and trajectories. In many areas, provision of an eGovernment service at the fully-fledged pan-European level might even be not (yet) desirable. PEGS should serve a specific need and therefore respond to the requirements of users and public authorities, often not requiring full coverage of all EU Member States.

It seems that the most desirable strategy of PEGS development is to accept and encourage diversity of practices and trajectories, instead of central top-down development. This approach gives more room to bottom-up innovation, and experimentation with different ways of developing a cross-border dimension. In monitoring developments one can find out what works best under which conditions. Thus a definition was found to capture this diversity of forms of PEGS development and the different phases of PEGS in terms of their level of "pan-Europeanness".

Type 1 PEGS (Figure 3) develop as top-down pan-European initiatives. They are supra-national (beyond MS level) rather than international (between MS), in the sense that an extra supra-national layer is developed in which services are integrated. They can be:

- centrally managed and implemented by the Commission, or
- facilitated by the Commission by linking existing services in Member States.



Supranational/European PEGS: centralized, provided by an above-national (most often European level) institution; MS interact and cooperate with this institution rather than directly with each other

Figure 3 Type 1 PEGS, 'supra-national'

Source: Weehuizen and van Oranje (2007)

Type 2 PEGS (Figure 4) emerge in a bottom-up manner on the basis of existing eService initiatives at the Member State, the regional or the municipal level. These PEGS are international (between MS) and often do not cover all European countries; rather, they are characterised by cooperation between certain MS in certain areas, the size of which (number of MS, breadth of areas, depth of cooperation) grows over time. These can be developed:

- on the basis of eServices built by some leading actor in one of the Member States who seeks out counterparts to develop a joint or linked-up service, or
- by a consortia of national actors and with support of the European Commission (as in the case of NETC@RDS), or
- in a bottom-up direction as a single national eService opens its doors to citizens at home and abroad.

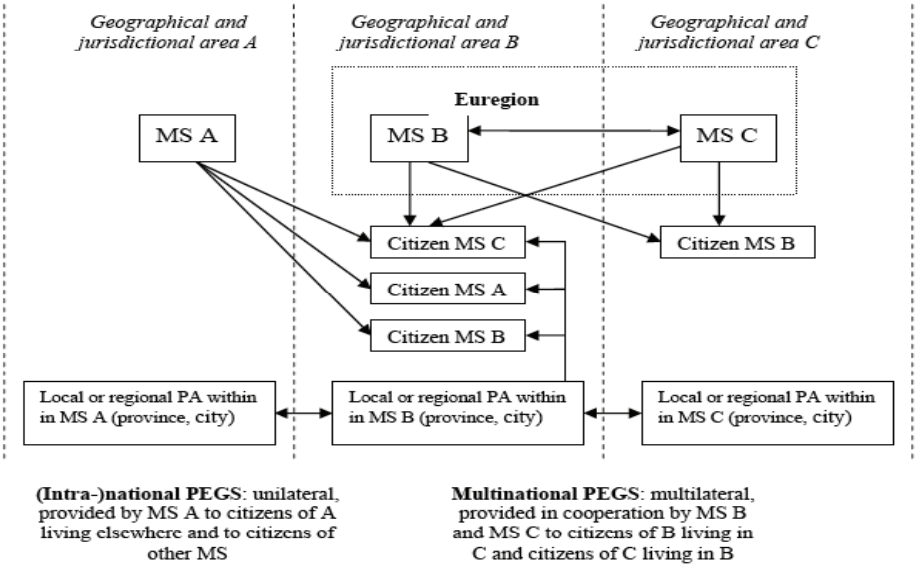


Figure 4 Type 2, Bottom-up PEGS

Source: Weehuizen and van Oranje (2007)

In Type 3 PEGS (Figure 5), the 'pan-Europeanisation' takes place not via top-down or bottom-up coordination, but via the exchange, spread, and take-up of good eGovernment practices throughout Europe. As a result, an increasing degree of convergence of practices takes place across Member States, which will eventually be able to connect more easily and more naturally. In time this effectively translates into a more subtle integration of services on a pan-European scale.

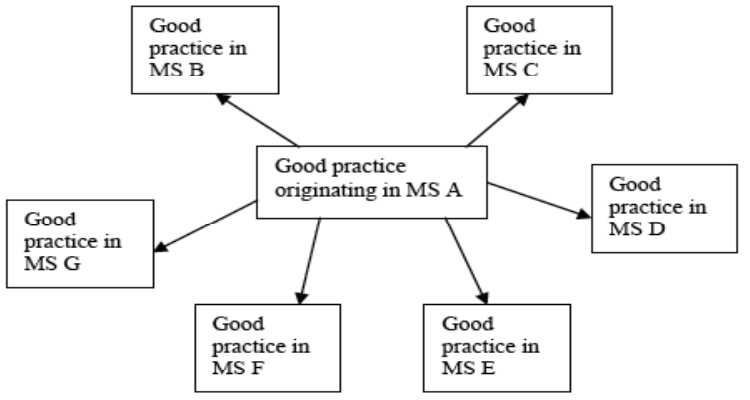


Figure 5 Type 3 PEGS, exchange of good practices

CHAPTER 3 Understanding the stakeholder perspective

This chapter gives a brief overview of the most important stakeholders. The various roles, interests, incentives and contributions of stakeholders were discussed in workshops and study reports. From these we draw some general insights that help to better understand the context of actors in which PEGS develop.

3.1 Most likely actors interested in PEGS

The project used expert consultations to identify likely "PEGS champions" – actors/entities that would have a direct interest in PEGS and obvious incentives to develop them. Such interests might include; e.g. demographics of constituencies, regional positioning, legal obligations or mandate. On this basis the following actors can be considered the most likely champions in the process of "Europeanisation" (or European permeation) of eGovernment service provision:

1. big cities with a mobile and international population
2. small countries with an open international economy
3. Euregions with a lot of cross-border activity
4. public-sector organisations in Member States aimed at certain professional groups (e.g. knowledge workers)
5. the European Commission itself

In this chapter we will discuss stakeholders in general terms, from the perspective of EU-level policymaking. Thus we discuss the Commission as central actor, the Member States' governments as the main actors in the development of eGovernment policy within their national boundaries (Central, Municipal, Public Agencies), civil society, the citizen and business/industry.

The following table briefly discusses the key drivers and barriers identified in the literature review and validated by workshop participants.

Table 1 Drivers and Barriers to PEGS among different stakeholders

Commission	MS governments	Civil Society	Citizen	Industry/Business
Drivers				
▪ Interoperability ▪ Macro (GDP, Jobs) ▪ Public service ▪ Market efficiency ▪ Private market spill-over ▪ Competing in world markets ▪ EU governance ▪ (e)Inclusion agenda	▪ Resource savings ▪ Risk, burden-shifting ▪ Efficiency, flexibility ▪ Interoperability ▪ Policy coordination ▪ Political halo effect ▪ Transformation	▪ Potential for better EU-wide coordination ▪ Better support for (mobile) citizens ▪ Easier interaction with governments across EU PPPs)	▪ Value for money ▪ Service quality control ▪ Feedback channel ▪ Contact coherence ▪ One-stop-shop ▪ Accountability	▪ Profit ▪ 'Free' IPR ▪ Installed base ▪ Risk reduction ▪ Partnership ▪ Better regulation ▪ Administrative. burden reduction
Barriers				
▪ Threat to subsidiarity ▪ Mission creep ▪ Privacy, etc. ▪ Distortion of competition ▪ Regulatory flight ▪ Reinforcement of entrenched administrative norms ▪ Lack of/low demand	▪ Dept. stovepipes ▪ Information asymmetries ▪ Risk/uncertainty ▪ Legal impediments ▪ "Not invented here" ▪ Inability to capture, measure savings ▪ Failure to reorganise appropriately	▪ Civil liberty concerns ▪ Resistance to increase in EU influence	▪ Cynicism about failures and motives: - Gold-plating - Cost savings over quality gains ▪ Loss of personal touch/trust ▪ Back-door corporatisation ▪ Remoteness ▪ Digital divide and the risk of exclusion	▪ IP Risk ▪ PPP risk transfer ▪ Time to market ▪ Liability ▪ Poor procurement ▪ Trust and security ▪ Market distortion

Source: RAND Europe EUReGOV 2007

3.2 EU/Commission

As to the role of the Commission in the area of PEGS, the i2010 Action Plan states: "*While most of the challenges are at national or sub-national level, the European Commission adds value in providing support to all five objectives of this Action plan with two types of activities: measurement and sharing [of experience and good practice]" … "Providing relevant information, quantifying, benchmarking, measuring and comparing impact and benefit is essential*" (p.6).

The eGovernment Action Plan and ministerial declarations of Como (2003), Manchester (2005) and Lisbon (2007) provide the policy basis legitimising and guiding the actions of the European Commission in the area of stimulating the pan-European dimension of eGovernment. The principle of subsidiarity is central in the area of policy for the public sector; the Member States are the key actors in this. However the Commission is expected

to play a facilitating role in the development of PEGS. Providing information about the state of play with the help of indicators, measurement frameworks and benchmarking is an important element of this facilitating role.

Inside the Commission progress has been made in coordinating policy initiatives between DGs, though in practice Directorates General have different views on PEGS resulting in suboptimal cross DG synergies. DG INFSO has the overall coordinating role and funds to spend directly on the development of PEGS pilots under the CIP ICT PSP programme and its predecessor eTEN. DG Digit provides some of the underlying infrastructure through its management of the sTESTA network. It also procures studies, and develops and manages true PEGS in the customs domain. Sectoral DGs are involved through specific concrete projects, like DG JLS with the ePassport, SISII, VIS, Eurodac, eJustice; DG Employ with the eEHIC; DG TREN with the European driving licence, etc. However, on the whole PEGS are not yet seen as domain-specific policy tools or objectives, leaving it up to DG INFSO to drive the agenda.

The Commission (together with the Member States) is active in all the steps of PEGS development; from the support to MS building their national infrastructures, through benchlearning and good practice exchange, to establishing the political context, and providing the underlying network, financing, interoperability frame work, harmonisation and/or removal of legal constraints and other impediments, as well as the conduct of research. A detailed list with possible policy initiatives and "interventions" by the Commission is given in Chapter 6.

3.3 Member States Governments

The Member States are the main actors in developing PEGS, since public services are their primary domain. Thus, it is through the eGovernment strategy of Member States that important elements of PEGS have to be put into place, such as interoperability and agreements with public administrations of other Member States about sharing information and about giving access to citizens from other Member States to public services.

The Member States have confirmed the importance, in principle, of developing PEGS in the 2003 and 2005 Ministerial Declarations, though in practice it does not always seem to be a high priority. Member States generally focus on developing eGovernment at the local/regional and national level. In a report written for the preparation for the update of the European Interoperability Framework 2.0, it was investigated how Member States feel about PEGS development[15]: "Member States are internally focused and have a low priority for pan-European e Government Services (PEGS). At the same time several demonstrate advanced thinking and operations." And further: "… there is currently no explicit sense of urgency to deliver PEGS", as the focus is on delivering eGovernment services locally (p.14). The sentiment expressed in the Gartner report was reflected in the four workshops conducted under this study.

The role of the MS is crucial for the development of PEGS. For PEGS to be developed, MS should see their added value (in certain areas, with a certain scale and scope) and

[15] Preparation for Update European Interoperability Framework 2.0 – Final Report, Gartner 14-02-2007

determine which would make sense, and which are important for optimal resource allocation. In practice MS-based Public Authories (PAs) with a specific sector of interest take the initiative (e.g. Kadaster – land registry in the Netherlands, Italian Ministry of Justice, Austrian Chancellery's office), if their remit allows them to develop external relationships[16]. However, these initiatives often lack sustained financing as no national budget will continue to carry the cost.

As stated above, the involvement of MS is not self-evident. The payback is not always clear and sustainability of programmes and services remains a problem. The advantages of PEGS to MS and their citizens may only become clear once a critical mass of mutual multilateral cross-border service provision is developed. PEGS have the character of a network and the positive network effects generally occur not immediately and linearly, but rather are upward sloping and above a certain threshold if this is reached. Thus it is important to actively communicate the importance of PEGS and the dynamics of their development, and to make clear what their added value will be in order to get PEGS development at a higher, more appropriate place on the MS eGovernment agendas. Chapter 6 on PEGS measurement will deal with this issue of secondary (internal market, network effects) effects.

3.4 Civil Society

Although PEGS are public services, the development and provision of PEGS is not necessarily exclusively a public sector affair. On the contrary, the public sector makes increasing use of other parties in society (businesses, civil society organisations) to realise public goals. The reason being that it can be more (cost-) effective, allowing higher quality of public-service provision with a better return on spending public resources, and also that the possibilities for involving other parties in meaningful ways without too many transactions costs have increased, especially in fields of the public sector where information and communication technologies play a central role. There is a development towards a more "networked government", in which all kinds of non-public-sector parties play all kinds of roles in the process of creating public value in many ways. The recent report of Millard[17] gives an insightful account on what a networked government looks like and could look like in the area of eGovernment.

"The functions of government are increasingly taking place across different agencies and in collaboration with the private and civil sectors. In order to fulfil its mandate and roles, the public sector now often partners with, and sometimes outsources to, other stakeholders in the private and civil sectors, including at community level. Such cross sectoral collaboration clearly also has significant implications for the roles and activities which government retains, how these are organised and how the public sector is structured as a result, including in the back office." (Millard *et al.,* 2006)

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[16] Spanish Kadaster commented that they were not in a position to develop commercial ventures.

[17] Millard *et al.* (2006).

This is an issue which addresses the future mandate and competence of the public sector in a fundamental way.[10] In the area development of PEGS, the current and potential future role of non-public parties needs to be investigated in order to make best use of the new possibilities for partnership that technology offers. In some ways involving non-public partners will make PEGS development easier, but in other ways it can make it even more complex because it increases the challenge of dealing with issues of authority, competences and (democratic) control which already are complex and challenging in the case of PEGS development.

Networking with private and civil sector stakeholders, for example through outsourcing, can provide clear benefits of cost reduction, quality enhancement and better tailored services. But the challenge is that the public sector must at the same time avoid the simultaneous loss of knowledge and control over basic processes and over the competencies, decisions and policies needed to support these and which lie at the basis of all public services. Millard observes that: "We need to better understand which aspects of the public sector's activities can and/or should be codified and commoditised (for example through ICT) and outsourced or 'networked' with other stakeholders, and which should be retained in-house under public (democratic) control."

Small-scale trials in a non-governmental setting may actually allow for social innovation where governments are too constrained. Risk-taking and experimentation is not typically in the DNA of government organisations, especially where this involves linked-up government cutting across departments and organisations and involving non-public entities. Also the usual ex-post control mechanisms limit public authorities' ability and appetite to experiment. The MySociety case study (see Appendix B) looked into the role of non-governmental entities in innovating public-service delivery. They seem to complement government, in being more in tune with their constituencies, risk-taking and agile. However, they may be even less inclined to cross-borders than national governments, depending on their specific purpose[18]. (see Text box 2) addresses the key findings on the case study.

Box 2 Lessons from a civil society case (MySociety)

1. Neither governments nor citizens are the most likely source of ideas for successful eServices.
2. Small, agile organisations can harness the expertise and intuition of its designers and implementers without undue constraint and interference.
3. Governments may not be well suited to developing eServices that leverage their own existing services due to legacy issues, and aversity to change).
4. Importance of finding a "sweet spot" for an eService that balances its simplicity of use against the functional capabilities that it offers.

[18] This finding needs to be treated with caution as it can be expected that civil society engagement will also follow or emerge from global (i.e. cross-border) communities.

5. eServices should be responsive to user feedback, as well as to the evolving needs and capabilities of relevant government agencies.
6. PEGS are unlikely to grow spontaneously out of geopolitically localised eServices and may require the concerted efforts of interest groups that have the vision to see the potential for turning existing non-PEGS into PEGS.

Source: Rothenberg, Rubin; MySpace case study (2008).

Given the societal trends of more empowerment of citizens, active participation and self organisation[19], it may be expected that the role of civil society in public-service delivery will grow and that eventually PEGS may also be offered by non-governmental actors, possibly in partnership with public agencies.

3.5 The Citizen

PEGS for citizens are likely to be directed to the most mobile section of the population. But even these are obviously a very heterogeneous group of voters, workers, patients, consumers, activists, family members, etc. and thus are difficult to capture in any sufficiently comprehensive ways. Some suggestions are given on the nature of their drivers, nature and motivations.

Citizen awareness of new ICT application and possibilities is high, demonstrated by the staggering rate at which new ICT artefacts penetrate markets. The citizen viewpoint is very clearly one of experience and can be expected to embrace PEGS when made available to them in a user-friendly form. It is safe to say that the citizen as user of many existing (commercial) cross-border services is likely to be ahead of most public suppliers of services in know-how and experience.

This implies that uptake is probably not going to be the major issue, once the services are available. The primary issue is the likely size and nature of the demand for PEGS. On the whole the PEGS constituency of mobile EU citizens is relatively undefined, and does not represent a clear and relevant political force that could create a positive momentum for PEGS development. There are pensioners seeking to buy real estate and receive healthcare services; workers commuting over national borders, or moving to another MS and seeking work permits, local registration and portability of pension and worker rights; students looking for housing and benefits, or acknowledgement of diplomas – to give just a few examples.

However, overall current mobility rates of workers in the EU remain relatively low[20], despite the implementation of policies to encourage mobility in Europe – from the right to free movement of EU citizens within the region, to the establishment of the EURES portal and cross-border partnerships. Eurostat reported that approximately 1.5 percent of EU-25 citizens live and work in a different Member State from their country of origin – a proportion that has hardly changed for the last thirty years. In terms of cross-border

[19] Botterman, Van Oranje, Millard, Horlings (2008) eGovernment Vision.

[20] Data cited in: van Houtum and van der Velde (2004).

commuting Belgium has the highest rate, with 1.7 percent of its working residents working in neighbouring countries. For example, in 1999 on average only 0.2 percent of the EU-15 working population commuted between Member States.[21]

The demand for cross-border eGovernment services for citizens thus remains small and fragmented, while at the same time this diverse group experiences cumulative negative administrative burdens. As the European job mobility portal EURES states: "The more than 600 000 people who live in one EU country and work in another have to cope with different national practices and legal systems. They may come across administrative, legal or fiscal obstacles to mobility on a daily basis"[22]. To the receiving countries these mobile citizens also create considerable extra burdens as they are notoriously difficult to fully integrate in national systems, as compatible eIDM and authentication systems are missing.

Looking ahead, the mobility trends are not likely to change very rapidly, but it can be noted that the tendency is towards more cross-border activity. In relation to commuting in particular, cross-border commuting between Member States has been steadily increasing over recent years and perceptions among citizens towards mobility are very positive, as is demonstrated by a Eurobarometer survey in 2006[23](see Text box 3). In addition, with the EU enlargement between 2004 and 2007, it is likely that new commuting routes will emerge and expand, once the restrictions on the free movement of workers from new member states are waived.

Box 3 Eurobarometer review of citizens' perceptions towards mobility (2006)

a) Despite being attached to their region of origin, a third of EU citizens have moved from their home region and are happy to have done so.

b) EU citizens strongly believe in the right to free movement.

c) EU citizens know that geographical mobility can improve their job prospects.

d) Europeans value employment stability but, in some Member States, job mobility has proven positive and has become well-accepted.

e) Mobility should not put workers' sense of security at risk.

Source: European Commission (2006c).

Both stability and mobility are important: stability helps workers build on their experience and changing jobs improves their adaptability.

[21] Eurostat, 2007 and European Commission, Mobility and Migration Update, 2001/0082, Employment and Social Affairs DG, Unit A1.

[22] European Commission (2009e).

[23] *Europeans and mobility: first results of an EU-wide survey,* Eurobarometer survey on geographic and labour market mobility (European Commission 2006c).

The practise of cross-border commuting constitutes an alternative to mobility, and for that reason, may attract individuals that would not have considered the opportunity to work outside the labour market of their home country. Improvements in infrastructure and transport links as well as technology advancements have made it possible for workers to explore employment possibilities abroad while remaining residents of their country. As a potential substitute for geographic mobility, commuting can be perceived as its functional equivalent.[24] Development of geographic mobility within and between Member States is perceived as a factor in increasing adaptability of individuals to particular labour market conditions and improving the EU's competitiveness in the global market economy.[25]

The individual decision to work in a member state other than the one of residence is usually assessed on a cost-benefit ratio that depends on a number of factors which influence aggregate European geographical commuting and mobility. Workers will expect a net welfare improvement from their decision to commute or move altogether. The main pro-mobility factor is typically employment-related and refers to the labour market opportunities in the country of destination. However, the socio-cultural context (language barriers, social costs of leaving family, friends and local community, and so forth) also plays an important role in influencing one's decision to take up employment abroad. Workers also consider factors relating to the taxation system, affordable housing market, and access to the social benefits and public facilities.[26] All these factors may be grouped in the three main clusters determining decisions to commute between living and working places:

1. *Labour market factors* – employment opportunities, wage and income differentials
2. *Wider structural factors* – taxation, cost of living, welfare system
3. *Socio-cultural factors* – language barriers, family and community ties

Ilzkovitz [27]point out that, next to these factors an important discouraging factor for individuals is the expected transaction costs and/or the lack or insufficient information about administrative and financial burdens associated with mobility. A major difficulty is the lack of convergence between national regulations. The EU has 25 different social security, taxation and pension systems. Every Member State determines how to operate its own social security system, the benefits and conditions.

As was described in Diederen and Glott (2008) and Weehuizen and Van Oranje (2007), eGovernment has unique features that can reduce the transaction costs related to cross-border and pan-European activity without requiring drastic regulatory convergence between Member States (which is costly in itself to achieve and would take many years). Through applying concepts such as portals, through opening up, connecting and streamlining information, through taking away the element of distance, much can be achieved to reduce the transaction costs that now are a real barrier to further realising the Internal Market and other core European projects.

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[24] Vandenbrande (2006).

[25] Ibid.

[26] Vandenbrande (2006).

[27] Ilzkovitz *et al.* (2007).

3.6 Industry/Business

In various workshops the contribution from industry was actively sought, in order to better gauge the role of industry in supporting PEGS for citizens. A more in-depth study would have been welcome as there still remains a considerable gap between the willingness to collaborate in PPPs and making it work in practice. Here we present some snippets of findings to illustrate the relevance of intensifying the dialogue and involvement of the business sector.

The workshops and high level assessments demonstrated an active involvement of the private sector in the many aspects of PEGS, in a role as "(co-)producers" of PEGS. However this was not reflected in a political visibility of the private sector in the debates around PEGS. Where one would have expected an active drive from businesses as "consumers" of PEGS to push for less burdensome cross-border solutions, this voice has not been articulated so far in the context of PEGS.

Private-sector organisations that work across borders (e.g. multinational companies, and also international NGOs) have often developed innovative solutions for their own cross-border governance issues. It would be useful to explore parallels between PEGS and private cross-border, pan-European or global solutions/services/infrastructure, in order to learn from the private sector in this respect and to determine in which ways the private sector could play a role in PEGS development beyond merely being an inspiration for innovative effective solutions.

The SEPA case study in Chapter 3 – which was discussed in the Securegov Working Conference 2007 – demonstrated that public and private services were supported by very similar underlying infrastructures, protocols, standards and technologies, and faced many of the same issues. Also the project-management and governance of such multinational and multi-disciplinary projects demonstrated significant similarities. It also became apparent that there was a willingness to exchange views and cooperate, but such relationships had not developed.

In other cases where public smart ID cards were offered to the private sector as a platform for their services, this proved to be difficult (e.g. Belgium). Part of the problem seemed to be the branding value that the cards represent. More in general the industry does show an interest in PEGS development and exploitation, but it has not yet found its true public service value proposition.

Though it is outside the scope of this study (EUReGOV) to look at the exact role of the private sector in PEGS (and eGovernment in general) and the effectiveness, barriers and drivers of PPPs, it became apparent that only in a few cases in Europe did public-sector solutions manage to draw in the business sector: e.g. Finland and Sweden. Of particular interest is the SEPA case (Appendix B), in which the financial services industry is collaborating to develop a pan-European eService (payment system). Many parallels with PEGS can be drawn and there is a willingness to share experiences.

It could be expected that the existence of PEGS based on a European eIDM framework would yield important benefits for businesses, as they could use such an overarching platform to develop their own services. However, the Securegov study identified a substantial hesitation from the business community to proceed. The general attitude was

characterised as "wait and see". For business to invest in any public eIDM system there clearly needs to be sufficient critical mass of users/consumers. To get the private sector on board earlier in the process the PAs involved would need to work with existing standards, draw in the business community to understand their needs, and to involve it in the development of the system. In particular, care should be taken not to re-invent the wheel and use or reference existing common standards.

So far the private sector has not been any more successful in sharing its initiatives and platforms for public services. **Error! Reference source not found.** illustrates a number of private and joint initiatives that have been taken, which are closely aligned to and are relevant for PEGS; none of these have so far been fully taken up in the public domain[28].

Table 2 Example of private-sector involvement in development of smart cards

Name	Theme	Objective	Function	Applications	Remit	Notes
SWIFT	Financial transactions	Secure exchange of banking messages	Identification and authent-ication (at the terminal / end user premises)	Financial applications	Trusted financial institutions	Offering from major financial message exchange system
EMVCo	Financial transactions	Secure financial transactions	Identification Authent-ication (in conjunction with separate PIN)	Credit / debit	Customers of banking institutions (but card issuers and card systems are also critical parts of the security environment)	Driven by industry owned group
ICAO ePassport	Travel documents (passports, visas and govt-issued travel documents)	Protection against counterfeit and fraudulent identification papers	Identification	Travel documents (passports, visas and permits to travel)	Those holding travel documents (papers, etc.)	International standard developed as a response to security concerns
Global Platform Standard for Smart Card	Smart Card standard / specification	Standardised platform (card and infra-structure) for smart card usage across different environments (organisations, national schemes)	Identification, authentic-cation and digital signature	Access control, ID and eID; travel document-tation	Members of those organisations using the specification	Vendor-driven group; members are implementing eIDM systems according to this specification in a number of areas (in national systems and in organisational schemes)
European	National /	Regionally	Identification	Public and	Citizens of	Pilot /

[28] Except in some sense ICAO, which is compliant with ISO 14443, in the biometric passports.

Citizen Card	regional eID card	acceptable form of citizen ID	and Authenti-cation	private sector uses	countries participating / using the specification	demonstrated implementation of European standard
Two factor authenti-cation	Techno-logical	Increase security in banking; finance and healthcare to meet privacy / assurance requirements	Identification and Authenti-cation	Banking; healthcare (anywhere where there is a remit to protect personally sensitive data)	Customers and users of various systems (e.g. banking or patients or users of health insurance)	Market driven / regulatory imposed implement-tation of technology within discrete constituencies / communities
Source: RAND Europe Securegov Briefing paper 2007						

Beside involvement in PPPs for development of systems, industry is engaged in and affected by PEGS in many ways. Some examples are:

1. suppliers of technology (hardware, software, peripherals) to governments and the European Commission
2. suppliers of services to governments and European Commission (ICT, financial, etc)
3. partners in PPPs implied in the development and delivery of the service (healthcare insurers, logistics and transport companies, etc.)
4. legal entities, subject to administrative burdens and compliance requirements due to cross-border commercial activity (transacting cross border, establishing companies in other jurisdictions, gathering information in other countries, etc.)
5. Providers of (similar) cross-border/pan-European services and/or the underlying infrastructures (IT companies, smart cards, online payments facilities, etc.)
6. Holders of IPR and users of standards.

It fell outside the scope of this study to assess any of these roles in greater detail to dissect how industry could be mobilised for PEGS and what the potential for partnership would be. However, one interesting potential function of the private sector – which emerged from the HELP case study – should be mentioned here, which is the potential role of IT service providers in disseminating good practices (see Appendix B and Chapter 4).

The development of eGovernment portals, services and solutions often involves private-sector operators. They provide the conceptual frame, develop, test and maintain the software, etc. Often these operators are the most knowledgeable about the system, its functioning, potential for extensions and its weaknesses. They also have a strong incentive to sell the solutions to other public agencies, and generally have the marketing skills and budgets to do so, which can be a huge driver for the exchange of good practices.

However this is often not allowed. Mostly the public agency that procured the service retains the rights to the software and the service, and does not allow the application to be

sold elsewhere. Moreover, public agencies generally neither have the incentives, the budgets, nor the skills to effectively export their solutions. Thus an important potential for exchange of good practice is lost[29].

In summary: there are a number of stakeholders who are involved in a variety of ways. When developing policy to stimulate PEGS development, there should be active consideration of these stakeholders (their interests, potential and limitations) and how to involve them optimally in the PEGS development process.

[29] Presentation of HELP case at the EUReGOV Workshop November 2007

CHAPTER 4 Case studies: Learning from daily practice

This chapter presents the outcomes of PEGS case studies and identifies common features, barriers and drivers of PEGS. This empirical section is structured along the lines of the typology presented in Chapter 2. To allow an effective review of current activity an open definition of PEGS was developed and applied, to capture the permeating effect of eGovernment activity on the "Europeanisation" of the digital public space in Europe. The full definition is given in Chapter 2. By applying the definition and typology a selection of cases was made, which was ranked by applying criteria for expected impact, and relevance to delivering value to users and support to wider EU policy objectives. All cases add to our specific understanding of the current situation of PEGS development and provide lessons for future work in this area.

4.1 Brief description of case studies

After a large-scale screening of the entire Good Practice Database of the Commission, six eGovernment services were selected to study in more detail. The cases were selected to represent different PEGS types, as described in the typology of Chapter 2. The selection of specific cases followed a ranking of a long list to assess their potential for achieving tangible impacts for mobile citizens and wider policy agendas of the EU. These six were complemented by reference cases (not typically geared to the citizen) to provide a more comprehensive overview of the evolving PEGS landscape. In addition three comparative case studies were conducted outside government (civil society and business) and outside the EU (Canada).

Type 1 Supranational PEGS: Centrally provided PEGS, i.e. supranational eGovernment service for citizens:

1. SOLVIT
    i. complemented by the custom services provided by DG TAXUD (G2G)

Type 2 Bottom-up PEGS: PEGS developed on the basis of existing eService initiatives:

2. NETC@RDS
    i. EULIS
    ii. eJustice;

Type 3 PEGS: Good practice exchange – national eGovernment services with PEGS potential

3. HELP
4. e@SY Connects
5. Belgian Social Security
6. Media@Komm Transfer

Comparative cases:

1. Civil society (MySociety)
2. Business (SEPA)
3. Non-EU (cross-province eHealth in Canada)

The cases are described in more detail in Appendix B. In this chapter we provide an overview of the case studies and the relevant common features, drivers, barriers and lessons learned.

4.1.1 Centrally provided PEGS

SOLVIT; helping the EU citizens to realise their rights

SOLVIT[30] is the only real supranational PEGS for citizens, and provides a good example of how eGovernment services can facilitate administrative processes through informal coordination and communication. It is an online problem-solving network, established and coordinated by the European Commission – which also provides the database facilities – and operated by the Member States. Member States work together to solve problems caused by the misapplication of Internal Market law by public authorities, without legal proceedings. Everyone (citizens, businesses) who has a complaint about a public authority can file this issue in his or her mother tongue. Using SOLVIT is free of charge.

TAXUD/NCTS; a federated solution with central management

The NCTS pan-European system for the movement of containers is an example of a secure end-to-end customs procedure; as such it is not directed at citizens but it does hold relevant lessons for the development pg G2C PEGS. Some characteristics of DG TAXUD systems are that they interconnect distributed national databases and must interact with a multiplicity of trader systems being used by the private sector. These systems are based on a confirmed operational model built on subsidiarity, collaboration and interoperability. The Commission takes a role in the management of the trans-European network. Wider policy evolution has been made possible by advancement in pan-European systems, e.g. the linking up of VAT systems in each Member State is an essential enabler of the internal market.

[30] See European Commission (2009f). .

sTESTA

Secured Trans-European Services for Telematics between Administrations (sTESTA) is a dedicated private Multi Protocol Label Switching (MPLS)-based network, with dedicated Internet Protocol (IP) addressing, not connected to the Internet for national and EU government departments. It is not a PEGS in itself but it is the backbone of a growing number of centrally organised and bottom-up PEGS. Therefore it is worth exploring in more detail. The sTESTA network is proving a useful resource for PEGS, however a dedicated network is not required for all services. Most PEGS and some currently running on sTESTA could be delivered over a public network (e.g. the Internet). For a few applications (e.g. SIS II) this is not politically acceptable and there is no availability guarantee or service level agreement (SLA).

4.1.2 Bottom-up PEGS

NETC@RDS; cross-border healthcare for the mobile European citizen

NETC@RDS[31] is an example of bottom-up PEGS with supra national potential. It is run by an independent consortium of healthcare providers, public authorities and health insurers that receives support from the Commission through the eTEN programme. NETC@RDS is an eHealth service providing mobile European citizens with easy access to health services. It is currently still in a testing phase and only accessible in pilot regions in 15 Member States. NETC@RDS is part of the European Health Insurance Card (EHIC), which is a proof of entitlement for European citizens to receive necessary (non-planned) medical care inside the EU/EFTA.[32] The EHIC has replaced the previously used E111 (paper) form. NETC@RDS will advance EHIC from an eye-readable to an electronic device (eEHIC).[33] It will use a Europe-wide IT-infrastructure to provide easy information exchange related to health services and ensure fully electronic cross-border billing of health services. For the future, the consortium envisages the development of a common electronic database for improved health insurance billing and clearing applications.

EULIS; how European land registries build a common market

In support of the bottom-up NETC@RDS case study, EULIS presents a G2B application, which could become G2C. It is less complex involving fewer partners and a more homogenous stakeholder group, making it easier to identify specific cross-border issues. EULIS' objectives are to provide worldwide access to the European land and property information to promote and underpin a single European property market. Currently EULIS contains information on about 40 million properties, out of approximately 100 million in Europe, all provided through a single portal. EULIS is a bottom-up initiative of various land registry agencies that got together as they observed a European market emerging. The main driver of the development of EULIS is the market demand for cross-

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[31] See http://www.netcards-project.com. NETC@RDS is in line of the overall eHealth strategy of the European Commission, which focuses on better use of ICT for improved provision of interoperable high-quality health services to (mobile) European citizens. See European Commission (2004, 2006a, 2007a, 2007b) and European Council (2006).

[32] Each Member State is responsible for producing and distributing the EHIC on its territory. It can be either a specific card or on the rear side of the national card. At current, more than 150 million EHICs are circulating in Europe.

[33] See Nader, N. (2007).

border services by potential buyers and sellers of real estate and mortgage providers. The process has been greatly supported through a Commission Green Paper on the European mortgage market, which increased the policy awareness of the importance of European-scale accessibility of information. Moreover, initial national initiatives (UK) to deliver services across borders helped to pave the way, for a cooperation that could build on a longer-term relationship between land registries.

eJustice; the vision of a European justice portal

The eJustice portal complements the two bottom-up cases above. It is a G2G/G2B application developed by government departments in a few leading MS (Justice Ministries), using the EU institutional mechanisms (council working groups) for coordination and leverage. It thus has interesting lessons for the initiation of inter-governmental initiatives and the role of the Commission in governance, financing and operational involvement. In addition, the service foresees to provide access to private initiatives and could contain useful lessons for such public-private role.

The eJustice portal has been developed to provide an interoperable infrastructure for internal and external users, enabling a number of different applications, including access to registers, data-retrieval and legal notifications. Its role is important in countries such as Italy, where it can be used to dismiss an entire case if a notification is not correct. Finally, the portal is also used to obtain evidence, for example with video conferencing.

4.1.3 National eGovernment services with PEGS potential

HELP; a leading citizen-centric application

HELP[34] is an example of an eService that has the potential to develop into a multinational type of PEGS. The service is an Internet platform (or portal) that was initiated in 1996/97 by the Austrian federal government and administered by the Chancellor's Office. It delivers services to everyone who has to deal with Austrian authorities and institutions. It provides a best-practice model of a one-stop-shop and is thus a good example of how eGovernment services meet the requirements demanded by article 8 of the Services directive. HELP is organised along almost 200 "life events". The essential goal of this structure is to make it easy for the user to find, understand and relate to the content provided. Its operations rely on interplay of the Chancellor's Office, the government departments, Net Value (consultancy) and the Austrian Computing Centre.[35] The Chancellor's Office is the leading organisation, responsible for editing raw information on life events that is delivered by ministries, municipalities and other involved parties before it is fed in the HELP portal. The architecture and technology of HELP is offered to organisations in other European countries and, according to those who are responsible for the project, it has thus become one of the leading eGovernment applications in Europe, meanwhile also implemented in three regions in Germany (Baden-Wurttemberg, Saarland and Saxony).

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[34] See www.help.gv.at.

[35] The Computing Centre is a shared service centre that is working for the ministries of internal affairs, finance, justice and the Chancellor's Office, as well as other public bodies. This institution, in which the Austrian government holds a 100 percent share, is the leading IT-service provider of the Austrian public administration. See http://www.brz.gv.at.

Belgian Social Security; an inclusive national solution

An example of how a network of databases can reduce administrative burdens for public authorities, businesses and citizens is provided by Belgian Social Security.[36] This project has been initiated and is operated by the Crossroads Bank for Social Security and the National Office for Social Security. Its aim was to improve collaboration and digital data exchange between more than 2000 social security organisations in Belgium. For citizens, companies and professionals in the social security sector, Belgian Social Security works mainly as an information provider. The Belgian eGovernment strategy initially focused on integrating the back office as the ultimate priority. With the back office essential, other building blocks must be considered before focusing on the applications/services: network; gateway; portal; secure tool (citizen card). The system has been offered to other countries, but so far no take-up has taken place.

e@SY Connects; multi-channel inclusive local eGovernment

e@SY Connects (e@SY = Electronic services for South Yorkshire)[37] is an example of an advanced regional eGovernment service that shows potential to develop into a multinational PEGS. It is a project of the local governments of Barnsley, Doncaster, Rotherham and Sheffield in South Yorkshire, UK. e@SY Connects provides citizens with easy access to citizen information and services. eInclusion is one of the major policy goals in Europe and e@SYConnects provides one of the most advanced and successful examples of how eGovernment services can meet this challenge.[38] Mobile phones and digital television are the main devices to provide access to information to those with no or insufficient computer experience. e@SY Connects has become a vital information channel for many thousands of people in Yorkshire.

Media@Komm Transfer; leveraging good practices

Media@Komm Transfer[39] is an initiative of the German Federal Ministry of Economics and Labour and is a final example of a (potential) multinational PEGS. It builds upon the Media@Komm initiative (1999–2003) that developed more than 300 advanced eGovernment solutions for German municipalities. Media@Komm Transfer is based on 20 local authorities ("transfer municipalities") from across Germany that have founded an eGovernment network. It aims to develop transferable best-practice concepts while taking into account established eGovernment standards and proven procedures, including the expansion of international contacts and cooperation to promote the digital integration of Europe. With regard to serving citizens' needs, it probably cannot compare to the other eGovernment services that are discussed here. However, since it intends to harmonise the development of local eGovernment and promote the transfer of best practices and know-how, it provides a very instructive showcase of how procedures, technologies, and services that are developed in one public authority can be implemented in other public authorities,

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[36] See https://www.socialsecurity.be.

[37] See http://www.easyconnects.org.uk.

[38] See also Ministerial Declaration on eInclusion (European Commission, 2006e), which emphasises the opportunities provided by ICT in order to achieve improvements with regard to the i2010 goal of eInclusion.

[39] Accessible through http://www.innovatorsclub.de.

regions and countries. The project resulted in a set of guidelines for best practice transfer based on the practical experiences gained in German model cases.

4.1.4 Comparative cases: Non-EU and non-government cross-border services

To explore how far other actors would enter and mobilise the PEGS domain an in-depth case study was conducted of public eServices by a civil society organisation, MySociety. To look at learning from the private sector's approach to establishing pan-European eServices we explored the development and approach to establishing a Single Euro Payment Area (SEPA). Finally, to also review solutions found outside the EU, the Canadian eHealthcare service was reviewed. This case was chosen because of the cross-province and bilingual nature of the Canadian situation, mimicking to some extent the EU situation.

mySociety; an innovative civil society actor in the public sphere

mySociety develops eServices. These are intended to augment citizens' access to government, and fill some of the gaps between citizen needs and government services. In so doing, they often highlight these gaps in ways that may also be useful and/or instructive for the development of PEGS. mySociety has two missions:

1. To be a charitable project which builds websites that give people simple, tangible benefits in the civic and community aspects of their lives.
2. To teach the public and voluntary sectors, through demonstration, how to most efficiently use the internet to improve lives.

Although they are stated quite broadly, these missions are clearly intended to be interpreted in the context of eGovernment. These missions have led to the development of a number of innovative eServices that give citizens access to some aspect of government that mySociety staff members – based on their own experience as citizens and participants in government, as well as on input and feedback from eService-users – perceive to be not currently (or effectively) provided by government itself.

Although none of mySociety's eServices made the transition to a PEGS during the scope of our study, a number of them have been replicated in other Member States, thereby achieving a degree of European "permeation", and mySociety appears to have some potential to produce PEGS in the future. In addition, the characteristics of mySociety eServices (small, intuitive, adaptive to feed back, trial and error, technology-driven) seem to offer several lessons that may apply to the development of PEGS. One caveat must be noted: the extent to which lessons derived from mySociety apply to the development of PEGS by government agencies, as opposed to small civil society organisations, remains uncertain. It remains an open question whether some types of PEGS (for example, those requiring customised "back office" support or intensive coordination of effort among Member States) may be more effectively developed by government agencies, in which case the lessons derived here must be re-examined and revalidated in the context of those agencies.

Canadian telehealth case; cross-border provision of care outside the EU

This case study examines three telehealth providers in three provinces: the Ontario Telemedicine Network in Ontario[40], MBTelehealth in Manitoba[41] and Capital Health's

[40] See www.otn.ca

Regional Telehealth in Alberta. The Canadian telehealth providers are reasonably well funded and enjoy good relationships with their governing organisations, the federal government (with whom they interact on matters concerning First Nations peoples), provincial Ministries of Health, local Regional Health Authorities (RHA), boards of directors, advisory committees, etc. The ultimate mission of the telehealth providers is to use ICT to improve access to and delivery of healthcare and education and research related to healthcare. This should eventually include the provision of seamless access by physicians to electronic medical records (EMR), real-time information about their patients, diagnostic and laboratory results, radiology, specialist consultations, etc. However, the current low adoption rate of EMR in Canada and the limited interoperability of existing medical systems make this vision of seamless interaction a vision of the future. The current most frequent clinical use involves remote consultation services and videoconferencing to link patients to one or more physicians, diagnostic facilities or other resources. Videoconferencing is also used extensively to deliver healthcare education to rural or remote healthcare providers or facilities, and to connect to remote family members.

Most cross-province interactions are initiated by individual healthcare providers or hospitals. In most cases, these are motivated by the proximity of some physical facility or centre of expertise across a provincial border. For example, patients in Quebec may cross the border to visit specialists in southern Ontario, and patients from all over Canada may utilize the expertise of the organ transplant centre of excellence at the University Health Network in Toronto (southern Ontario). Any such physical use of cross-province medical facilities is likely to be supported by corresponding cross-province pre-operative and post-operative telehealth consultations fielded by the province in which the visited facility is located. This linkage between the locations of physical facilities and the telehealth facilities that support them has interesting implications that may apply to some European PEGS cases as well. One European analogy to this may be to analyse patterns of the physical movement of citizens (travel) and cross-border reimbursements for various specific purposes, in order to identify services that could be provided virtually. Some of these may be satisfied by national eServices, but cross-border travel may be a good indication of the need for PEGS. Once created, PEGS may also perform outreach and education functions to help users make the paradigm shift toward using them as an alternative to travelling.

SEPA; a private-sector approach to multi-stakeholder cross-border cooperation

The SEPA case represents an example of how the private sector deals with multi-stakeholder problems and the development of pan-European eServices. The Single Euro Payments Area (SEPA) is an industry initiative by European banks started in 2002. However, the first step came from "Brussels", with the Lisbon agenda to develop the internal market. The main drivers at the EU level are the European Central Bank (ECB), European Payments Council (EPC) and European Commission (EC). The objective of SEPA is to develop the internal market for payments based on self-regulation by the banking industry in Europe. The project is concerned with the development of European business rules and standards for both domestic and cross-border payments in Euros. The initiative is not typical for the private sector as there is probably no short-term business

[41] See http://www.mbtelehealth.ca

case; the benefits of SEPA are expected to materialize only on the longer term. Still, the SEPA initiative has delivered clear and timely results in an environment of 31 countries, thousands of banks, and multiple stakeholder groups (regulators, businesses, consumers).

4.2 Common features and lessons to be learned

From the case studies, interviews and workshop discussions, a number of clear drivers, incentives and enablers have emerged. There also seem to be common elements in the way PEGS are developed, thus presenting very useful insights in the mechanisms and the potential for supportive action.

4.2.1 Steps and issues in building a PEGS

There are some common elements to the development of successful PEGS. The PEGS development process seems to be bottom-up, step-by-step and gradual; it is characterised by learning-by-doing. Generally there are a small number of "first movers", which can be practitioners from the public sector (e.g. the public land registration service organisations in a few Member States, such as the Kadaster in the Netherlands which was one of the actors to start up EULIS) and from the private sector (e.g. health insurance companies, or banks) in different Member States. Such "first movers" form a partnership, creating critical mass in terms of organisation and funding to start a PEGS.

A prior relationship between the key actors and a high level of trust is a common feature. The "first movers" of different Member States are often already in contact with each other and to some extent know each other. There is an initial perception of having a common goal, and a level of trust, which has evolved in earlier interactions and which is increased through further interaction. To some extent this interaction needs to be personal, especially in the beginning; people who have met in person often cooperate much better, the generated trust functions as oil in the PEGS machine.

Typically, the structure of current PEGS consortia is open, allowing other actors from other Member States to join (as Netc@rds demonstrated, and as is also evident in the CIP ICT PSP Large Scale Pilots), if they fulfil certain conditions such as the presence of a developed eService in the policy area in the Member State that wants to join. These conditions determine to some extent inclusion and exclusion but only temporarily; if a Member State is not "e-mature" enough in a certain policy area, the Member State can continue to develop at its own speed and in accordance with its own priorities, and then join when it is ready.

The group of "first movers" explore and experiment with organisational and technical options, identifying barriers as they go along, and creating solutions for circumventing or removing them. It is crucial that their experiences are made explicit so that not only they themselves, but also others, can maximally learn from them; whether it be those in the same policy area wanting to join the PEGS, or those seeking to develop a PEGS in their own policy area..

PEGS usually build on existing national applications and infrastructures, following a federated approach, which implies that national building blocks need to be in place. A map can be outlined which describes the various steps or activities and the interaction and interrelationship between different steps and associated factors (see Figure 6). The classes

of activity to be undertaken include: creation of essential preconditions that can be directly influenced by organisation; exogenous and endogenous factors that should be taken into account when trying to deliver PEGS; organisation of the development process itself; a summary overview of the critical steps in the process; important elements belonging to each service under development; and finally what follow-up is required after the development phase.

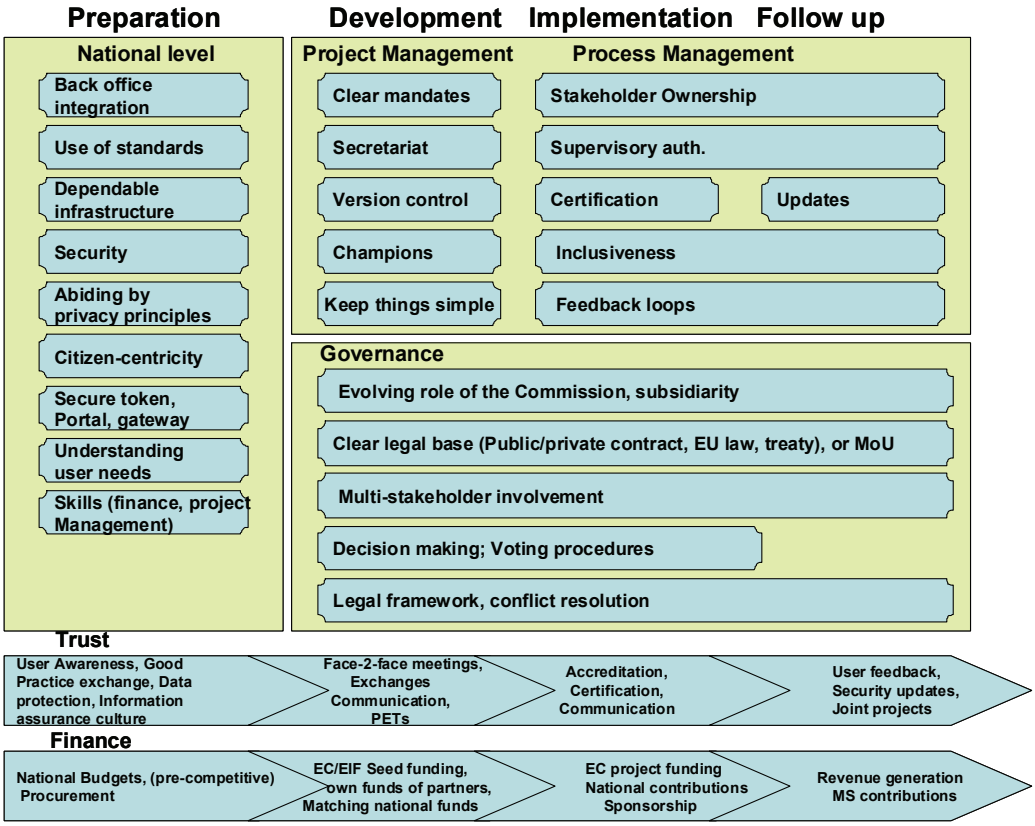

Figure 6 Interaction between elements to deliver secure pan-European eGovernment services

Source: RAND Europe, Securegov Final report (2008)

4.2.2 Common features in design and approach

Impetus to coordinate

The establishment of a PEGS typically involves a coordination challenge. As indicated earlier, the political support at national level backed up by EC/EU policy initiatives is important to create a common policy framework in which coordination of activities is enabled. In the case of the bottom-up development of a PEGS on the basis of dispersed existing eServices, there is a need to coordinate the public authorities that provide these services. In the case of top-down establishment of a PEGS, the coordination challenge is of a different kind. If an initiative for an eGovernment service is launched on a Europe-wide scale, the cooperation of local public authorities in Member States must be organised, and the service needs to be integrated into local administrative structures. SOLVIT is a case in point. Its functioning depends upon the commitment of national public authorities to cooperate. Its success is explained by, among other factors its operation on an informal

basis, which makes integration in local administrative structures easier. For NETC@RDS, also, coordination is a main challenge. Its functioning depends upon coordination of health authorities and health services in Member States. NETC@RDS tries to solve the coordination problem by developing advanced technology and by introducing common technical standards among all organisations that contribute to the system.

Building blocks

In preparation of cross-border collaboration, national building blocks should be put in place, such as citizen centricity, identity management, an integrated back office, solid security and privacy control mechanisms, etc. Prior to attempting to deliver any ambitious PEGS agenda an investment must be made in the creation of *trust* amongst key stakeholders. Effective coordination requires some degree of trust and a shared frame of reference between partner institutions in participating Member States. In addition, trust of the users in the service providers is important for uptake and diffusion. Trust between partners is to a considerable extent a side effect of personal contact, which – especially in the initial phase of PEGS development – is important. Existing (personal) contacts between partners in different Member States and between partners with different backgrounds (e.g. public and private sector) provide fertile ground for PEGS. This is partly because existing contacts signal existing needs for cooperation, but it is also partly an autonomous factor: a history of interaction builds familiarity, shared terminology, common understanding and trust.

Governance

To facilitate and enable the development of a PEGS an appropriate organisation is required, along with the establishment of a mandate, and an unambiguous inclusive and agile governance mechanism (which needs to be transparent, involving all relevant stakeholders, voting systems and decisionmaking mandates, with a clear identification of the role of the European Commission, etc.).

The governance structure of the cases that we analysed are all rather similar in the sense that a board of (main) stakeholders manages the network of all involved parties. This board can reach a remarkable size and usually contains public-sector institutions as well as private companies and institutions of the voluntary sector. The board operates independently of the participating organisations, though collaboration between board and partners is tight, due to personnel overlaps. The chair of the board usually changes every six months. Tasks and responsibilities within boards are usually clearly defined on a formal level, while informal arrangements help the network to function and to meet user demands. Close involvement of the board with the eService organisation is crucial to maintain focus and to ensure appropriate budget allocations and spending controls. This involvement also ensures that the stakeholders are supportive of the projects that receive financing.

Good communication between all the stakeholders (notwithstanding the importance of properly identifying all having an interest in PEGS implementation) and those organisations in control of the direction of the process is essential.

The decisionmaking process may take consensus as a desirable principle, but voting must also be considered. Achieving consensus is time-consuming and often leads to broad compromises, which are likely to deliver frameworks that leave too much discretion to individual MS, which will lead to new barriers to interoperability.

Any PEGS will include private-sector partners (as it would be impracticable and highly expensive for European governments to choose to deliver such PEGS by themselves). Involving the private sector not only in the execution, but also in the design of PEGS solutions, would probably increase pragmatism in the delivery of a workable solution using global standards (possibly tailored to a European context). The public sector can learn from the private sector in the way in which different solutions are found to the same sorts of problem (e.g. with regard to inefficiencies in governance).

Design

Each particular pan-European system has a number of common characteristics. These include such properties as:

- the use of existing and usually open standards
- maintaining user-centricity (keeping user needs at the forefront of service design)
- keeping simplicity in the architecture
- not getting bogged down in defining the detail of security (e.g. using a rule book approach) and letting the suppliers deal with it
- incorporating privacy requirements from the outset.

Currently, the main organisational principle of PEGS is the "portal structure". Portals are effective because they enable connecting services in different Member States and of different actors, while in principle leaving the underlying institutional diversity intact. This is important, largely because of the autonomy of Member States in the area of the public sector, but also because the institutional diversity would act as a major barrier if a PEGS were to require extensive harmonisation of practices. While portals are not the solution to everything, and while some basic elements of technical, organisational and semantic interoperability are necessary (or at the very least highly desirable) in order to really develop an effective PEGS, the portal approach seems to work sufficiently well in the current PEGS that are in place or in development.

In designing a PEGS a number exogenous and endogenous factors need to be accommodated. Factors outside the process such as current environment, habits, culture, legacy systems, changing political agendas, etc. may affect speed or impetus of progress. Other exogenous factors of importance include the threat to the environment, pace of technological change, market for relevant technologies (e.g. biometrics). A key question in this area is the time in which these different factors should be addressed – early in the process or at the later stages? Endogenous factors (i.e. those that are internal to the process) might include security factors, specifics of the user community and speed of take-up.

Operational management

The various eServices under review vary widely in mission and scope. As expected, the organisation of their day-to-day operations also differs substantially. To make an eGovernment service work, the personal element in the day-to-day operations appears to be very important. Behind the technology, there is a community.

As with many large-scale public-sector projects involving technology, there are a number of lessons to be learned for the actual process of the management of the project, governance of the decisionmaking and operation of the actual services once they are implemented. In

projects involving a broad and diverse group of stakeholders a clear roadmap with milestones and timeline is essential and must be adhered to.

From SEPA and other large-scale PEGS it is apparent that a (small) secretariat is required to coordinate and support the development. As more organisations become involved in the development and maintenance of an eService, the day-to-day organisation of service delivery becomes more complicated. At that stage the secretariat can evolve into a separate agency to ensure continuity in the further development, management and exploitation of PEGS.

Whether a PEGS is launched top-down or develops bottom-up, for it to be successful there must be an actor that takes on responsibility. The organisations most affected (and with most to gain) from implementation should retain control of the strategic direction of any implementation This can be the European Commission, as in the cases of NETC@RDS and SOLVIT, or local public authorities as with e@SEConnects. The identification of such champions that are willing to lead the way, or evangelists at the Member State and European level who are willing to spread the word about the initiative and encourage active participation is essential.

Some specific consideration should also be given to IT staff required to execute the project. The influx of budget that PEGS may bring could also have unintended knock-on effects on public servants used to managing projects with scant resources.

Budget

Obviously, to get a PEGS off the ground, an adequate budget is needed. It often appears to be hard to raise sufficient funds, because financial benefits of eServices are difficult to estimate. The direct financial costs of eService portals are to be found in the infrastructure and in labour for creating content, programming new applications, answering questions and coordination. For instance, in the case of HELP, the project has been transferred from the Ministry of Finance to the Chancellor's Office because of budgetary problems. The main benefits stem from the reduction of workload elsewhere in the public administration apparatus and a more efficient processing of transactions. Thus, as is often the case with innovative investments in the public sector, the benefits do not necessarily accrue to the same organisations that take the decisions or bear the costs.

Budgeting for PEGS is even more difficult as national budgets rarely accommodate coordinating and developing services outside the direct national context. Also the group of beneficiaries (mobile citizens) is relatively small. When considering the additional organisational and technical efforts required to set up the service, this is likely to give a distorted view of the cost-benefit balance for the individual public authorities involved.

Therefore EU seed funding or "public venture capital" is very important to kick-start PEGS. This initial funding should help to mobilise more matching funds. In the optimal financial mix, seed funding from the EU leverages other sources of funding (from national budgets, partner organisations, clients, sponsors, financial institutions) and is used as "threshold" money, to get over the threshold of initiating PEGS development, after which a development trajectory can become self-propelling. It is important to make sure that funding structures strengthen rather than distort incentives, and that the underlying business model is clear and simple.

Follow-up action for sustained service delivery and up-grading

Follow-up actions will be required in order to exploit the development phase, build upon successes, consolidate progress and awareness and adjust the architecture (where possible) based on user feedback. Examples of such activities include:

- education of those leading implementation in each Member State to ensure they are aware of the need to appropriately manage budgets (leaving enough for dissemination)
- marketing and awareness campaigns (necessary to reinforce the benefits of PEGS to citizens and counter any likely bad publicity)
- publicity and other dissemination efforts
- embedding the output of the development phase in national activities to make PEGS endemic and an automatic part of the delivery of eGovernment at the Member State level.

Equally important and related is the availability of information and knowledge about how to develop PEGS, through *good practice showcasing*, the presence of an "information clearing house" in which supply and demand of information and knowledge can find each other, and active community building to facilitate and stimulate exchange, interaction, learning, and in some cases leading to actual cooperation between actors in the area of PEGS. Availability of PEGS-relevant information and knowledge thus becomes an important enabling factor.

4.2.3 Drivers of PEGS development[42]

At first instance there are the high-level policy contexts discussed in section 2.2., which provide the political framework and signal the need for the development of PEGS. However, these do not explain the deeper motives of the people who are actually developing the services in different Member States.

The most important driver of PEGS development is the perception of a clear, obvious, important policy-need for a cross-border dimension in public service provision in a certain area. The shared perception of a policy-need works as a powerful binding "glue" between different organisations (public and private) in different Member States. Obvious policy-needs with a cross-border dimension are pollution, crime and traffic (addressed by eServices such as European eJustice Portal, the Schengen Information System II, EUCARIS car registration, etc.). Other policy-needs, such as cross-border healthcare and creating a European mortgage market are less immediately urgent but no less important; they are related to the deepening of the internal market in order to gain economies of scale and scope at the European level rather than the national level.

Another driver is the wish or necessity to achieve more effective service provision and to reduce administrative burden, both the burden for public service providers and for citizens (i.e. efficiency and effectiveness argument). Public service providers want to increase the efficiency of their back offices and need to implement a cross-border dimension to achieve this, for example when (increasingly) dealing with citizens or businesses from other Member States who live, study, work, retire, produce or consume in a Member State

[42] Mostly taken from EUReGOV Case study report and 2 EUReGOV Workshops

which is not their own. Public service providers may need to check the credit history of individuals and firms to make sure they do not have big debts in other Member States; they may need to verify credentials such as diplomas; they may need health information about medical treatment in the past; or they need to find out whether a person receives social benefits or pays taxes in another Member State. These issues currently take a lot of time and resources, if they are done at all. As things stand, citizens and firms – especially mobile citizens and firms – are confronted with a bewildering administrative burden, having to deal with all kinds of public service providers in different policy areas and in different Member States. Integration of service provision, including some degree of integration across the borders of Member States, can greatly reduce this administrative burden for citizens and firms, thereby taking away a barrier for mobility and thus contributing to deepening of the internal market.

At a deeper level there are more fundamental, "existential" motives: the need to continuously show added value to the taxpayer (citizens, firms) in order to strengthen legitimacy; the intrinsic, real desire to serve citizens as well as possible, out of a sense of "public mission"; the inherent desire to "make things better"; the status associated with having a "best practice" (practitioners and policymakers are proud of their achievements and like to show it to others); and the drive to be of value to others by sharing knowledge, providing assistance, and cooperating. This explains why the presence of a "real policy need" is an important driver: practitioners and policymakers are to considerable extent driven by intrinsic motives, such as a sense of justice (thus cooperation in the area of crime), the normative disapproval of waste of time and resources (thus aiming for more efficiency), an ideal of fairness (thus cross-border cooperation in the area of social benefits in order to prevent misuse of the system), or the respect for the environment (thus cross-border cooperation in the area of pollution).

Pressure of public opinion and the media act as driver because these signal "real needs" and help to overcome institutional inertia preventing innovations such as cross-border cooperation in public service privation. Direct pressure by citizens in specific policy areas is important, because the indirect ways of informing the government about what to do (e.g. via elections) are often too weak and slow for real, concrete change. It is the task of citizens and groups of citizens (firms, civil society organisations, ombudsmen) to give feedback to public service providers about how they are doing (providing a disciplining force) and whether they are doing the right thing (providing signals about the needed direction of change). It is the responsibility of public service providers to respond to this pressure in an adequate way.

However, this pressure from citizens will not be very strong because of the currently low mobility of citizens and the lack of a European perspective in the minds of citizens when thinking about problems such as how to get information about real estate in another Member State (which would be solved through a European land registry), or waiting lists in healthcare (which could be solved by making use of healthcare in another MS). More pressure can be expected from other actors in the field, such as banks wanting to provide mortgages on real estate in another MS, or health insurance companies wanting to reduce waiting lists and other costs.

Even with these actors in place, we will have to accept that demand articulation in the area of PEGS is weak and fragmented. There will have to be some supply-push to help develop the demand and to achieve a threshold of critical mass in demand, a point from which demand will to some extent become self-propelling and will become more articulated and more effective as driving force. Stimulating the development of PEGS will have to act strongly on creating a perspective in which (potential) PEGS users start to recognise their unarticulated demand.

4.2.4 Obstacles

Obstacles come in many forms. They are the counterbalance to drivers and enabling factors; i.e. where these do not exist we perceive an obstacle. A number of main categories may be identified: cultural, governance, organisational, technological, financial, legal and security related obstacles.

Cultural obstacles: The EU is a mix of widely different cultures spanning 27 different Member States, each with particular national habits and expectations. There are also regional variations which may serve to affect the deployment of PEGS, for example in the preferences for forms of regulatory intervention. There may also be country-specific considerations concerning the use of personal data to take into consideration. This is particularly the case with new Member States in Central Europe that may have cultural or even legal barriers to the management of personal data necessary for eGovernment to take place. Although these cannot be easily and quickly reconciled, a first step to addressing them is identifying them and making them explicit so that any solution can take such differences into account.

Governance obstacles: The process of developing trans-border PEGS does not fall under any direct EU competence, which means that the Commission has no formal mandate to act and that there is no applicable project-management or governance structure. Competing interests of European, national, regional and local actors can lead to strategic obstacles hampering cooperation and undermining the enabling conditions for cooperation such as trust and a perception of a shared goal. Supranational PEGS in particular have to struggle with the fact that they are implemented with pan-European scope, but can deploy their full efficiency only when Member States are prepared to adjust their national service systems to accommodate them.

Member States must accept loosing some control over service delivery and have to compromise on ways national services are designed, run and delivered. When the interests of Member States' public authorities or service providers are not aligned with the interests of EC institutions, it turns out that PEGS are usually in a weak position. This is illustrated, for instance, by the SOLVIT case. Although the establishment of SOLVIT was based on an agreement between the European Commission and the Member States, it took quite a while before national public authorities in these Member States were willing to collaborate smoothly among each other and with other EC institutions.

Organisational obstacles: In general, reorganising tasks and the active involvement of citizens in the provision of public eServices may result in uncertainty, reluctance and resistance on the shop floor. This point is illustrated by the Austrian HELP case, which at the time of its inception met a lot of resistance. For instance, employees with a legal or technical orientation tended to resist the idea of organising eServices around life situations

and focusing on easy-to-understand content. They found the approach too vague and unstructured. Some people in other ministries felt that they had to contribute to a project from which they did not expect to benefit (enough). Others feared a decrease of independence and a loss of influence and power when passing on tasks and responsibilities to the administrators of HELP.

This resistance relates to the so-called "not-invented-here syndrome". There is a resistance to implement best practices developed elsewhere and a tendency to exaggerate the uniqueness of one's own needs and characteristics. The required amount of adaptations to eServices on offer is exaggerated or the adaptation of an application is totally rejected.[43] For instance, potential adopters of HELP often insisted that, in spite of the proven quality of the concept, all kind of adaptations were made before they would implement the application in their environment. Another inhibiting factor can be the interests of large and powerful IT departments that capture projects and convince policymakers of the necessity to develop the application in-house, in order to protect their position within the organisation.

As with all eGovernment projects, PEGS require effective project-management. The bottom-up character of PEGS development poses many operational challenges. PEGS development is typically a complex process involving many different actors from different contexts with different interests and different understandings. It requires high-quality management in terms of communications, establishing clear objectives, translating between different contexts, planning, timing, evaluating and learning. Without good management, the initiative risks falling apart easily, making it a risky object for (public) investment. The (lacking) capabilities for complex project-management often form a practical bottleneck. Also, the policymakers that have to decide about PEGS development often do not have sufficient knowledge of how to do it, in particular their technical knowledge (ICT applications) seems often insufficient.

Technological obstacles: Across the Member States there is a broad range of eGovernment systems in varying stages of deployment. These range from stove-piped systems in one or two areas (e.g. driving license renewal, application forms) to highly sophisticated environments with gateways, XML-enabled interoperability and electronic identification (as is the case in Belgium, Austria and to a lesser extent Estonia). Integrating these legacy systems is a considerable challenge. At the moment no comprehensive European interoperability framework exists that could provide the necessary guidelines for dealing with such legacy issues (interoperability is a cross-cutting issue which will be very briefly discussed at the end of this section).

Financial obstacles: As mentioned before, initial seed funding and long-term structural funding is vital but often not available. Existing budgetary structures of public service providers often do not offer much opportunity for spending money on cross-border

[43] Common reasons for the "not-invented-here syndrome" are a perceived feeling of loss of control over the development of the project; not being well informed about best practices; and a feeling that the solution does not match the organisational culture. Although this could be part of the explanation, it should be kept in mind that implementation of an application almost always requires a translation of the concept to a different institutional context. Though this may result in new innovations and improvements, there is a risk that unnecessary adaptations are made at the expense of quality and interoperability (Katz and Shapiro, 1985).

cooperation. Often there is a considerable time lag between costs and benefits, and the costs and benefits are often distributed asymmetrically over different stakeholders. The costs are a problem in an era in which public service providers have to cut costs, while the benefits are often uncertain, unclear and far ahead in time, and difficult to appropriate.

A collective infrastructure for the provision of eServices, like any infrastructure, has the characteristics of a public good. It is therefore vulnerable to free-rider behaviour. When some consortium partners in a PEGS feel that the financial burden or the financial benefits are not equitably distributed, this is bound to cause tensions. This possibly leads to a bias in the development of new services towards those services that may meet the interests of specific consortium members of a PEGS, rather than meet citizens' needs. For example, although e@SY Connects is widely supported in the region, the willingness of consortium members to spend money from their own budgets on financing staff working directly for e@SY Connects is sometimes limited. The same applies to the development of services which may help to promote e@SY Connects (and which may meet strong user demands) but do not meet the particular demands of the clients of a majority of the consortium members. In these cases, a culture of "give-and-take" appears helpful to overcome these constraints.

Legal obstacles: Despite the presence of a number of pan-European legislative directives, there is still a wide variety of legislation in place concerning some of the issues that PEGS covers. For example, although the Data Protection Directive has been transposed into national laws of Member States, there remain differences in the details of its transposition. Also, European Union law allows the coexistence of national laws that deal with overlapping or adjacent areas. Such a patchwork of national rules complicates overall compliance.

Security-related obstacles: Security is not regulated; i.e. there is no Security Directive that contains legal incentives for actors to protect themselves.

One critical factor for PEGS is the requirement for interoperability or comparability of security levels and approaches. Although when using certain networks (e.g. sTESTA) each participant must be certified according to a common standard that they meet security requirements, this is not possible with the open nature of any PEGS. The difficulty with achieving comparability of security in PEGS is in finding common ground due to different security practices, infrastructures and cultural attitudes to security. Getting agreement on what security levels can be associated with what services also complicates any attempt to work towards an applicable security framework. Any system is only as secure as its weakest link; therefore care must be taken in the certification and accreditation of participants to ensure that the security posture is not unduly compromised (and if this looks likely, then a process is in place to deal with such challenges).

Clearly designing a security certification framework that can deal with such uncertainties is challenging. The 2005 IDABC initiative for creating a trusted intermediary between PKI authorities in the MS – the Bridge Gateway Certification Authority feasibility study – has stalled in legal and technical challenges.

Another consideration to be addressed in the wider context of security is how the inter-dependencies caused by interconnection of infrastructures across Member States affect

overall system resilience. Acquiring a better understanding of how dependability is affected in a system of systems approach in the context of PEGS is a further pre-requisite, so that areas of critical dependency can be identified and taken into consideration in the development of security requirements. An issue which is half way between security concerns and legal concerns is the area of data protection (or privacy). Data protection concerns are an important and real obstacle as the risk of breaches is high and the possibilities of enforcement and redress are low in a cross-border environment. Data disposal rules are not implemented effectively, leaving old and often inaccurate data in systems. In addition, enforcement of rights is difficult as the data protection system is complaint-driven (ex post), and complaints are difficult to file due to differences in design and remits of data protection authorities. The multiplicity of systems in each nation (and varying levels of maturity of systems) adds to the problem, as there may be many layers of interoperability. As these increase so, too, does the risk of a privacy breach. Finally, there is the cross-cutting issue of interoperability. Lack of interoperability at all levels (including technical, organisational and semantic) is a barrier that can be only partially circumvented by using a portal approach (see Table 3).

Table 3 Different categories of interoperability

Administrative interoperability	Conflicting, exclusive or overlapping jurisdictions and accountability
Legal interoperability	Different legal regimes with conflicting rights and obligations, e.g. privacy and safety
Operational interoperability	Different working processes and information-processing processes, routines and procedures
Technical interoperability	Incompatibility of "legacy" infrastructures and applications (hard and software)
Semantic interoperability	The idiosyncrasy of information specifications and the lack of common data definitions
Cultural interoperability	Conflicting organisational and national norms and values, communication patterns and grown practices
Source: Bekkers, V. Presentation EUReGOV Workshop 6-05-08	

4.3 Learning from others: lessons from comparative cases

Lessons from civil society: mySociety

The civil society case – mySociety – offers a few additional lessons that complement the study of PEGS. Not all PEGS need to be delivered by public authorities. The mySociety case demonstrates how a non-governmental organisation can complement and improve regular eGovernment services. At the same time good civil society projects may not have incentives or business models to fulfil their pan-European potential. None of mySociety's eServices made the transition to a PEGS during the scope of our study. That said, a

number of them have been replicated in other Member States, thereby achieving a degree of European "permeation", and mySociety appears to have some potential to produce PEGS in the future.

The case of mySociety demonstrates that small non-governmental actors may be well positioned to:

- think outside the box of complex, large-scale projects, which enables it to realise the visions of its staff with a minimum of bureaucratic, process-laden overheads
- submit its ideas without widespread scrutiny before being implemented, and to adopt a trial-and-error approach based on rapid adaptation of the service following user feedback
- use the intuition and expertise of the designers and programmers among its staff to find the "sweet spot" for an eService, which balances functionality against complexity.

The high success rate of its projects suggests that this may be far more effective than the belaboured processes that are typically used by large commercial and government organisations.[44] Large organisations are frequently held back by complex and conflicting opinions of their large design teams, marketing departments and other stakeholders. Successful intuition and expertise may be no more likely to be found in a small organisation, but they may be far more likely to be recognised, nurtured, unimpeded and embodied in its eventual products.[45]

Specifically for PEGS a number of lessons can be drawn up:

- Neither governments nor citizens may be the most fertile breeding ground for developing eServices. Governments may in general be too process-heavy to muster the required agility, expertise and intuition needed to develop innovative eServices, whereas most citizens may lack the technological imagination to envision innovative eServices that would be of use to them.
- PEGS may achieve similar levels of acceptance (achieving a "sweet spot" balancing functionality of an eService against its complexity) by applying a trial-and-error strategy and actively inviting user feedback.
- Both the range and combination of capabilities that are provided by an eService and the mechanisms that are used to deliver those capabilities appear to become more innovative when they are balanced against each other.
- Governments may not be well suited to developing eServices that leverage their own existing services. Any organisation that provides existing services tends to exhibit considerable inertia in changing those services, combined with tunnel vision when considering how they might be changed. This suggests that non-government groups may be more effective at developing innovative and

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[44] Tom Steinberg served in the Prime Minister's Strategy Unit before founding mySociety, which provided him with an insider's view of the workings of government.

[45] See for example, Cockburn (2002), or Ambler (2006).

appropriate eServices than government organisations themselves, even – or perhaps especially – if the services in question rely on underlying capabilities that are provided by the government.

- However, some types of PEGS may be more effectively developed by government agencies, for example, if they require modification of back office processes or coordination with other Member States.
- eServices should be responsive to user feedback, as well as to the evolving needs and capabilities of relevant government agencies. They should be modified and improved in response to these evolving factors, while maintaining or extending their balance between simplicity of use and functionality, i.e. maintaining or re-establishing their "sweet spot".
- None of the mySociety services have evolved into PEGS, despite the fact that several of them have achieved European permeation by being replicated in other countries. The speculative lesson here is that PEGS may be unlikely to grow spontaneously out of geopolitically localised eServices or to emerge from groups whose primary focus is on working with citizens and local governments in a single country. Instead, the development of PEGS may require the concerted efforts of interest groups that have the focus and vision to create PEGS.

Lessons from "abroad": Canadian telehealth

The Canadian Telemedicine case was chosen because it is a working cross-border service, in a multilingual country with a federal structure, and because cross-border (e)healthcare is a strong contender to become a high-impact PEGS in the near future. The challenges identified in developing and managing the service are likely to be similar in the EU, and thus may be expected to provide useful information for future PEGS:

- *Scheduling physical facilities*. On a day-to-day basis, the main operational challenge that faces Canadian telehealth services is the scheduling of the physical facilities needed to support telemedicine.
- *Paradigm shift:* The paradigm shift that it requires among both healthcare providers and patients, requires considerable efforts working with individual physicians and healthcare organisations to increase awareness of the potential for telehealth care delivery.
- *Bandwidth is a constant concern:* The current ICT infrastructure in Canada still seems sufficient to support telemedicine in its most common present forms. Some quality of service (QoS) mechanisms are employed to help address this issue.
- *Interoperability:* A deeper and longer-term technical issue is interoperability, especially as greater integration is sought among medical systems and services, following the vision of the seamless access by physicians to Electronic Medical Records (EMR), real-time information about their patients, diagnostic and laboratory results, radiology, specialist consultations, etc. Infoway offers some help in this regard by proposing and promoting pan-Canadian technical standards.
- *Regulatory issues:*

1. Licensure: The main regulatory issues confronting telehealth providers are those concerning credentialing and licensure. The Canadian Public Hospitals Act requires physicians to be credentialed at each facility (e.g., hospital) at which they work. But telemedicine enables a physician to work remotely at dozens of different hospitals, and the locus of care may be considered to be the patient's location rather than the physician's.
2. Compliance: the need to conform to local laws or other standards and criteria. A physician may be held accountable for providing services that meet the standard of care in a given locality. Yet the relevant locality may be that of the physician's residence, the patient's residence, or the location in which the service is actually performed.
3. Privacy and security regulations affect telemedicine, as well as other aspects of IT and healthcare in general.

This Canadian telehealth case study reveals several interesting phenomena that have implications for PEGS and European eServices in general; they include:

- Patterns of cross-border interoperation among the national eServices that comprise PEGS may correspond to the distribution of physical assets underlying those eServices. Conversely, in cases where no physical assets underlie the constituent eServices in PEGS, it may not be as important to interoperate among multiple national services.
- PEGS may have to conform to other local laws, standards and criteria. In an increasingly virtual environment, it may be difficult to determine which such local constraints apply, thereby creating liability problems for PEGS.
- Cross-border travel and reimbursements may be a good indication of the need for PEGS. Once created, PEGS may also perform outreach and education functions to help users make the paradigm shift toward using them as an alternative to travelling.

Lessons from Business: SEPA

The private sector is often credited for being more effective and efficient that its public-sector counterparts. It therefore seems worthwhile to assess what lessons may be learned from a private initiative to develop a pan-European eService, involving multiple stakeholders. The Single Euro Payment Area is a case in point, in which 31 countries, 6000 banks and associations, regulators, interest groups (corporate companies, SMEs, merchants, consumers, public authorities) collaborate in developing one payment system for Europe. The key challenges that were identified are very similar to any PEGS:

- legacy and migration – getting the existing countries to use the new SEPA payment instruments and migrate from their old domestic environment
- digital divide, requiring a multi-channel approach (phone, DTV, web, etc.), to ensure access for all
- the need to achieve sufficient *uptake* and critical mass: the network effect will only kick in if a sufficiently large user group exists. The underlying rationale for the low take-up of eGovernment needs to be further explored and identified.

The experience in developing SEPA is very similar to that of the PEGS cases, though there are specific lessons to be drawn:

- The Multi-stakeholder model actually works, because the primary stakeholders (champions) are driving the process (in the case of SEPA, these are the banks supported by the European Commission and the European Central Bank).
- Striving for consensus among stakeholders is good, but there is a risk that consensus breeds weak compromise. Sometimes clear decisions have to be taken by majority voting or otherwise. This points at the critical requirement of having clear, transparent and effective governance structure and decisionmaking processes in place.
- To allow effective project planning, "Frameworks" should not be too "loose" and should prescribe clear rules and define (the use of) standards. A roadmap helps to define these upfront with clear milestones and target dates. It is important that this is ambitious but also realistic, in order to ensure that all parties can stick to them.
- A two-tiered structure of EU-level activity (for design and monitoring) and national-level activity (communication and implementation) has been effective in separating the design phase from national implementation and migration.
- Security is an important feature of any payment system. The development of a multi-bank security infrastructure (e.g. based on PKI) would, however, be very costly and implementation would be moreover be very difficult, having to replace existing solutions already rolled-out to a mass market. However, it has proven possible in some banking projects to leverage existing solutions while achieving interoperability at the user level[46].
- Applying best of breed technology does not always work in practice, due to political resistance resulting from different stakeholder or national interests. It is preferable to start from scratch but to build on existing knowledge (exploiting the learning curve) to move forward. In doing it is advised to chooser simplicity – where possible - rather than grand design and to apply available global standards, tailored for Europe.
- Finally, effective project-management is important and should receive due attention and resources. For developing cross-border eServices like PEGS, parties should consider setting up a project secretariat in charge of continuity and support. Such a neutral (executive) secretariat is key to managing version control of the project documentation and to act as a knowledge hub for the project.

The insights generated by the cases, combined with the theoretical frameworks described in Chapter 2, provide the basis for the next two chapters, where we will assess how to measure the impacts of PEGS and the progress in developing them; as well as to suggest policy options to the European Commission on where to intervene effectively in the PEGS development chain.

[46] One example (in the area of secure e-commerce) is in the iDeal scheme in the Netherlands.

CHAPTER 5

Measuring: benchmarking and impact-assessment

The EUReGOV project was intended to develop a number of measurement tools. Firstly the European Commission was seeking ways to help identify which PEGS to invest in, based on their potential impact, i.e. those services that would have a profound impact on a large number of users and would serve the policy objectives of the EU. Moreover it wanted to extend existing impact-assessment frameworks for determining the costs, benefits and return on investment of eGovernment projects to also include PEGS. Secondly, the European Commission sought to add a PEGS dimension to its annual eGovernment benchmarking exercise. Thus it required a composite indicator for measuring PEGS activity at the MS and EU level.

However, as indicated in the preceding chapters, PEGS are still in their infancy and there are hardly any fully-fledged mature PEGS to be measured. Therefore, a new approach was developed to measure or assess the propensity for developing PEGS, by identifying the critical building blocks and processes for PEGS, which can be measured.

This chapter is intended to support future benchmarking efforts and ex ante and ex post impact-assessments of PEGS[47], by the Commission and the Member States, in order to be able to make the (real) business case for PEGS.

5.1 Assessing impacts: an impact-assessment framework for PEGS[48]

The costly investments in PEGS development (which may often not seem worth it at the national or regional level) can have benefits way beyond their direct impact. Second-order impact can be very large, but is often difficult to determine and to isolate, due to the many other factors that play a role in the realising of these more complex effects. It is the challenge of impact-assessment, regardless of what system, methodology or model is

[47] More detail is provided in the EUReGOV papers:

- Cave and Simmons (2007)
- Weehuizen, Van Oranje (2007)
- Weehuizen (2009) Impact-assessment framework for cross-border and pan-European eGovernment services (for DG INFSO)

[48] Taken from: Weehuizen (2009)

chosen, to include these effects. Only if this is recognised and made visible can real, informed decisionmaking on PEGS take place.

5.1.1 Critical elements: assessing PEGS as integrated policy instruments

Weehuizen (2008) identified a number of critical elements that should be present when assessing the impact of PEGS:

Be domain-specific. When assessing impact for the sake of prioritising and selecting PEGS for investment, compare PEGS within a certain domain rather than PEGS in different domains. When PEGS in *different* domains need to be compared in terms of impact (for example for decisionmaking), it is important to avoid distorting common denominators (such as economic impact), or even hidden political choices. The only way that PEGS in different domains should be compared is in terms of their effectiveness, how much they contribute to whatever the aim is in the specific domain that the PEGS is located. This criterion is important to dispel any attempts to use impact-assessment to compare the relevance of PEGS in one policy domain and its outcomes with another domain (e.g. PEGS in health or in security).

Assess the impact of PEGS in an *integrated way (*taking into account costs and benefits in all areas (economic, social, environmental, etc.) and with a keen eye for trade-offs and synergies.

Involve stakeholders in the assessment of PEGS, in order to ensure that PEGS are maximally need-based and to help make the design of PEGS as "smart" as possible, in terms of working with incentives, based on real insights in behavioral dynamics of the providers and users of PEGS.

Acknowledge the "subsidiarity failure" involved with PEGS – due to important positive externalities of PEGS – by going beyond outputs and direct outcomes when assessing their impact. To *include broader, indirect and second-order outcomes* is essential; especially in the case of PEGS, identifying the real cost-benefit picture is crucial, because if impact-assessment stops at the level of direct outcomes, PEGS will often simply not seem sufficiently worthwhile for the primary actors that have to invest in PEGS, the public administrations of Member States. [49]

Use impact-assessment to identify the *positive externalities* (benefits of a policy that are not taken into account by the actors deciding on the policy). Assessing the broader, indirect impact of PEGS will show the existence and size of these positive externalities. The presence of positive externalities means that the Commission should step in to correct the

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[49] Nature of the coordination failure:

the costs for PEGS development may be carried by one MS PA while it may lead to (second-order) benefits for other MS or the EU as a whole;

the costs for PEGS development may be carried by actors on one domain (for example health) while the (second-order) benefits may accrue to actors on other domains (businesses, the economy).

The costs for investment in PEGS may take a long time before they generate returns, beyond the time horizon of most policymakers at MS level.

"market failure" in this area – the principle of subsidiarity requires this. Proper impact-assessment will be an important tool to see whether and to what extent there is a role for the Commission.

Meaningful impact-assessment of PEGS can only take place when the *policy package*_in which it fulfills its function is taken into account. The development of PEGS in itself is not a policy aim. PEGS are developed to achieve something else, and their impact should be assessed in terms of to what extent they contribute to this higher-level goal – for example, further establishing the European Research Area, or further integration of the internal market, or better use of the healthcare capacity of Europe by connecting supply and demand across borders. If crucial elements of the policy package are in place, even a moderately effective PEGS can have a lot of impact; if not, then even the best PEGS in the world won't have much impact.

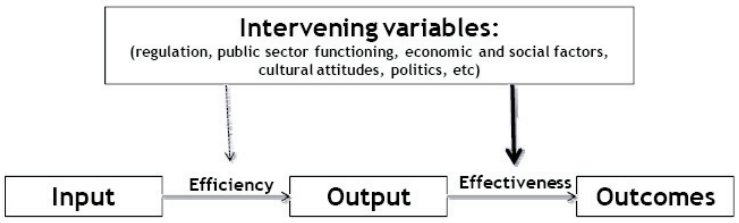
Make sure impact-assessment of complex effects such as second-order impact is done with the tools and models, of sufficient sophistication and quality; for this it is necessary to *involve science and to make use of scientific theory and models.* When doing this it is, however, important not to create "black boxes", but to keep the method of impact-assessment transparent. This is important because impact-assessment will be used for raising awareness and agenda-setting, and there is always a risk that more complex approaches will be used to manipulate decisionmaking rather than supporting it (even if the "manipulation" is done with the best intentions, by actors who may not even realise that they do it).

5.1.2 Identifying the PEGS-related impacts: results, outputs and outcomes

Proper impact-assessment which includes direct and indirect outcomes will play a crucial role in decisionmaking in the area of PEGS; only when the impact-assessment manages to capture the important indirect effects of PEGS will the real business case for PEGS become clear, and can informed decisionmaking about investment in PEGS (which, how, how much, by whom) take place. Without proper impact-assessment the development of PEGS will be slow and misinformed, due to the (rapidly increasing) sunk costs of existing (non-PEGS) eGovernment systems, which imply high transaction costs of providing eGovernment services across borders and at a European scale. European interoperability will substantially decrease these transaction costs but not remove them. Also, achieving interoperability requires an investment in itself, which needs to be justified. Only if the benefits of PEGS – in terms of their impact – can be made clear and, where possible, quantified, will investment in PEGS take place at the level that is optimal from a public good perspective.

Generally in impact-assessment the distinction is made between "output" and "outcome". Codagnone and Undheim (2008), in their brief discussion of impact-assessment, show how to understand this distinction when it comes to eGovernment, which we partly reproduce here and apply to PEGS. The term "output" generally refers to the concrete final products of activities, concrete achievements that the activity was primarily aimed at. Output is less influenced by external variables and more under the control of the producing unit. In the case of a PEGS in healthcare, output would, for example, include the number of patients accessing information provided by healthcare providers in another MS, or the number of digital bills that healthcare providers in one MS send in

electronically to health insurance companies in another MS. In the case of a PEGS in the area of justice, an output could consist of the number of legal files in one MS that were accessed by lawyers or public servants from another MS. The degree to which input leads to a certain output determines the efficiency of a service. The degree to which outputs in turn contribute to achieving the intended results determines the effectiveness of a service. This is depicted in Figure 7.



Efficiency= relationship between the input and impact, or "spending well"

Effectiveness= the relationship between the sought and achieve results for the constituencies, or "spending wisely"

Figure 7 Simple input-output-outcome model

Source Undheim and Codagnone (2008), p.7.

Achieving and measuring outcomes is more difficult than in the case of output because the influence of intervening variables is much stronger. As Codagnone and Undheim (2008) point out, applying the concepts of output and outcome to eGovernment requires some adaptive measures. Often eGovernment does not produce outputs that are significantly different from those produced and delivered in the traditional way. ICT is a General Purpose Technology (GPT), a technology that does not directly and by itself deliver an output (in contrast to medical technologies), but rather supports other delivery processes and in doing so can increase the efficiency and effectiveness of other production factors. Moreover, eGovernment can have effects only inasmuch as the services are adopted and used. One consequence is that establishing a casual relation with outcome is even more difficult when it concerns eGovernment. The effects of eGovernment on outcomes are indirect and influenced by external intervening variables, and in order to assess these effects they must also be disentangled from the effects of other factors of production. Undheim and Codagnone (2008) propose a model for representing the relationship between input, output and outcomes for eGovernment, indicating for each step the different types of measurement and impact-assessment methods (see Figure 8).

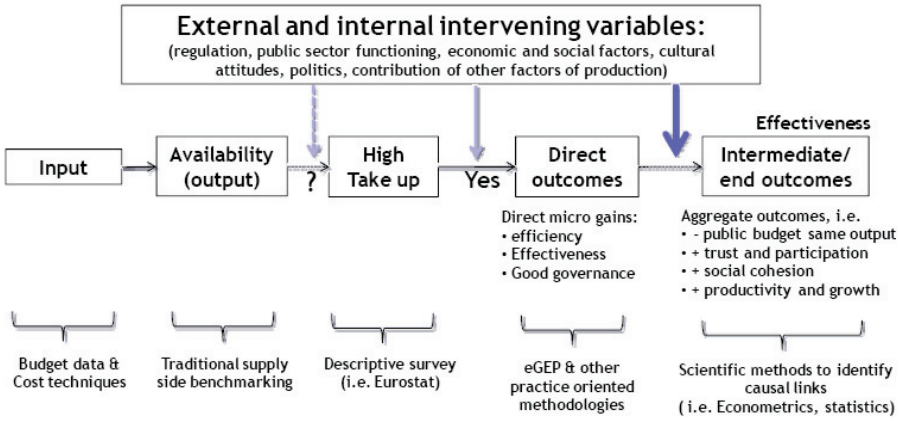


Figure 8 Adapted input-output-outcome model

Source Undheim and Codagnone (2008), p.8.

The assessment of PEGS impact should focus on the last two steps of this input-output-outcome pipeline, because there the methodology is most in need of PEGS-specific adaptation. Weehuizen (2008) proposed to distinguish two types of outcome: first-order outcome and second-order outcome, which can roughly be understood as "direct outcomes" and "end outcomes". The reason for using the terms "first order" and "second order" is that the aim is not to distinguish direct and end outcomes, but to distinguish between MS-level outcomes and EU-level outcomes, as will become clear in the discussion below. While what is good at MS level tends to be good for the EU-level also and vice versa, this is not a one-to-one affair: the costs and benefits of investments at the MS level leading to outcomes at the EU level are not necessarily perfectly aligned, due to the existence of, for example, externalities and network effects, thus the distinction is important.

The distinction between first-order and second-order outcomes is based on the definition of the problem to which PEGS are thought to be the solution. The policy problem that PEGS are supposed to be the solution to is two-fold: (1) public administrations would be more effective if public services would not stop at the borders since increasingly many citizens and business do not either, and (2) all polices aimed at reaping the benefits of an integrated Europe (e.g. the Internal Market) would be more effective if there were fewer administrative barriers between MS. Cross-border and pan-European eGovernment are thought to be (part of) the solution. Given the two policy problems that PEGS are expected to solve, two types of impact should consequently be distinguished:

1. First-order (direct) impact – this concerns conventional elements that are taken into account in impact-assessment of eGovernment, such as reduced costs, increased quality, reduction of administrative burden, increased accessibility and inclusiveness. To assess this type of impact, existing impact-assessment models for eGovernment can be used.
2. Second-order (indirect) impact – this concerns the impact of other (non-PEGS) policy which increases due to the enabling effects of PEGS. Most obvious here is the policy for the Internal Market and all the related policy, for example in the

area of mobility of persons, goods and services. PEGS can diminish existing barriers to the effectiveness of these policies, and their additional effectiveness because of PEGS implementation should to some extent be counted as (indirect) impact effects of PEGS.

First-order impact of PEGS is in many ways comparable to "normal" impact-assessment of eGovernment, and can be carried out using existing impact-assessment models for eGovernment or for innovation in the public sector more in general (consistent with the flowchart of Undheim and Codagnone 2008, depicted in Figure 8).

However, there are some specific considerations that should be taken into account; the costs and benefits of investing in PEGS may not be as well aligned as in the case of national eGovernment, and the time lag before a return on investment may be longer. Also, in terms of increasing the effectiveness of a MS national PA, a number of effects (both positive and negative) need to be taken into account that generally do not play as much of a role in the case of national- or regional-level eGovernment services. These effects will be discussed in the category of second-order impact.

It is essential that second-order effects are taken into account, in order to capture the real cost-benefit picture of investing in PEGS, which in turn is essential in terms of informing proper decisionmaking in the area of PEGS development. It is also essential to show that there is a vacuum in terms of actorship in the case of PEGS development. It is typically an example of something that would benefit many people, but that would nevertheless not happen because the cost-benefit picture at the level of the existing actors (MS) is less positive than the overall cost-benefit picture for Europe (and via Europe, for its MS). In other words there is a particular public goods problem. In order to capture these effects, scientific methods are necessary (consistent with the flowchart of Undheim and Codagnone 2008 in Figure 8).

5.1.3 Defining PEGS-specific impact-assessment needs

Impact-assessment is a very broad term, covering a range of methods, fulfilling a range of objectives. In line with, among others, Heeks (2006), Weehuizen argues that PEGS impact measurement should be linked to the policy-cycle.[50] Impact-assessment has different functions and requirements in different phases of policy development and implementation. In a simplified, schematic representation of the policy process, can be distinguished: (1) problem identification and agenda-setting; (2) policy formation; (3) policy implementation; (4) policy evaluation and policy modification (see Figure 9). Before discussing how impact-assessment can support policy development for pan-European eGovernment Services (PEGS), it is useful to identify where in the policy cycle the discussion about PEGS is located at this moment. This will help to get a clearer view on

[50] In line with Heeks (2006), four stages can be distinguished: (1) for policymakers entering the awareness stage, the demand might simply be for help in understanding what PEGS are; (2) for policymakers at the agenda-setting stage, demand might come more from those seeking to encourage development of PEGS onto the policy agenda, focusing on the carrot of good news/benefits stories and the stick of poor comparative benchmark performance; (3) at the policy preparation stage, policymakers will likely demand an understanding of alternatives and priorities, comparisons with other countries and best/worst practices; (4) finally, at the evaluation stage, they may demand both comparative performance data and the reasons behind that comparative performance in order to move to learning and improved future policymaking.

how impact-assessment can be of most use in this policy domain at this point in time, and to get a more precise idea about the desired characteristics of impact-assessment. Figure 9 gives a schematic representation of the policy cycle.

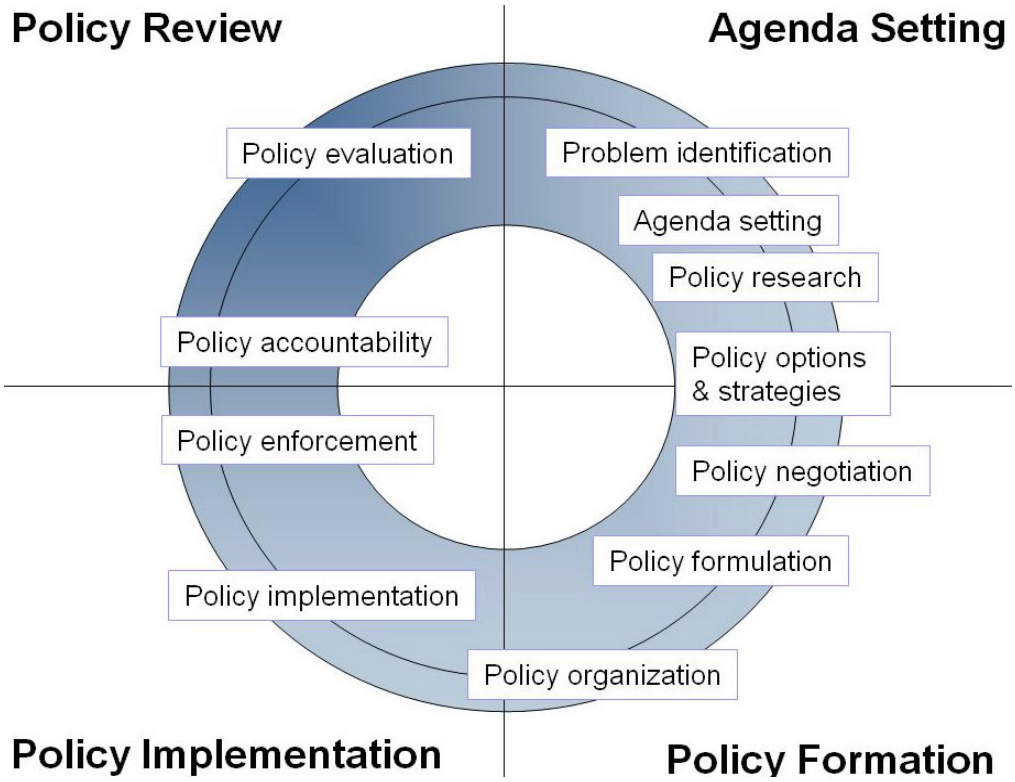


Figure 9 Schematic representation of the policy cycle

Source www.geostrategis.com

Development of PEGS has been actively supported by Member States; this is expressed in several Ministerial Declarations.[51] Thus policymaking for PEGS has to some extent gone through the phase of problem identification and agenda-setting: the first part of the policy cycle, the upper right quarter of Figure 9. This part of the cycle is, however, still incomplete; the problem is identified but poorly defined, it is not high on the agenda of MS and not even on the agenda of DG INFSO, in spite of its importance, and there is not much policy research on PEGS to date.

Roughly speaking, the problem definition so far consists of two related problems: 1) public administrations would be more effective if public services would not stop at the borders since increasingly many citizens and business do not either, and (2) all polices aimed at reaping the benefits of an integrated Europe (e.g. the Internal Market) would be more effective if there were less administrative barriers between MS. Cross-border eGovernment

[51] For a discussion of the policy basis for PEGS, see Weehuizen and Van Oranje (2007).

could help solve both these problems, given its ability to make geographical distance less relevant, and its ability to connect different institutional and oranisational structures in a flexible way respecting diversity and without necessity of harmonisation of practices.

The process of problem identification and agenda-setting is general rather than specific, it is not discussing specific barriers in specific domains, which PEGS could lower or overcome. This broadness may explain the lack of sense of importance and urgency for PEGS. Thus the phase of problem definition and agenda-setting has to be done again at the level of policy domains in which PEGS will have their function, such as research mobility (ERA), health (EHA) and justice.

However, the next question is: which instruments should be used to enable and stimulate PEGS development? Since most EU activities in the area of eGovernment are limited to OMC (open method of coordination) instruments – due to a lack of Treaty mandate – the Commission is not in a position to specify which PEGS should be developed, how, when, in what area and by whom. eGovernment is primarily a Member-State-level domain. Nevertheless, there are several ways in which the Commission can fulfil an important role in facilitating, enabling, initiating and executing PEGS (see Chapter 4). This section is intended to serve the Commission in its responsibility to stimulate PEGS development, and in this, proper impact-assessment (in which the effects of PEGS are fully captured) is both a *means* to inform the Commission's own policy decisions, as well as an *end* in itself, since it is a tool for stimulating PEGS development by other (main) actors, the MS.

In the area of PEGS, the Commission needs impact-assessment at three levels:

1. At the level of regulation for facilitating PEGS development: assessing the impact of changing, synchronising, adding or deleting regulation in certain areas in order to take away barriers to PEGS development.
2. At the level of policy instruments stimulating PEGS development: assessing the impact of policy instruments to stimulate and support the development of PEGS (in order to figure out which instrument is most effective under which conditions). In this case, impact-assessment (IA) has a function to help decide what is the best policy instrument.
3. At the level of PEGS themselves: assessing the impact of a specific proposed PEGS, in order to determine how useful a proposed PEGS is, to help improve the proposal, and to be able to compare it with other proposals for PEGS in case prioritisation and selection are necessary.

5.1.4 Adjusting the eGEP eGovermnent impact-assessment model to PEGS

The EUReGOV study reviewed a number of existing impact-assessment frameworks for eGovernment[52]. The German WiBe4.0[53] and the French MAREVA methodology [54] were evaluated, along with the European eGEP[55]. For its specific characteristics (discussed

[52] Weehuizen and Van Oranje (2007).

[53] See http://www.bit.bund.de; KBST (2004);

[54] See http://www.epractice.eu/cases/MAREVA, http://www.synergies-publiques.fr/.

[55] See http://www.egep.com/

below) and the fact that it actually takes these two existing national models into account, eGEP is the most likely candidate as a basis for a PEGS impact-assessment framework.

eGEP

The eGEP model is an impact-assessment model for eGovernment developed on request of the European Commission. There are some specific considerations that should be taken into account in the case of PEGS, which are presented in the discussion below.

Stimulating eGovernment is an area in which the European Commission has become increasingly active, as a major funding agency for research, good practice exchange and concrete projects in this area. Impact-assessment has become an important instrument as part of the Better Regulation programme. There is an increased need to show whether and under which conditions eGovernment is worthwhile, to increase the effectiveness and success rate of projects and to justify expenditure. Thus some years ago the European Commission assigned a study on impact-assessment of eGovernment, the eGovernment Economics Project (eGEP). The study, completed in February 2006, comprises an in-depth analysis of public-sector-specific value-assessment methods. Along with the objective to establish a relationship between investments in eGovernment and its impact on the economy, the other purpose of eGEP was to identify indicators for benchmarking other EU member countries against the objectives of i2010 initiative.

eGEP has taken elements of common ground found in comparative analysis of different existing impact-assessment methodologies. The eGEP Measurement Framework focuses on three different areas of impact:

1. efficiency (financial and internal organisational value)
2. effectiveness (constituency value)
3. democracy (political value), defined in terms of openness, transparency and accountability, and participation.

These are the three dimensions that any well-founded method aiming at evaluating the public value of investments in ICT should include.

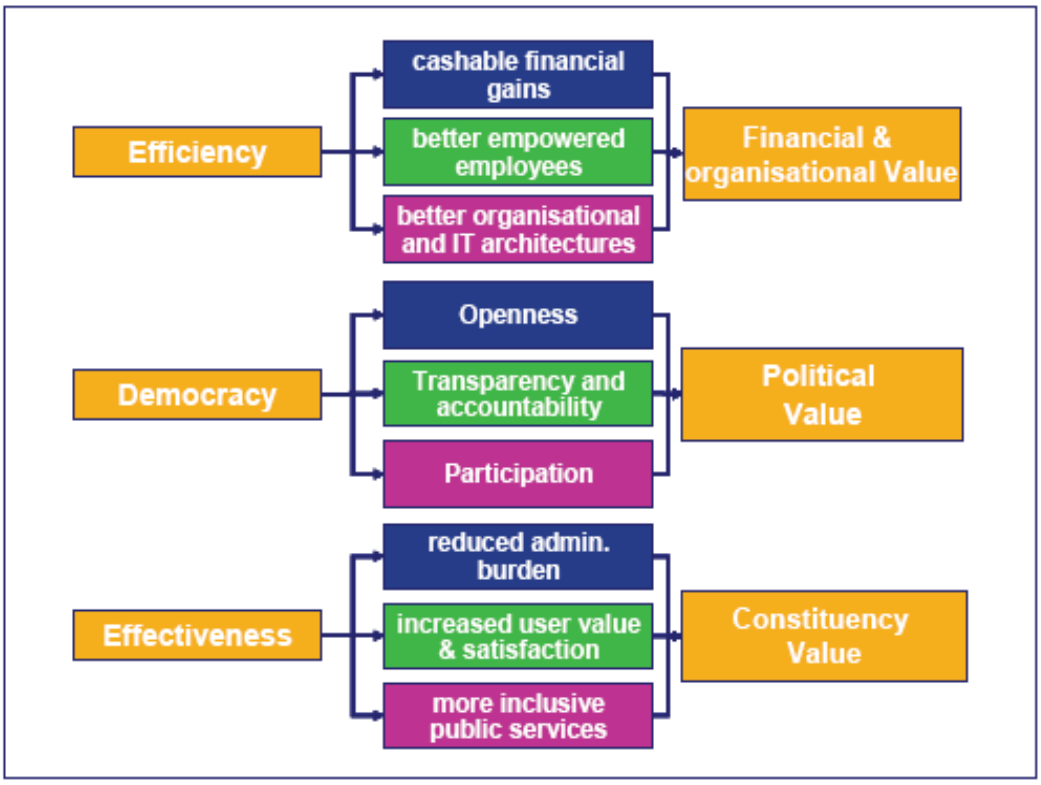


Figure 10 The three impact groups of the eGEP Measurement Model

Source: eGEP (2006a)

In the economic model eGovernment has its main effect in terms of output via its effect on labour productivity, which in turn increases the output and thereby helps achieve the outcomes in the three impact areas. The eGEP economic model asserts that eGovernment increases the labour productivity of public-sector organisations, and the improved labour productivity of the public sector in turn increases the variables in the three impact groups of the impact-assessment model of eGEP: efficiency, democracy and effectiveness. Thus, the impact-assessment of output (regardless of what the specific output is) depends crucially on the impact of an eGovernment service on the productivity of the part of the public sector providing the public service (whichever precise service this may be).

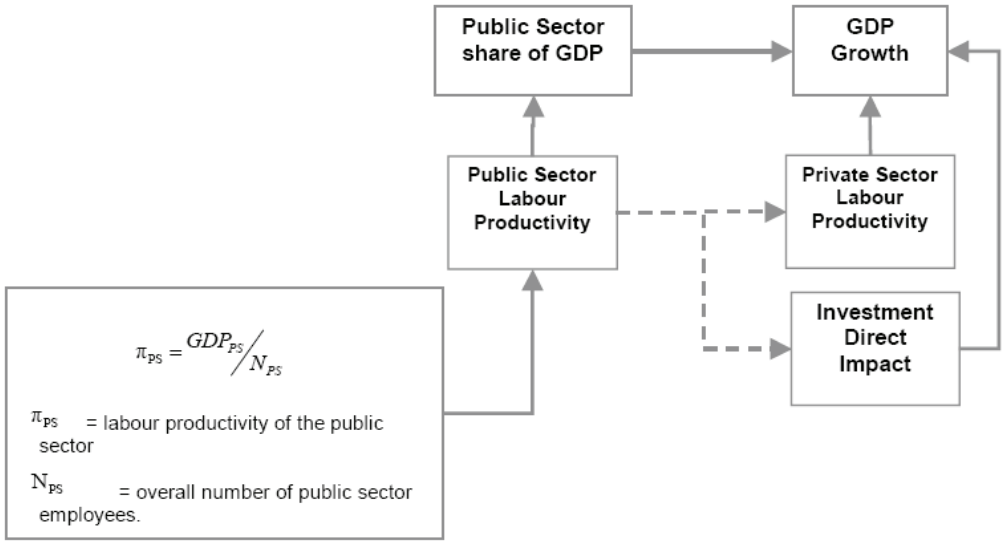


Figure 11 The economic impact of eGovernment according to the eGEP model

Source eGEP (2006a), p.10

In its economic model (as depicted in Figure 11), eGEP argues that the share of the public sector to GDP (GDPps) and the number of people employed in the public sector can be taken to be equal to the labour productivity of the public. This may be problematic, since GDPps is merely reflecting expenditure by the public sector, regardless whether the expenditure is productive. The eGEP Economic Model provides some evidence for the validity of this assumption in general terms, but acknowledges the difficulties involved.

Given the absence of a market in the public sector, the assumption that the expenditure on eGovernment is productive (in terms of efficiency and effectiveness) is critical in order to use the eGEP economic model for assessing the economic impact of eGovernment. The actual measurement of indicators identified in the eGEP Measurement Framework provides a helpful insight into the extent to which the growth of expenditure is correlated with the growth of the outputs and outcomes that are deemed to be important. The absence of the disciplining force of the market (selecting the best options through an "invisible hand") in the public sector increases the importance of a self-disciplining role of the public sector (selecting the best options based on actual impact-assessment ex ante and ex post).

In this section, we look at the channels and effects that are identified in the economic model of eGEP, to see to what extent they are relevant for cross-border and pan-European eGovernment, and to see whether other channels or effects should be added in order to truly capture the impact of this specific type of eGovernment activity.

Channels of economic impact

The eGEP Economic Model identifies three channels through which eGovernment has economic effects:

- The *growth of public-sector productivity*. Given the large share of the public in European countries' GDP, efficiency in public administrations (PAs) is an

objective per se in eGEP and a major driver of international competitiveness and economic welfare.

- The *growth of the output of the public sector*. Publicly provided goods and services contribute to welfare and are part of a country's GDP. It should be remarked that this is critically related to the first effect; growth of unproductive public sector should not be counted as growth in welfare. This is a problem that should be addressed and dealt with in improved subsequent versions of eGEP (the assumption here is that eGEP is a first version for a European IA model and will be revised).
- The increase of *the efficiency and output of the economy as a whole*. A more efficient public administration contributes directly to the efficiency of the economy as a whole and to the productivity of the private sector in particular.

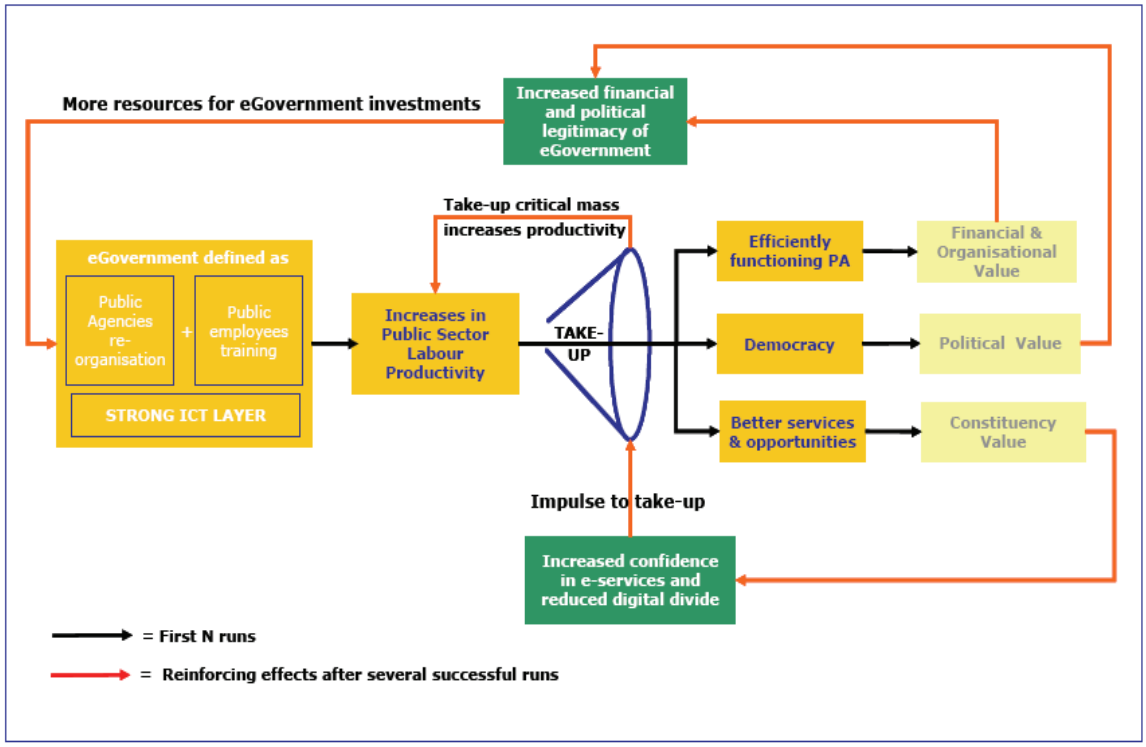


Figure 12 Outline of the eGEP Measurement Model

Source: eGEP (2006a)

These forms of economic impact primarily concern the impact of eGovernment on the national economy; for the assessment of the economic impact of pan-European eGovernment (PEGS), two more channels of economic impact should be added:

1. The deepening of the single market. Cross-border eGovernment facilitates cross-border economic activity (e.g. mobility), making it easier and less costly, thereby taking away barriers for the single market; through this it has economic impact. It is difficult to estimate to what extent cross-border eGovernment contributes to the deepening of the internal market of the EU, and even more difficult to estimate

and attribute the economic effects of this. However, existing research monitoring the progress of the single market and the realisation of its effective returns indicates that the single market has tremendous leverage of national economies and.

2. Cross-border eGovernment has leverage effects; it can leverage the impact of existing eGovernment trajectories. If a cross-border or pan-European eGovernment service increases the impact of other existing or planned eGovernment trajectories through complementarities and mutual reinforcement (the one trajectory strengthening the impact of the other and vice versa), this increases the (potential) impact of the service, and this should be taken into account. Complementarities and potential leverage effects can for example be realised in the area of Public Sector Information (PSI); leveraging the development of this potentially enormous market is an economic impact that should be taken into account. Another example of a trajectory where complementarities and leverage effects exist is eProcurement.

Additional effects

In addition to the three "eGEP channels" and the two additional "EUReGOV channels" listed above, through which eGovernment has economic impact, the eGEP model identifies five effects through which eGovernment generates increased public-sector productivity. Below they are briefly described, partly reformulated, and they are discussed in terms of their relevance for the economic impact of cross-border eGovernment:

1. *Fixed costs, lumpiness and network effects*: "Returns to scale" refers to a technical property of production that examines changes in output subsequent to a proportional change in all inputs (where all inputs increase by a constant). If output increases by that same proportional change then there are constant returns to scale. If output increases by less than that proportional change, there are decreasing returns to scale. Economies of scale exist when output increases by a greater proportion than the increase of the proportion of inputs (increasing returns to scale). One would perhaps expect that PEGS would lead to economies of scale, since in many ways it implies scaling up existing eGovernment services. However, there will tend to be a threshold, or "lump", in the cost development. The first cross-border service requires a big investment and will be relatively expensive, but as more citizens start to use the service, decreasing average costs per citizen and network effects change the picture. Increasing output within current capacity reduces the short-run cost per unit due to factors such as fixed costs and "lumpiness" of costs due, for example, to infrastructure. The more the service is used, the more useful it may become, due to network effects and learning effects resulting in increasing returns to scale. An economic assessment of the impact of PEGS thus needs to take into account an estimate of future use in order to have a more realistic idea of costs and benefits, and the future should not be "next year" but rather "in ten years". A longer time horizon is needed here, not least because of the "S-curve" which is characteristic for the penetration of new services. The time frame of this S-curve is related to a number of other processes (e.g. regulation with regard to mobility), which have a slow rate of development.

2. *Market enlargement* ("Smith effect"): A related effect is market enlargement. The eGEP model discusses the effects of market enlargement, known as the "Smith effect". Division of labour enables specialisation, which in turn enables efficiency gains (i.e. increasing returns to scale); this is a main driver of increasing labour productivity. As a market becomes larger, more specialisation and thus higher labour productivity is possible. Division of labour decreases production costs but may increase transaction costs (costs of coordination). One of the main effects of IT lies in its ability to reduce transaction costs, thus in principle enabling higher levels of division of labour and specialisation; and more flexibility in terms of the size of the market, as supply and demand can be better attuned and optimised. In the public sector there is no real market, but clearly there are economies of scale that can be realised, though they may be harder to estimate and less easy to express in monetary terms.

   As in the private sector, ICT in the public sector will in principle decrease transaction costs and increase the possibilities for achieving economies of scale, also in the case where the increase in scale involves "market enlargement" across borders. This particular form of market enlargement (across borders) has many more transaction costs than a similar market enlargement within the same country, due to costs related to different systems and different language. Thus, in order to determine the market enlargement or Smith effect for cross-border eGovernment, sufficient insight in the transaction costs is needed and in the extent to which these transaction costs can be reduced by the use of ICT.

3. *Economies of scope*: The eGEP impact-assessment model does not explicitly refer to economies of scope, but this will be briefly discussed here because eGovernment has special features that enable economies of scope to an extent that was not possible before, and capturing economies of scope may be a non-negligible part of the impact of eGovernment, and more particularly of PEGS. Economies of scale refers to efficiencies associated with increasing the scale of production of one product; economies of scope refers to efficiencies associated with increasing or decreasing the scope of, for example, marketing and distribution, of more than one (different) product. Economies of scope are among the main reasons for such marketing strategies as product bundling, product lining and branding. For example, it is often more efficient for a sales force to sell several products than to sell only one product. Costs such as travel time or the rent of points-of-sale are distributed over a greater revenue base, so cost efficiency improves. Often there are synergies or complementarities between products that make it more attractive for consumers to be offered several products rather than one, and there can be increased distribution efficiency.

   In the public sector, economies of scope also matter. For example, rather than having one location for obtaining your driving license and another for obtaining your passport, it makes sense to combine these; or, rather than having one office for unemployment benefits and another office coordinating training for the unemployed, these services may be better offered combined. The important trend in eGovernment of integrating public-service provision, offering packages of services triggered by registration of life events such as graduation, unemployment,

birth of a child etc., can be viewed as based on economies of scope. Combining services will tend to be easier to do if the delivery is electronic rather than physical, since you don't need to, for example, relocate people to a combined, bigger office. For cross-border eGovernment, economies of scope can be particularly important since these concerns services that are important for specific groups of citizens and organisations (e.g. citizens studying, working or retiring in another MS, or firms engaged in cross-border business) and bundling packages of services will often not only save costs (sharing distribution channels of the cross-border service provision) but also be of particular added value for these groups who face a number of administrative challenges at the same time.

4. *Diseconomies of scale*: One type of (negative) effect that may be more important in cross-border and pan-European eGovernment is the costs related to diseconomies of scale. The eGEP impact-assessment model discusses economies of scale, but does not give attention to diseconomies of scale.

   Causes of diseconomies of scale usually relate to the difficulties of managing a larger organisation. The one-on-one channels of communication always grow more rapidly than the number of workers, and this increases the time and costs of communication. A larger organisation is harder to monitor, it is more complex and therefore coordination between different departments and divisions becomes more difficult. A related effect is inertia; as organisations grow and more organisations are connected, it tends to be harder to implement changes, due to the increase of interests, perspectives and interdependencies.

   As well as making management less effective, thus indirectly imposing costs, the systems designed to cope with the extra complexity may also directly impose costs. The larger the scale, the longer is the path between decisionmakers and the place where these decisions have their impact, and the more chance there is of distortion of information in the feedback to decisionmakers. This means that active explicit monitoring is required, which is costly. The response time will be slower, and the decisionmaker may be less in touch with the consequences of his decisions (especially if the consequences are in another country), which can lead to poor decisions. This can cause an upward-facing (or at least less downward-facing) marginal cost curve. In the case of the public sector, there is also the democratic vacuum; decisions about cross-border eGovernment may have effects in other MS (either the ones that are involved or the ones that are not involved in the cross-border eGovernment) which are not under control of the democratic system in that MS (think about privacy laws, for example). This type of non-economic impact should be taken into account in the "democracy" pillar of the eGEP model (openness, transparency, accountability, participation). Obviously, the extent to which these potential economies of scale may occur depend on the way PEGS delivery is designed; it should be taken into account when evaluating a proposal for the development of a PEGS.

5. *Substitution effect* ("Ricardo effect"): The eGEP model describes this effect in some detail. In the private context, "Ricardo effect" shows how an increase in the spread between wages and the price of technology (machines) encourages/gives incentives

to businesses to improve their productivity, often through a substitution process between technology and employees. This effect is due, alternatively or complementarily, to an increase in wages or a decrease in the price of technology, generally because of innovation. One consequence is the existence of a time lag between when the event is recorded (number of employees replaced by technology) and when its effect becomes tangible. This is because investment in machines to replace employees does not lead to an immediate increase in productivity. The assumption is that when the cost of innovation drops against that of manpower, it may be profitable to substitute the latter. In the public sector, employees are generally less easily dismissed. The eGEP model therefore reformulated the above assumption: when the cost of innovation drops compared to that of manpower, it may be efficient to partially replace the latter and partially complement it with a wide implementation of eGovernment services. Obviously, in the case of cross-border and pan-European eGovernment services, existing intermediaries (partly public, partly private) that facilitate the administrative aspects of cross-border activity may become superfluous; thus this effect plays a role also for cross-border eGovernment.

6. *Back-office reorganisation effect*. The eGEP model draws an analogy with the private sector. Firms will undertake a reorganisation when the cost of making a product or delivering a service is disproportionately higher than its perceived value. If, for whatever reason, the product or the service cannot be discontinued, firms will be forced to reorganise production or service delivery and thus influence general productivity. Apart from the possible lack of an adequate incentive structure, from the organisational rationality point of view, this effect should be observed easily in the public sector too. The eGEP model points out that for technical estimation of this effect in the public sector, an approximate calculation will be required for the computation of the costs reorganisation.

7. *Investments in Innovation* (Schumpeter effect). The eGEP model states that innovation consists of ICT investments, but also of related aspects: consulting, training, hardware, software, etc; thus, the impact of innovations (as new innovations replace older ones) generates an increase in productivity, but only after the time lag needed to put these ancillary aspects in place.

8. *Take-up effect.* The take-up effect as described in the eGEP model is an amplifier and an enabling condition for eGovernment. Where there is an upward trend in delivery of ICT-based products and services, users should demand more ICT-based public services. This has an impact not only on the delivery channel, but also on the time of delivery. An increase in the delivery of some kinds of public services through eGSP (eGovernment Service Providers) could induce an increase in the direct or indirect efforts of the public sector to provide better and quicker services. With reference both to public-sector staff and to the entire population, some links should appear between the general level of education and the push to provide more knowledge-based services via eGovernment programmes. Thus, the more "receptive" the social environment is (because of a wide ICT diffusion, for instance, or because of a broad, deep-rooted use of eServices), the more public-sector productivity will increase. In particular, this happens for two reasons: (1)

the push towards innovation in the public sector exerted by the community (the more innovative the processes used in everyday life, the more they will be in demand), and (2) the high level of ICT literacy of civil servants, as well as of users, which boosts the use of advanced services.

The need for cost-assessment

Impact-assessment is not very meaningful without cost-assessment – clearly, when finding an impact of, say, 100, it is highly relevant to know whether the costs related to achieving this impact were 60 or 120. As the eGEP Expenditure Study (2006) observes, costs are another element of the "equation" in the assessment of eGovernment and will inform decisionmaking in this area.

Costs must be taken into account to determine the net benefits yielded by the provision of eGovernment services. Having measurable baselines for operational costs is fundamental in justifying investments. This is especially the case when it concerns innovative gain-sharing funding models in which private-sector partners are involved. For cross-border and pan-European eGovernment, a good cost-assessment system is very important, because the costs will tend to be distributed over several public (and sometimes private) organisations in different Member States.

Assessment of costs is not only needed for determining impact, but it also can be used as a measure of activity in a certain area. Making expenditure on eGovernment explicit and visible allows benchmarking, showing differences in activity between Member States and changes in activity over time in the EU as a whole. A cost or expenditure benchmark for PEGS could be very useful, because it would give insight into which MS is investing how much and in what ways in PEGS (see Chapter 6 on benchmarking indicators). Measuring PEGS expenditure over a number of years can help to demonstrate whether policy aimed at stimulating PEGS development has been effective, and to see where policy should be strengthened or changed.

The eGEP model gives a detailed overview of the different types of costs involved in acquiring and implementing ICT applications for eGovernment, specifying 21 different cost categories. These categories are valid as a checklist for any eGovernment cost estimation, also for cross-border eGovernment. In Figure 13, a schematic presentation of the eGEP cost categories is given.

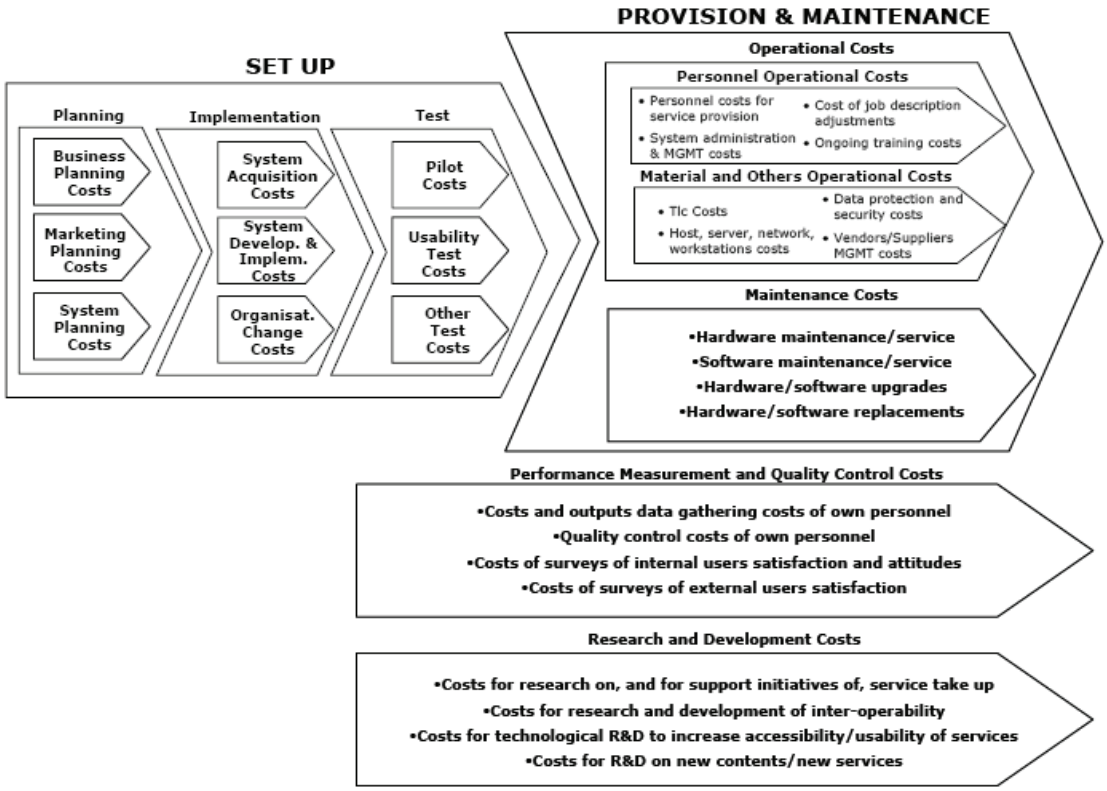


Figure 13 Cost model of the eGEP Expenditure Study

Source: eGEP (2006b)

It is difficult to estimate this expenditure since much of the activity on cross-border and pan-European eGovernment may not be recorded separately as such. The only real data on PEGS comes from the ePractice database. Diederen and Glott (2008) mention that out of the 924 cases at that moment on the ePractice website, 10 have "pan-European" as their country label, 11 have "European institution" as their country label, 32 have the term "pan-European" in their case description, and 19 had "cross-border" in their case description. These cases are largely the same set, so it would appear that there are at the most 32 cases of the 924 cases that can be counted as in some way having a cross-border or pan-European function, and 21 that can be counted as specifically having this function. This means that of the cases on the ePractice site, about 2 percent can count as cross-border or pan-European. There is a bias in the selection of ePractice for such cases given the nature and the purpose of the site, and much of the less innovative but massive activity in the area of eGovernment is not reflected in the ePractice database. Thus while it is hard to estimate what the percentage is of expenditure on cross-border or pan-European eGovernment as part of all eGovernment expenditure, we can be very sure that it is much less than 2 percent.

We need this information to gain insight into the current activity in the area of PEGS, to see which MS are most active, and to see whether there is an increase in activity. One recommendation of this report is thus to measure expenditure on cross-border and pan-

European eGovernment as a separate category in benchmark and cost studies, in order to help this category of eGovernment services to become a real object for policymaking.

Intangible costs

Costs are often equalled to expenditure. However, this is misleading. Expenditure generally relates to concrete identifiable expenses, while costs is a much broader category. The eGEP Expenditure Study (2006) describes what is called the "intangible costs" associated with investment in ICT. Changes in business processes, organisational structures, human resource training, innovation in supply chain and customer relationship management are crucial complementary inputs required to fully realise and leverage the potential of IT investments. In fact, these "intangible costs" of the redesigning of tasks, jobs, business processes, etc. represent the bulk of the total costs, they are many times higher than the direct costs of an IT application. For example, MIT economist Brynjolfsson and his colleagues estimated that "organisational capital investment" is up to ten times as large as the direct investments in hardware formally recorded and capitalised in firm accounting systems (Brynjolfsson, 2003).

The eGEP study proposes a micro-level simplified "rule of thumb" practical guideline for the main cost components and their breakdown to be considered over an average five-year perspective for a relatively large eGovernment project (Figure 1**Error! Reference source not found.**4). The eGEP study estimates that the intangible cost of organisational change for eGovernment in 2004 is up to €4 billion, and thus would lead to a total figure of €16 billion for EU25.

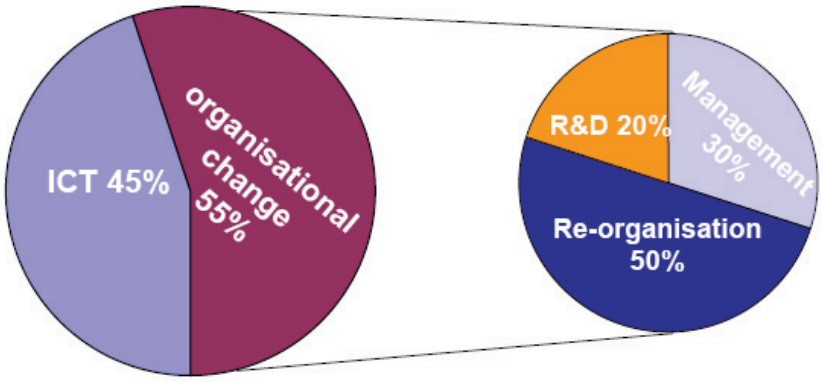


Figure 14 The 'rule of thumb' for cost-breakdown

Source eGEP (2006b)

In the case of cross-border eGovernment, the ratio between tangible and intangible costs, or between ICT costs and organisational change, may be higher than the respective 55 percent of the rule of thumb of the eGEP cost model. The costs of in some way connecting organisational processes of different public-sector organisations with different legal frameworks, different languages and different cultural habits can be expected to be many times higher than the direct costs of the system of doing so, more so than in the case of

eGovernment applications at a national scale. Thus, when using the eGEP cost-assessment tools, the ratio for estimating intangible costs should be different. Different solutions for cross-border and pan-European eGovernment services can have very different intangible costs; for example, creating a portal structure will require much less organisational change and may often turn out to be most cost-effective. Thus, when assessing proposals for eGovernment projects with a cross-border dimension, particular attention should be paid to these 'intangibles'.

Though eGEP is identified as best in class when it comes to detailed impact-assessment of eGovernment and as such is suggested as the basis of a revised model for assessing the impacts of PEGS, its level granularity also presents limitations – especially in the case of ex ante assessments for policymaking purposes. For these cases we suggest another approach discussed in the next section.

5.1.5 Ex ante impact-assessment of PEGS: I =(m)PA(c)T[56]

As has been indicated above, an important function of impact-assessment is to support decisionmaking – for example, to help select and prioritise potential PEGS within a certain policy domain. In order to be useful for decisionmaking, a certain degree of simplification may be advisable. Cave and Simmons (2007) argue that many existing tools for impact measurement or estimation (such as the eGEP Measurement Framework) tend to produce measurements that operate at too great a level of granularity and do not serve very well in terms of ex ante decision-support tools. This problem arises because the criteria on which measurements are made are disparate and thus not always comparable with one another. The risk of this is that even the best detailed technical tools tend to become little more than the means of *ex post* rationalisation of decisions made by personal preference (Cave and Simmons 2007). There is thus a need for a simpler ex ante impact-assessment technique, not necessarily of great accuracy but better suited for use in early stage decisionmaking (i.e. to operate prior to the eventual use of those more detailed tools such as the eGEP Measurement Framework which are more appropriate when operated ex post).

For the purpose of ex ante assessment, Cave and Simmons (2007) propose to build on the tool generally used in the area of sustainable development, the IPAT model, which consists of a simple equation I = PxAxT; Impact = People x Activity x Time[57]. Cave and Simmons point out that the IPAT model has proved to be of great heuristic value in unpacking impact issues, and seems likely, therefore, to offer the potential for correspondingly valuable insights in unpacking the meaning of impact in pan-European eGovernment[58].

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[56] Taken from: Cave and Simmons (2007).

[57] In the long period (30 years plus) during which I PAT has been in use it has had many changes and variants. For example, in another version, I stands for Impact, P for People, A for affluence and T for Technology (Roca, 2002).

[58] Though Cave and Simmons (2007) plead for a simple useable impact-assessment tool, they warn to keep in mind that it involves simplification. The I PAT framework identifies domains for separate analysis, but is not intended to assert that the domains themselves are separate.58 In terms of numbers, the point is simply that some population groups are more 'impact-relevant' than others – for instance, a service available to all may be particularly important or essential to only a particular sub-group. Similarly, a service can be used for various

However, it is important to point out that the expression is intended as a "dominant relations" model or "master equation". In other words, the linearity should not be taken literally, but rather as an expression of the conceptual separation of key drivers of impact. The units in which components are measured and second-order relationships among them will result from further "drilling down" for example into the operational meaning of "Activity".

IPAT is expanded and reinterpreted as a device for *ex ante* evaluation of PEGS initiatives in their broader socio-political context. While further development and implementation remain to be done, the broad shape involves I=mPAcT, where:

m = mobility, mutability and modifiability to fit other contexts and needs

P = population affected in terms of numbers, distribution, representativeness, and inclusion of disadvantaged groups

A = activity and attention; combining activity with salience along the lines illustrated above. The concrete implementation is to identify types of impact and associated channels. For each channel impact will depend on the activities of key decisionmakers. These pay attention to a range of affected groups (beneficiaries and victims). The overall score is obtained by assessing, for each group, a banded (e.g. high, medium, low) score for the attention paid by the decisionmaker to their interests. It is worth noting that this complexity is essential. First, the responses of decisionmakers will clearly have an effect on implementation, dissemination, etc. Second, the interests of other groups beyond those who use the service may be of overriding importance. Finally, those affected may have their own possible activities that can mitigate or complement the impact of the new service.

c= complementarity with other services and modes of engagement and convergence

T= timing, comprising frequency, duration (sustainability) and the (positive or negative) lag relative to other public- and private-sector developments

The functional form of the relationship is understood to be explicitly non-linear. It is probably most useful to consider I PAT as a starting point for development[59]. The spirit, if not the mathematical form of different ways of combining P, A and T should be actively considered when employing the framework. For instance, there is relatively little ambiguity in dismissing projects whose impact components are "Pareto-dominated" by those of other projects (i.e. where a different activity or approach offers better P, A *and* T). This can often be established (e.g. by Delphi or other qualitative techniques) even in the absence of agreed quantification. Beyond this, there may be some areas where trade-offs are possible (suggesting a continuous way of combining P, A and T, such as a weighted average or

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activities (e.g. taxes, registrations, obtaining information, etc.) that are not all of equal importance. Finally, some 'windows' in time may be particularly important. These considerations should, however, influence the (P) way IPAT is used, rather than whether or not it is used. For further detail on the IPAT model for ex ante assessment of cross-border eGovernment, see Cave and Simmons (2007) at www.euregov.eu.

[59] Waggoner and Ausubel (2002) do just this. Although this is in quite different circumstances, their mode of procedure (in which they take full and imaginative advantage of the heuristic aspects of I PAT without allowing themselves to be hampered by unduly tight definitions of the terms) is highly relevant and their paper makes a good introduction to the topic.

product) and others where impact depends on the "weakest-link" (min{P, A, T}) or "best-effort" (max{P, A, T}) principle.

Before applying an impact-assessment framework, interventions in support of pan-European eGovernment services for citizens should prove to have a policy relevance and an innovation potential. In addition, they should have a coherent dissemination and exploitation plan directed towards the broader eGovernment community. Without such potential for uptake and dissemination there is little value in attempting to roll out the PEGS. Thus a PEGS should in any case fulfil the following criteria, even before applying I=mPAcT:

- Those eServices offering the likelihood of generating subsequent transformation should be prioritised.
- Pan-European-ness should be understood as the wide (rather than universal) applicability of broadly comparable (rather than identical) services.
- Pilots or exemplars should have the potential to be applied in many states or regions by the application of only limited localisation efforts.
- Clear evidence of the intended implementation of one or more dissemination/diffusion mechanism(s) compatible with pan-European deployment should be mandatory in supported activities.
- Evidence of (as data permit) dissemination activities, awareness, relevance, and "third-party" uptake should be used to create explicit selection criteria.

Candidates for intervention which clear all of the above hurdles should be eligible for impact-assessment. Prioritisation should then be reviewed in the wider contexts of the "portfolio" of activities within a particular domain and of the "programme" of activities within the whole field of pan-European eGovernment services for citizens. Together with the PAT factors these preliminary assessment criteria can be combined to capture a notion of ex ante 'impact', for which an initial matrix of criteria can be developed, as in the table below (see Table 4).

Table 4 A Step-Wise Approach to Decisions about Support

Policy basis	Does the proposed service further some element of EU policy?
Innovation	Is the class of innovation proposed of a type to produce beneficial transformation? Is it just noise? Or is it likely to produce significant costs offsetting any potential impact?
Pan-European diffusion potential	Does the proposed activity contain within it the needed potential for diffusion or dissemination (by membership or by resource provision) sufficient to fulfil pan-European potential?
Population	Number? Multiplier for adaptation potential? Multiplier for pan-European potential?
Intensity of Activity	How will it contribute to its specific policy domain?
Time	Instances of use e.g. #/per annum (or intrusion into consciousness) Reducer for Habituation

Source: Cave and Simmons 2007

5.2 Benchmarking PEGS[60]

A second class of measurement tools was required by the European Commission, in order to monitor and compare the performance of Member States and the Commission in developing PEGS. In order to allow measurement for benchmarking purposes two composite indicators where designed; PEGS accessibility and PEGS readiness.

As the OECD observes, eGovernment is "a tool to achieve better government. The aim of eGovernment at the broadest level is better government by enabling better policy outcomes, higher-quality services, greater engagement with citizens and by improving other key outputs identified" (OECD, p.12). Thus, eGovernment is not an end in itself, and neither are pan-European eGovernment services (PEGS). It is important to gain more insight into what goals PEGS should serve, so that in turn we gain a better understanding of the function of PEGS, and how to best stimulate PEGS development with policy: which areas PEGS can have most impact on, which actors can best be targeted and which key enablers should be in place in order to realistically expect PEGS development to take off.

Pan-European eGovernment services (PEGS) in the strict sense of the term are digitally provided public services that are provided at a pan-European scale. An exploratory quick-scan of existing PEGS in the Good Practice framework of the European Commission conducted under the EUReGOV project indicated that there are (very) few fully-fledged PEGS beyond services provided by or facilitated by the EC (largely information services). This is not surprising; it is an area that is still very much in development, and although there may not be many PEGS currently in the strict, narrow sense of the word, there are a growing number of services provided by a variety of actors at different levels (local, regional, national) that have a cross-border dimension, effectively contributing to the development of a European-scale public administrative space.

When developing a European dimension of public service provision, the challenge is to recognise and maintain the value of the diversity of MS public administrations, respecting the principle of subsidiarity and the importance of democratic legitimacy, while at the same time reducing the costs deriving from this diversity. eGovernment has unique qualities to achieve just that, by drastically reducing the constraints of geographical distance on public-service provision, and by enabling relatively low-cost interoperability between heterogeneous actors (public administrations at the local, regional and national level) with different institutional set-ups.

The reason for developing a European dimension to public-service provision is to reduce unproductive administrative barriers that are costly to MS and their mobile citizens and hamper desired cross-border activity between Member States. PEGS are important but by no means the exclusive carriers of this process of pan-Europeanisation of public-service provision. Not all services should be available at a fully pan-European scale, provided by all

[60] The detail on benchmarking PEGS and indicator design is given in: Weehuizen and van Oranje (2007) Pan-European eGovernment Services (PEGS) in perspective: function, forms, actors, areas, pathways and indicators. (DG INFSO)

Member States to all EU citizens. Also the development of a cross-border dimension of any kind of eGovernment service (e.g. bilateral, multi-lateral, intercity, interregional) contributes to the goals of 'Europeanisation' of eGovernment.

The challenge is to reach an optimal not a maximal level of pan-European eGovernment. The level considered optimal will change over time, and policy aimed at increasing the pan-European dimension of eGovernment should be designed in such as way that those areas and groups are stimulated for which this dimension is most important – not least because of scarcity of means (time, effort, money) to realise this. This means that prioritising is key in the area of PEGS, and this prioritisation should be based on sound, informed insights about needs of citizens (demand) and technical and institutional possibilities of public administrations (supply). It is important to be pragmatic and realistic, and to target policy towards those areas that have the best cost-benefit ration (in the broad sense of the word). In this document, a number of areas are put forward in which PEGS development makes most sense at this point of time, and in which PEGS development is not only most useful but also most realistic, in terms of the incentives for PEGS development of relevant actors such as MS.

5.2.1 Defining PEGS for benchmarking purposes

Given the considerations discussed above, the following definition is proposed (see Chapter 2):

Pan-European eGovernment services (PEGS) are digitally provided public-sector services that significantly contribute to creating a pan-European dimension of public administration.

This is a short, broad definition of PEGS which gives room to emerging properties of PEGS and captures the process of moving towards the development of an optimal pan-European dimension of public administration, which is the real phenomenon of relevance, PEGS being important carriers of this.

The term "significantly" refers to the impact of a service on pan-Europeanisation of public administration. This in turn depends on how much it contributes to the realisation of a number of policy objectives requiring a certain degree of Europeanisation of public service provision. PEGS contribute to the pan-European dimension of public administration when they facilitate cross-border activity in the EU in the broad sense of the word, i.e. anything that enables and facilitates (further) the mobility of citizens and businesses.

Broadening the definition to allow inclusion of more forms of cross-border dimension of eGovernment services has the advantage of capturing the heterogeneity of developments that contribute to pan-Europeanisation of eGovernment. We can then track the emerging pan-European properties of eGovernment services and get a more complete picture of the state of play and the possible points for policy intervention.

The definition above is a general definition of PEGS. In this project, the focus is on PEGS for citizens (G2C); thus eGovernment services for businesses (G2B) are not taken into account. eGovernment services provided by public administrations to each other (G2G) are in themselves not taken into account primarily, but it will often be the case that G2C PEGS require G2G PEGS.

5.2.2 PEGS Composite Indicators for Accessibility and Readiness

In order to get some basic information on the pan-European dimension of eGovernment in Europe, certain indicators (see Box 4) are needed that capture the relevant features of PEGS development as described in the sections above.

Box 4 Defining the nature, use and value of indicators

> An indicator is "something that provides a clue to a matter of larger significance or makes perceptible a trend or phenomenon that is not immediately detectable" (Hammond *et al.*, 1995). An indicator's main defining characteristics are that it quantifies and simplifies information in a manner that promotes the understanding of a phenomenon, to both decisionmakers and the public. Above all, an indicator must be practical and realistic, given the many constraints faced by those implementing and monitoring projects. In terms of practical execution, the challenge is to find a compromise between scientific accuracy and the information obtainable at a reasonable cost. In terms of policy usefulness, the challenge is to find the right balance in the trade-off between the level of detail on the one hand and easiness of interpretation and communication on the other hand.

The information for the PEGS indicator should be relatively easy to collect within the framework and methodology of the existing benchmarking study. A brief description of the methodology of the benchmarking study is first given below.

To capture the different elements which together give information about the pan-European dimension of eGovernment service provision, a composite indicator is needed (see Text box 5).

Box 5 Defining the nature, use and value of composite indicators

> A composite indicator is a mathematical combination (or aggregation, as it is termed) of a set of indicators. Composite indicators are based on sub-indicators that have no common meaningful unit of measurement and there is no obvious way of weighting these sub-indicators. A composite indicator is formed when individual indicators are compiled into a single index on the basis of an underlying model. The composite indicator should ideally measure multi-dimensional concepts which cannot be captured by a single indicator alone, *e.g.*, competitiveness, industrialisation, sustainability, single market integration, knowledge-based society, etc (Nardo et al., 2005).

Since the PEGS indicator(s) should fit within the overall method of eGovernment benchmarking, it should be possible to collect the information alongside the information that is now collected through the website assessment method. A sound theoretical framework is the starting point in constructing (composite) indicators.[61] The framework should clearly define the phenomenon to be measured and its sub-components and select individual indicators that reflect the dimensions of the overall composite. It is best to start with a few relatively easy-to-collect items, to get a rough overview of what is happening in the area of PEGS in Europe and the EU Member States. In combination with more in-depth insights gathered in case studies, in a next phase further data collection can be targeted at more specific areas that show up as most interesting.

The indicators chosen reflect 'readiness' and 'accessibility' at MS level and we also suggest an indicator for centrally organised and provided PEGS (i.e. by the Commission). These indicators are only proxies of what we are after (level of pan-European-ness of eGovernment) but they are obviously not precise in capturing this. The indicators are chosen partly on practical grounds: they build on existing policy trajectories, and they are reasonably easy to collect at a large scale (27 MS). The outcome of the data-collection will be simplified by being translated into categories. The quality of calculations based on empirical data is as good as the precision and quality of the data itself. To carry out highly sophisticated calculations in order to determine a composite indicator – while the data itself is necessarily rough and precision has to some extent already been compromised by categorisation – is thus not useful. What matters is to achieve sufficient comparability between services and between Member States, in order to make general statements about the state of play in the area of pan-European eGovernment. The scores on each indicator should be normalised in the most appropriate way for that particular indicator.

PEGS-readiness indicator assessing MS engagement with key enablers

The area of PEGS is still very much in development and takes different forms, dynamics and pathways. Nonetheless, however diverse the landscape of PEGS development may be, one certainty is that the presence of key enablers is a condition *sine qua non*. The extent to which Member States can be expected to develop the pan-European dimension to their

[61] Nardo *et al.* (2005).

eGovernment service can thus to some extent be predicted by the necessary (though not sufficient) condition of the presence of key enablers for PEGS.

The two main key enablers identified in the i2020 Action Plan have been described:

1. European interoperability (as expressed by the application of the European Interoperability Framework, EIF)
2. electronic identity management (of persons, organisations, signatures and documents, by some sort of eIDM system)

In addition, there is a third factor reflecting readiness and the probability of PEGS development:

3. political will to develop PEGS

A fourth set of pre-conditions at national level could be taken from Figure 6 in Chapter 4.2.1. But, as these are also captured in other indicators and by their volume and diversity would over-complicate the PE-readiness indicator, it has been decided to stick to the three conditions listed above.

By evaluating the presence of the three main conditions for PEGS development in a Member State, the presence of political awareness and will, and of the key enablers EIF and eIDM, insights can be gained into the readiness of a MS for PEGS development, and this can be compared between MS and over time.

Thus an important element for an indicator reflecting how a Member State scores in terms of the pan-European dimension of eGovernment (PE-score) is the evaluation of:

- MS policy awareness of and political will to develop PEGS *(PAW score*) as expressed by their mentioning it in MS eGovernment strategies
- MS awareness of and concern about European interoperability as expressed by their mentioning of and use of the European Interoperability Framework in MS eGovernment policy strategy and implementation (*EIF score*)
- MS awareness of and application of (interoperable, secure) electronic identity management (eIDM), as expressed by their mentioning of and use of (some form of) eIDM in MS eGovernment policy strategy and implementation (*eIDM score*)

The way to measure this is to look at national eGovernment strategies (generally available online, these can be identified via the existing network of MS contact persons for the current benchmarking study) and see to what extent these elements are mentioned and in what ways.

Box 6 Calculating the PE_RE Indicator (Readiness)

For PAW, EIF and eIDM the following scores can be taken:

0 = not mentioned at all

1 = mentioned in a general sense

2 = mentioned in a concrete sense (e.g. plans for implementation)

3 = concretely implemented in a significant way

The first part of the PE-score for a MS is thus a score on Readiness, which looks like:

PE_RE = (PAW +EIF + eIDM)/3

If it is decided that these factors should not have equal weighting because one factor may be considered more essential than the other, then the weighting can be adjusted by, for example, adding terms λ, ρ, σ ($\lambda+\rho+\sigma=1$) and adjusting weights by multiplication with terms.

$$\text{PE\_RE at MS level} = \lambda(\text{PAW}) + \rho(\text{EIF}) + \sigma(\text{eIDM})$$

with $\lambda+\rho+\sigma=1$

PEGS indicator at MS level for accessibility

Besides finding out to what extent MS have the conditions in place for PEGS development, it would be informative to get some idea about the current state of the pan-European dimension of MS eGovernment services. A central feature of this is the accessibility of public eGovernment services of Member States by citizens of other Member States, thus enabling citizen mobility. A first, crucial requirement for this is that a citizen can understand the information and other options provided by a service, which means that the service needs to be provided in a language that citizens from other Member States understand.

The information about whether an eGovernment service is provided in languages other than the Member State language is relatively easy to collect in the present benchmarking. Thus we propose taking availability in another language as a proxy for the pan-European dimension of a service. By the same token, we propose taking the number of languages in which a service is offered as an indicator for cross-border accessibility of that service and as an indicator for the service having a pan-European dimension.

Box 7 Calculating the PE_AC Indicator (Accessibility)

The PE-score of the interface of a digitally provided service, equals the number of non-MS languages (L) in which the service is provided:

0 = only the MS language, and no other

1 = the MS language and 1–3 other languages (often English, French and/or German)

2 = more than 3 other languages

3 = all official languages of the EU

It is proposed to distinguish three "weights" for the degree of provision of the service (AP) in one or more other languages:

1 = all information and options are available in other language(s)

¾ = much (but not all) information and options are available in other languages

½ = only limited information is provided in other languages, but sufficient to know what the service is about and whom to contact for more information

In order to capture the level of sophistication of online availability of a service we suggest including a score for:

1 = not fully online

2 = fully online (including interaction and transaction possibility)

The PE-AC score for an individual service would then look like this:

Languages (L) x degree of Actual Provision of the service in other language(s) (AP) x degree of Online Availability = L x AP x OA

The current method for dealing with local and regional providers and multiple providers can be used also for including these providers into the MS PE-AC score.

PE_AC score at MS level = MS(LxAPxOA)

Including a weight for impact (service level)

In terms of impact, it matters not only how much of a service is available online (OA) but also what kind of service it is that is provided; some services are more important and have more impact than others. For example, it may be more important to citizens to be able to do their taxes electronically than to renew their drivering licence electronically, since the former needs to be done much more frequently and is more complex. In other words, it is important to get some idea of the weight of a particular service with a PE component, in order to be able to make a more justifiable (though inevitably still rough) comparison between the scores of different service areas and different Member States.

As was put forward in Chapter 1, PEGS are first and foremost expected to contribute to three policy areas: (1) free movement of citizens, (2) implementation of the Services directive and (3) reduction of administrative burden. The reason for this is twofold: (a) these are closely related to the effects of PEGS (enabling cross-border activity while reducing administrative burden associated with it), and (b) these are the policy areas with pressing incentives in place in terms of commitments of Member States and favourable cost-benefit ratios for Member States. In order to give some weight to the PEGS score

reflecting impact, it would be desirable to measure what has most impact in terms of these three policy areas. However, that is not easy to do in a simple way. We propose taking a proxy by looking at what current mobile citizens find most important, assuming that this reflects the degree to which certain services would help these citizens to reduce the costs and effort of their mobility, which would be an indication of impact on all three policy areas mentioned above.

We propose adding to the composite indicator at MS level a weight for impact (I) by multiplying with the percentage of perceived usefulness that is associated with a service from a certain service cluster, as is done in the European eGovernment benchmarking studies, establishing a percentage through surveys and expert interviews. In order to reduce the importance of this weight for impact, the range of the percentages (21–62 percent) may be narrowed, converting the percentages into important (= 1) and less important (= ¾).

$$\text{PE\_AC score at service level} = [\alpha\ (L \times AP \times OA) + \beta\ (R)] \times I$$

The PE-Accessibility score (PE_AC) in combination with the PE-readiness score (PE_RE) described earlier, together form the PE score in general for a MS. This can be used to get an idea of how different Member States are doing in terms of adding a pan-European dimension to their eGovernment provision, compared to other MS and compared over time.

Box 8 The composite PE indicator at MS

The composite PE indicator at MS

PE overall score at MS level =

PE_RE + PE_AC =

$$[\lambda(PAW) + \rho(EIF) + \sigma(eIDM)] + \{MS\ [\alpha\ (L \times AP \times OA) + \beta\ (R)] \times I\}$$

PEGS indicator at the European level

For a comprehensive assessment of the PEGS landscape, centrally provided PEGS should also be measured to identify the Commission's activity in this area. We suggest measuring how many pan-European eGovernment services provided by European-level actors there are. For each service, we suggest determining its score in terms of:

- language provision
- sophistication of online availability.

For the latter, the existing indicator for eGovernment can be used and applied to European-level service providers.

Box 9 An indicator for centrally delivered PEGS

An indicator for centrally delivered PEGS

nPE = Number of PEGS provided by European-level actors

Language (L):

2 = provision in all MS languages

1= provision in only a few languages (1–4)

Online availability (OA):

2= fully available online

1 = not fully available online

European level PEGS indicator:

Number of European-level PEGS (nPE) x number of Languages (L) x Online Availability (OA)

As in the case of the MS PEGS indicator, it is possible to include the impact score (I)

EU PEGS score = I x (nPE x L x OA)

This indicator is of intertemporal nature, meaning that it will be informative only when it is collected over a number of years, enabling monitoring of progress in terms of increased provision of PEGS by European level actors.

5.2.3 Applying the indicators

The indicators proposed for the MS level allow benchmarking, comparing different MS. Since it is impossible to quantify and compare the degree to which a certain aspect contributes to pan-European eGovernment in a meaningful way, the composite variable will be expressed in terms of ranking and of categorical scales (such as "levels", "classes" or "stages").

Categorical scale assigns a score for each indicator. Categories can be numerical, such as one, two or three stars, or qualitative, such as "fully achieved", "partly achieved" or "not achieved". Often, the scores are based on the percentiles of the distribution of the indicator across countries. For example, in the present eGovernment benchmarking study there is a stages model, and different stages have equal weight in terms of a percentage. This can be done also for the composite indicator on pan-European eGovernment: the scores on the different items can be added and together form a percentage.

Once the value of the composite indicator for PE has been calculated based on the categorised sub-indicators, the scores for different MS on this PE indicator can be ranked. Ranking is the simplest normalisation technique. This method is not affected by outliers and allows the performance of countries to be followed over time in terms of relative positions (rankings). Country performance in absolute terms, however, cannot be evaluated when using ranking, as information on levels are lost. Since there always will be the disaggregate list of categorical scores on sub-indicators, the absolute change in performance of MS can be calculated with these.

As the OECD Handbook (Nardo *et al.*, 2005) points out, when used in a benchmarking framework, weights can have a significant effect on a composite indicator and on country rankings based on this composite. A number of weighting techniques exist; some are derived from statistical models such as factor analysis, others from participatory methods such as budget allocation and conjoint analysis. No matter which method is used, weights are essentially value judgments. While some analysts might choose weights based only on statistical methods, others might prefer focus groups or expert opinion on weights to better reflect policy priorities or complex factors. In many cases, participatory methods that incorporate various stakeholders – experts, citizens and policymakers – are more fit to assign weights when the weighting is not clear-cut. In this, again, different methods can be used, such as the "budget allocation approach" in which consulted stakeholders have to divide a limited number of budget points over different (sub)indicators to express their importance.

Most composite indicators rely on equal weighting – all variables are given the same weight. This could mean that all variables are "worth" the same in the composite, but also it could mean that there is no clear way to give differential weights. If variables are grouped into components and those further aggregated into the composite, then applying equal weighting to the variables may imply an unequal weighting of the component (the components grouping the larger number of variables will have higher weight). This could result in an unbalanced structure of the composite index, unless this is corrected in some way.

Imagine a service – service A – is really important to people and has a potential user group of 10,000 mobile citizens, while another service – service B – which is considered half as important has a potential user group of 20,000. Service B, which is considered half as important, should have half the impact of service A; but since its (potential) use is higher than the use of A, the impact score of B should be increased to be more than half of A's impact score. How much more is something that needs to be determined in a next phase, when it has become clear which information is actually available and when it is decided what to include and what not.

Minimising the number of variables in the index may be desirable on other grounds such as transparency and parsimony. However, as the OECD Handbook points out, there will almost always be some positive correlation between different measures of the same aggregate. Thus, a threshold should be determined beyond which the correlation is a symptom of double counting. However, here we are interested in capturing different emerging properties of pan-European eGovernment to give a state of play and to monitor progress, and less so in establishing possible causal relations for a certain level of progress through statistical means. Thus although a high correlation between different indicators may suggest redundancy, it can nevertheless be important to maintain the correlated indicators. For example, a MS scoring high in providing services in different languages may also score high on explicit policy awareness about PEGS, EIF and eIDM, and these two scores are not unrelated.

Aggregation methods vary. While the linear aggregation method is useful when all sub-indicators have the same measurement unit, geometric aggregations are better suited if non-comparable sub-indicators are expressed in different ratio-scales.

Impact-assessment and benchmarking are only two of a full range of policy measures that the Commission can deploy in support of PEGS development. The following chapter intends to provide a comprehensive overview of the available policy options.

CHAPTER 6 Policy instruments of the Commission

After reviewing existing PEGS and suggesting ways to measure PEGS' impacts and benchmark Member States' performance, this chapter reviews the wide range of policy instruments that the Commission has at its disposal. It suggests different levels of engagement in the various relevant domains of PEGS development to strengthen the positive supporting role of the European Commission.

6.1 Dynamic context

The current role of the Commission in this area is based on the i2010 Programme and the eGovernment Action Plan which states: "While most of the challenges are at national or sub-national level, the European Commission adds value in providing support to all five objectives of this Action plan with two types of activities: measurement and sharing [of experience and good practice]" […] "Providing relevant information, quantifying, benchmarking, measuring and comparing impact and benefit is essential" (EC 2006, p.6).

The interest in PEGS of Member State policymakers and of eGovernment practitioners is growing. The PEGS eCommunity on the ePractice.eu site keeps track of news, events and new cases in the area of PEGS, and each month more PEGS-related news and cases emerge. The Swedish EU presidency in the second half of 2009 has made PEGS one of the top three priorities for the eGovernment agenda. As European cooperation and integration deepens in all policy areas, the awareness of (administrative) barriers to this cooperation and integration is increasing, simply because feeling those barriers in practice makes actors more aware of them. In addition, the policy area itself is becoming more mature; PEGS (or more in general the need of cross-border cooperation of public services in Europe) have been on policy agendas for several years now and are gaining momentum as an instrument for strengthening the internal market and providing better services to the citizens of the EU. As the needs of citizens change, so should public service provision to these citizens. Consequently, the discussion is becoming richer, more sophisticated, visionary and future-oriented.

6.2 A Portfolio of policy actions

In going forward we suggest that the Commission takes a more pro-active role, as was explicitly expressed by key stakeholders in the various workshops and case studies.

Also, PEGS are a European public good, suffering from a coordination failure (or "inverse subsidiarity failure"). Many of the positive externalities at the European level are not taken into account by national operators. This has been widely discussed in the previous chapter. There is no other public actor better placed than the Commission to drive and support PEGS. The Commission's potential for delivering positive contributions to PEGS spans the whole policy spectrum. Therefore a portfolio approach geared towards removing barriers and stimulating PEGS development is the most likely to yield results. **Error! Reference source not found.**5 provides an overview of suggested policy approaches and interventions in support of PEGS. It must be said that this project did not prioritise or calculate the cost of the various activities and will thus remain at the level of presenting concrete ideas, with some further considerations on how to operationalise these.

All the possible Commission actions must be seen against the background of the European Commission's mandate and the applicability of potential policy tools. The most appropriate form of intervention will depend on factors such as:

- the type of service (e.g. healthcare, law enforcement, etc.)
- the phase of development (preparatory research, improving national building blocks, enabling infrastructures, development of business plan, the design of delivery mechanisms, implementation of services)
- the degree of collaboration (harmonisation, centralisation, federation, or best-practice exchange) appropriate to each different type of actionable activity needed to achieve the desired service.

For example, for the European Commission to support the delivery of PEGS for customs, it might be appropriate to consider regulation, since having a harmonised PEGS for customs would contribute towards wider EU objectives for growth. For those PEGS linking with private-sector systems, some of the more regulatory "lighter touch" tools might be more appropriate in order to provide a positive environment for private-sector participation. For healthcare, for example, the chosen intervention might be along the lines of market stimulation – inspiring or engaging the insurance industry. In yet other areas, R&D would be the most obvious approach.

The possible interventions are categorised in a simple matrix. The top row presents the possible roles of the Commission in order of weight/invasiveness of intervention, described as:

1. Facilitating
2. Enabling
3. Initiating
4. Executing

The first column represents the various categories of interventions:

1. Political/strategic
2. Financial
3. Technical
4. Organisational
5. Legal

To simplify the matrix we cluster the roles of the Commission in those where the Commission is in charge (Initiating and Executing) and those where the Commission puts other actors in the driver seat.

Table 5 The suggested roles of the European Commission, emphasising DG INFSO's central position

Political		
Facilitating/Enabling	**Initiating/Executing**	**Objective**
○ Identify with other DGs the relevant potential areas for PEGS ○ Mobility (work, education) ○ eJustice ○ eHealth ○ (Assessing/measuring of ex ante impacts) Identify potential High-Impact (future) PEGS with DGs across the EC ○ Support open standards[62] in government (in public procurement, communications, statements, etc) ○ Organise conferences, publications ○ Articulate change by emphasising and communicating the need for putting in place critical national building blocks (see Securegov Final Report[63]) ○ Assess the need for different levels of intervention at pan-European level (e.g. harmonisation of legislation or further support programmes)	○ Draft Communications in specific policy areas, identified as High Impact (DG INFSO acting as initiator and broker, facilitating and cooperating with thematically relevant DGs) ○ Deploy marketing/dissemination of the idea of PEGS and the relevance for integration in Europe, e.g. via publications, ministerial declarations, PEGS awards	○ Provide a political framework and point of reference at EU level ○ Clearly state EU value added and provide political mandate for initiatives (bottom-up and top-down)

[62] As defined in IDABC (2004).

[63] Robinson *et al.* (2008).

Financial		
Facilitating/Enabling	**Initiating/Executing**	**Objective**
○ Provide seed funding or "EU public venture capital", possibly in cooperation with the EIF. A modified eTEN programme should be considered, to allow support for bottom-up initiatives ○ Provide funding for research (open calls for proposal)	○ Offer sustained financing from the EC budget in support of Commission-based PEGS, such as SOLVIT, TAXUD, SIS II, VIS, etc. ○ Fund active learning and dissemination of lessons about these services relevant to all actors who are developing PEGS ○ Provide financing of sTESTA network and all related activity under the direct responsibility of the Commission ○ Continue CIP PSP ICT pilots for addressing specific bottlenecks, which have the potential to open up a broad field of applications (eSignature, eDocs, eIDM) ○ Use CIP ICT PSP pilots also for developing services that are desirable from an EU policy perspective and which would otherwise not be developed (CCAFIS, traveller exit-entry system, eJustice, eProcurement, European Student exchange and education portal, etc.) ○ Consider pre-competitive procurement as a lever to bridge the gap between RTD and ICT deployment	○ Ensure that good projects (bottom-up) manage to go from plan to piloting, and possibly from pilot to full PEGS ○ Put sustainable funding in place for critical supporting infrastructure and central EU services

Technical		
○ **Facilitating/Enabling**	○ **Initiating/Executing**	○ **Objective**
○ Ensure maximum use of open standards through public procurement rules and leading by example ○ Where needed support the development and adoption of (open) specific standards for service provision, technical but also organisational (templates, procedures) and terminology, such as a European eID framework and the European Interoperability Framework – together with organisations like ETSI ○ Support Thematic Networks in specific application areas ○ Monitor PEGS, especially the CIP large-scale pilots, and identify technical problems and solutions ○ Actively engage industry in these processes ○ Research (with ENISA) the resilience issues around a more networked EU service delivery framework ○ Keep ahead of technical change (e.g. role of biometrics, RFID, Internet of Things) through research and ensure this is translated to the eGovernment domain, through interaction with industry, implementors and the research community ○ Ensure sufficient bandwidth is available	○ Develop the technical capabilities needed for the Commission to run a PEGS (see point under “organisation”: DG DIGIT as centre of excellence) ○ Ensure continuous upgrading of sTESTA	○ Accumulate technical expertise at the EC and disseminate it ○ Coordinate and initiate where common standards are needed and promote the use of global open standards ○ Ensure a brokerage role between stakeholders, especially by involving industry

Organisational		
Facilitating/Enabling	**Initiating/Executing**	**Objective**
○ ePractice.eu “plus”: Improve good practice exchange mechanisms; better more modular input; supply tools for experimentation; create more transparent market place; actively support the marketing of good practice and training through courses, handbooks, roadmaps, modules; gather knowledge of technical, legal, organisational, and HR issues, as well as project-management, business model development and financing, marketing, etc in a knowledge base. ○ Support the creation of a PEGS community in which practitioners from the public and the private sector and policymakers from different MS can identify each other, learn from each other and if possible can start to cooperate to develop a PEGS ‘mix- and-match’ facility ○ INFSO to actively coordinate with DGs of the relevant policy areas together to facilitate the development of a PEGS (such as in the area of eJustice) ○ Apply benchmarking of the information assurance maturity of the Member States, as a way to expose the complex risks that would need to be assessed and managed prior to PEGS deployment ○ Provide relevant information, quantifying, benchmarking, measuring and comparing impact and benefit is essential	○ Develop a management and governance structure suitable for centrally-run PEGS. Include front and back office functions (Regulatory Agency, DG DIGIT or DG INFSO) ○ Build an EU centre of excellence, possibly in DG DIGIT – taking into account development of large-scale information systems in the field of justice and home affairs too ○ Set up Interoperability Committee to identify and deal with all cross-border IO issues, and mandated to organise targeted events to discuss and address IO ○ Create a “PEGS incubation space”, based on a “high risk-high return” rationale where good ideas can be developed as sandbox pilots, allowing trial and error. This “sandbox” environment would encourage the development of a broad range of approaches to delivery of PEGS applications depending upon the specific characteristics of services (education, health, border control, immigration etc)	○ Remove organisational barriers by sharing knowledge ○ Make cross-border delivery easier by creating “plug an play” type pplications ○ Ensure that available knowledge is packaged in a way that supply is better aligned with demand ○ Create a facility that enables marketing of good local practice and active knowledge transfer through training

Legal		
Facilitating/Enabling	**Initiating/Executing**	**Objective**

○ Stimulate changes in laws in MS which make, for example, sharing of information legal	○ Provide a legal basis for a Commission-led PEGS, including ways for the citizen's (cross-border) redress and legal proceedings
	○ Set rules to ensure better protection and tradability of intellectual property rights (IPR) on eService architectures
	○ Update EU regulatory framework in areas of:
	  ○ data protection
	  ○ procurement
	  ○ re-use of public information
	○ Have EU-wide instruments to combat fragmentation: eSignatures, eDocs , eIDM and authentication
	○ For new legislative acts by the EU, include ICT (and interoperability) impacts in regular impact-assessment
		○ Facilitate convergence of national regulatory contexts
		○ Ensure that EU legislation is conducive to PEGS development rather than a barrier

6.3 Detailed descriptions of policy interventions and tools

A more detailed description follows of the suggestions raised above, without being fully comprehensive. The focus will be on the policy initiatives that can be considered most worthwhile in terms of feasibility and potential impacts.

6.3.1 Political/strategic

Political support at EU level is cited by all cases as crucial. It can take the form of a communication, green paper, ministerial declaration, or presidency conclusions. It is important because:

- It provides a political framework and rationale to establish or to strengthen cooperation between agencies from different MS in specific policy areas
- It serves as an argument to request funding from the national budget or to allocate resources to develop cross-border applications on top of existing regular national services
- It links a PEGS initiative to the policy agenda of the Commission and thus creates relationships that are important for the development and sustained management of the PEGS
- It allows the Commission to prioritise resources to support these initiatives
- Finally, PEGS provide a linking mechanism for various policy areas related to the Lisbon and i2010 Agendas

The political support through Communications and Green papers needs to be specific to a policy domain, for example cross-border healthcare, or cross-border mobility of researchers to help the ERA, or the pan-European market for mortgages, or directives such as the Services directive. Thus what is required is not support for PEGS in general but domain-specific initiatives developed in close cooperation with the DG of that policy area (DG SANCO, DG Research, DG JLS etc).

Beyond facilitating bottom-up developments, the strategic leadership of the Commission ensures that PEGS are placed in the wider context of EU policymaking and European integration. This is especially relevant in the "policy linkage" aspect emphasised in relation to Lisbon Agenda/i2010 thinking. In particular, PEGS development interacts with regulation, support measures (RTD, economic development, structural funds and deployment), standards (as an EC activity, as well as a regulatory concern), service delivery and international negotiations, etc. These need to be coordinated in order to produce best effect. While PEGS are not on the same level as i2010 macro objectives, PEGS considerations should form part of the framework for managing cross-policy linkage; conversely (and perhaps more easily graspable by policymakers) PEGS themselves provide a key element of the policy coordination framework in relation to Lisbon Agenda targets. Thus PEGS are not only an "end" following from joined-up government, but also a means to achieve this linkage at the European level.

6.3.2 Financial

PEGS have different funding needs across their development cycle, much like any service or business for that matter. Seed funding could in principle come from the regular budgets of the participating agencies (e.g. public-sector organisations at the national or local level); however these are rarely sufficient, because in practice the remits of most public authorities in the MS are national and their budgets will usually be allocated to local priorities and programmes because that is their primary mission and because the costs and benefits are much more clearly aligned at that level. Also, any investment in a cross-border service may not deliver a clear payback to the PA in question – or may only do so after considerable delay. The real payback of PEGS is to Europe as a whole (and through this to its Member States, which benefit from being part of a better functioning Europe), and in particular the mobile citizens. Thus the combination of a lack of allocated funds and a poor (perceived) ROI means that incentives for PEGS are low, that there is little incentive at the level of those organisations to allocate budget to PEGS, and that funding may be difficult to mobilise in the start-up phase (see 4.2).

Therefore the EC can play a very useful and appropriate role – as it used to with eTEN – to kick-start the initial development and piloting of cross-border applications. Not only is there a clear European-level value added to this activity, but there is no other actor that would take up this role, except for the European Investment Fund which could combine efforts and expertise with the EC. This may require developing new modalities of support and engagement that provide incentives, diminish risks and pull together a wide range of initiatives, participants, etc. These could involve equity and debt stakes (instead of simply grants) or underwriting the creation of suitable financial structures if direct investment violates state aid rules. They could also make use of adapted forms of partnership models used in the private investment sector (e.g. business angels, private equity, public joint ventures destined for flotation, incubators, etc.). An underexplored source of funding are

the structural and cohesion funds, which may work in close cooperation with DG INFSO to support local cross-border and regional initiatives.

Case-owners (both public and private) that were consulted in this study stressed the importance of seed funding, but also underlined that EC funding is not a healthy or sustainable source for longer-term funding of PEGS. Dependency on EC funding must be avoided to ensure financial sustainability and to avoid distortion; the presence of funding may elicit projects that are not sufficiently need-based. Once the service is rolled out it should be self-financed through revenues generated by the service itself and/or funding from national budgets from the partner countries involved in the PEGS. Thus it is imperative to work with good partners from the private and public sector. Hence a robust business plan is an essential element of the PEGS. Also, the investment of "own money" is important, because this communicates belief in the undertaking, it creates a sense of "ownership", and it signals a real need for this service. All these factors are of crucial importance for the success of a PEGS.

In a recent evaluation of the eTEN programme (part of the on-going eTEN final evaluation 2007–2009) a survey of a wide selection of stakeholders showed that particularly in the area of increasing access to funding and improving business models eTEN played an important role (see Text box 10).

Box 10 eTEN final evaluation survey of impacts

There was broad agreement on the beneficial impacts of eTEN participation:

Business models

- 69 percent cited better access to new (to them) business models through partnership
- 54 percent cited development (in the project) of new business models
- 74 percent identified business model innovations
- 53 percent said that participation helped them identify unsuitable models

Funding

- 54 percent said eTEN directly helped them find finance
- 74 percent said eTEN enabled them (through matured solutions, networking, etc.) to attract further finance
- 46 percent said that on balance funding helped
- 32 percent said that the advantages were outweighed by drawbacks

General impacts

- 57 percent said the project would not have proceeded without eTEN support
- About half said that the projects helped them leverage capital for development (48 percent) or deployment (45 percent); about
- 80 percent said the project helped by building acceptance and momentum among potential users.

- 41 percent cited improvements made possible by financial support as the primary channel by which benefits were developed.

The EC also provides more sustained (multi-annual repeat) financing through dedicated budget lines. This can only be justified for centrally run PEGS like SOLVIT and TAXUD services and for the underlying infrastructures, sTESTA in particular, which are have a clear legal base. It is suggested that at least some money of these budgets is reserved to measure, monitor and study these PEGS to allow the EC to learn from the experience and to disseminate this to the wider community of public authorities considering the development of PEGS. To what extent there may be a rationale for more sustained financial support from the Community budget for bottom-up PEGS to overcome the "inverse subsidiarity failure" which was identified in the previous chapter needs to be reviewed.

Furthermore, the EC makes funding available through the research programmes to deal with specific issues in the underlying fabric of PEGS: technological requirements, (e.g. interfaces, open standards) socio-economic factors, security and privacy concerns. By combining directive, strategic and curiosity-driven (but applied) calls, funding could be used more strategically to support the development of PEGS. Furthermore, FP and ERC calls could be targeted more towards PEGS-relevant issues and provide input into targeting and structuring decisions.

Where the bottlenecks to service delivery are further downstream – particularly in implementation – the EC has developed the Type A and B pilots as specific funding instruments. These are expected to be useful top-down tools – if applied well – to address concrete issues that can only be solved by trial and error. They depend on the presence of clearly defined objectives and sufficiently enthusiastic MS to commit to the pilots. It is too early to assess their effectiveness and impact, but it can be noted that a significant number of MS have joined these pilots and are actively engaged in developing interoperable European solutions. These pilots may also be used to develop new applications that may eventually evolve into central PEGS, e.g. the Common Criminal AFIS (fingerprint database, with matching capabilities), and other large databases considered by other DGs (such as DG JLS).

In addition to the pilots A and B, there is a demand for a space for PEGS experimentation at a less applied, more upstream level. In concrete terms this could be addressed by the provision of test beds for new ideas, and the institution of a new kind of application-driven "Pilot C". This "sandbox" environment would have a more exploratory rationale than the existing pilots, and would encourage the development of less obvious, more "outside-the-box" approaches to the delivery of PEGS applications, depending upon the specific characteristics of services (education, health, border control, immigration, etc.). Participation would be limited to a small number of pioneer-countries, aiming at making the application work on a smaller scale before expanding to full a PEGS. Participation and funding would be conditional to a minimum interoperability level (set deliberately low to encourage participation), based on globally adopted standards – possibly adjusted to serve

the European context. Lessons learned about the delivery of particular applications should be fed back into directed pilots A and B.

Box 11 Sandbox pilot

The sandbox pilot differs from existing CIP pilots A and B, as it would operate on a "join-in" basis. This would be achieved by the publication of a number of standards (including security and interoperability) to which participants would have to ensure their systems could conform. These standards might be devised and owned by an externally competent body such as ENISA. Participants would then be able to interact in a bilateral, multilateral or pan-European manner. A feedback loop would be provided by an external observatory or monitoring function, but unlike that of the directed pilot, this would have no "teeth" or mandate to force decisions; rather it would be there simply to report the findings of the interaction between Member States. Thus reporting and monitoring functions would be softer and more on the basis of the identification of good practice, or where interactions went well or poorly between Member States. The collection and dissemination of the results of these interactions and experimental tests would take place via a specific study or piece of research that could be conducted at the end of the pilot.

In order to provide feedback from the sandbox pilot to the directed pilot, the European Commission would need to be kept informed as to how lessons identified from one pilot are impacting upon the progress of the other. As it is expected that the European Commission would play a significant role in the directed pilot (in terms of acting as an external management authority, as was the case with SEPA), it is reasonable to expect that the observatory function of the sandbox pilot would report regularly to the European Commission, perhaps at three or six monthly intervals (depending on the duration of the pilot).

Finally, a critically important issue to understand is that, due to the fact that pilots are highly monitored and observed (being precursors to fully developed policy implementations), there is a risk that the act of monitoring and evaluating them may change their outcomes. Because a pilot (which has been under close evaluation) has been successful does not mean to say that the full-blown policy implementation will be similarly successful. All too often, assumptions are made that this will be the case, to great financial and sometimes ministerial or governmental cost. So, how should we diminish this risk?

Source: RAND, Securegov final report 2008

It is important to also include "pre-commercial procurement" (PCP) as a funding instrument to support the gap between ICT RTD and deployment. The basic idea is that RTD support works at the level of ideas, and CIP/eTEN both work on the market deployment of proven technologies and solutions, but the "funding gap" in between is left for private markets. That model is appropriate when venture capital markets are thick, especially in relation to services intended for the private market where such private development investment is both available and preferable to public support that might distort markets. For PEGS, however, these conditions are not present, and the kinds of

multi-participant, knowledge-sharing modalities being developed for PCP are very appropriate.

Box 12 Commission's own view of Pre-Commercial Procurement

> Pre-commercial procurement is an approach for procuring R&D services which enables public procurers to:
>
> a) share the risks and benefits of designing, prototyping and testing new products and services with the suppliers, without involving State aid
>
> b) create the optimum conditions for wide commercialisation and take-up of R&D results through standardisation and/or publication
>
> c) pool the efforts of several procurers
>
> Source: European Commission, 2007d [64]

6.3.3 Technical

Interoperability of public ICT infrastructures is essential in building a more service-oriented and efficient public sector. The importance of interoperability is amplified in the case of cross-border and pan-European service delivery due to the additional complexity of linking up different national IT systems. Technical support by the Commission for cross-border interoperability may be best achieved by focussing on the area of the development, adoption and use of open standards. These are platform-independent and vendor-neutral standards (Undheim 2008).[65] To be considered "open" they should be developed in a transparent and collaborative process, be available for free or at a nominal cost and be able to be implemented royalty-free – in particular regarding software interoperability standards – or at reasonable cost.

Open standards are a public good, presenting a number of important benefits, such as enabling innovation, preparing the ground for better products, spreading new technology, expanding market access, boosting transparency, avoiding lock-in, creating market stability and ensuring efficiency and economic growth.[66] Furthermore, open standards have demonstrable impact on the software ecosystem. A recent empirical study of best practice in eGovernment mentions the use of open standards among its top seven recommendations for success.[67]

There is an issue of regional specificity that needs to be taken into account. Whilst global standards are essential for wide adoption, some Europe-specific issues should also be taken into consideration reflecting the innovations and methods used by European firms and/or reflecting European views of interoperability, security, resilience, effectiveness, etc. The point is that the trade-offs among standards and their requirements might be different in Europe than elsewhere.

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[64] (COM(2007)799 final - 14 December 2007)

[65] Calling a standard "open" makes a clear distinction against so-called "closed", "de facto" or "proprietary" standards which may favour a single vendor or a small group of vendors only.

[66] Blind (2004).

[67] Undheim (2008).

How to achieve this is a different issue. Closing up Europe and attempting to develop EU-specific standards does not seem the best way for gaining wide acceptance and linking in Europe with global developments. A more productive approach is likely to be building coalitions with global standard-setting bodies to adjust global, open standards to take account of European stakeholder concerns and interests.

The European Commission is aware of the importance of open standards and has for some time advocated their use for enabling software interoperability[68]. The 2004 IDABC Decision is very explicit in stating the benefits of open standards for PEGS: *"It is essential to maximise the use of standards or publicly available specifications or open specifications for information exchange and service integration to ensure seamless interoperability and thereby increasing the benefits of pan-European eGovernment services and the underlying trans-European telematic networks."* The IDABC EIF 2.0 Communication recommends open standards across EU. Stimulating the awareness and implementation of the EIF 2.0 at the national and local level will be the next big challenge.

However, there are few specific policy activities in place to follow up the Commission's advocacy for open standards and interoperability, except some initiatives in cross-border situations under the IDABC programmes. As Undheim recalls, the Commission's internal IT programme, eCommission, is hardly aware of the importance of open standards, presenting a missed opportunity for the Commission to lead by example. More should be done to facilitate the engagement between EC entities and standardisation bodies, or between EC-funded projects (or their participants) and such bodies. The use of open standards should be included in PEGS procurements and deployment. The definition of specific European needs within open global standards development could be made an explicit objective in PEGS-related activities (ranging from innovative deployments and pilots to RTD support aimed at PEGS).

The plethora of standards, models, specifications, meta-languages and frameworks presents a real risk of drowning practitioners in the total number of alternative and possibly incompatible approaches, leading to a loss of opportunity for cross-border coordination. It would be desirable to set up a PE "knowledge centre" on key interoperability issues, such as identity management, and "virtual middleware". This knowledge centre would support the various different systems across Europe to interconnect by indicating or referencing which technical middleware would be appropriate to allow different eIDM systems to interconnect. ENISA could be mandated for this role, or a revamped interoperability observatory.

6.3.4 **Organisational**

In organisational support there are two main, related areas of potential EC input and relevance:

1. effective and sophisticated good practice exchange, i.e. "ePractice+"
2. the EC leading as a centre of excellence

[68] For instance, the i2010 strategy (2005)15 , the i2010 Mid-term review16 (2008) and the IDABC Decision (2004)

Good practice exchange: The role of the EC could go much further than benchmarking eGovernment or simply providing an information space for eGovernment practitioners to upload cases and exchange ideas. In the EUReGOV workshop "Re-inventing the Wheel", the mechanisms of good practice exchange were discussed in detail.

Transfer of eServices, practices and solutions commonly poses challenges in terms of:

- finding financial resources for *marketing* and providing *training* to allow the transfer to take place
- dealing with *intellectual property* issues (rewarding designers and developers)
- organising *governance and maintenance* once the service is rolled out
- the "*not-invented-here* syndrome"
- *language barriers*: transfer requires translation of content; most public institutions usually lack the means to translate the software and to adapt it to their own requirements
- *incompatible national systems* of service provision: transfer requires adaptation to local conditions and procedures and to national legal frameworks. National systems of service provision have their country-specific features and routines.[69] However, there may be a tendency to exaggerate these system incompatibilities (playing into the "not-invented-here-syndrome"), as the underlying platform and software can relatively easily be adapted to specific needs in other countries. The assumption that the systems are too country specific, hinders adoption by others.
- *Lock-in*: there is a degree of path dependency in the development of eServices in different countries, both of a technological and an organisational nature. When a public authority has already purchased a portal, the adoption of a best practice might involve high switching cost. The tendency to be risk averse tends to overshadow the drive to go for the best long term deal[70].
- *Lack of incentives*: Public sector developers of innovative eService solutions have no interest in spreading these solutions to other public authorities, other than professional pride or public spirit, and therefore lack an incentive to invest in diffusion. In general, they do not have a marketing budget and do not invest in marketing skills.

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[69] Country-specific features that make transnational transfer of eGovernment services difficult exist even at the very basic level of definitions. For instance, what constitutes a "father" or "marriage" differs across countries. In particular, some countries recognise same-sex marriage, whereas others do not. Marriage is a legal concept that has numerous legal consequences, related to social security entitlements, pensions, inheritance, health benefits, tax payments, rights to adopt and raise children, hospital visitation rights and sick leave. These country-specific legal consequences have to be translated into country specific eService instruments (see Oostveen and Van den Besselaar, 2001).

[70] Cowan (1991) describes this process as "competition between technologies of unknown merit". Lock-in into an inferior technology may occur because experience that is gained by using the technology increases the payoffs of that technology relative to competing technologies and reduces uncertainties as to its performance. The need to overcome the lock-in effect might require intervention by a central authority that provides incentives for making the switch.

- *Organisational Interoperability:* One important obstacle concerns the interoperability of technology and procedures. Procedures for transactions are not unique and a process of standardisation is often required before a new transaction can be added. Since procedures and standards often vary among regions and countries, policies are called for to minimise these differences at an early stage of the development process[71].

The issues listed above can be dealt with through a number of solutions:

Choosing for flexible design and modular architecture; in the case of e@SY Connects. Its modular architecture makes it more flexible and allows partial transfer of the system rather than all-or-nothing.

To ensure interoperability between modules, common standards and interfaces are required. Some form of central direction is needed to take care of this. In order to avoid technological lock-in, it is also useful to make use of open standards as much as possible. Both e@SY Connects and HELP pursued this strategy, thereby providing freedom to choose what hardware platform, operating system and database system to use.

Actively using the private actors involved in the systems and software design to sell and market effective solutions

Common development and financing of a general service delivery infrastructure; Transferability would be helped enormously if a generic common hard- and software infrastructure could be developed, to be used by service providers in different Member States to fill with their own content. This could be provided by the European Commission. In this way the European Commission could support the diffusion and implementation of best practices in eGovernment and give it a pan-European perspective. An alternative would be to have a national eService provider in one of the Member States develop the infrastructure and introduce a form of licensing. Another alternative would be to involve a private party in the role of infrastructure provider.[72]

Better protection and tradability of intellectual property rights (IPR) on eService architectures and more involvement of private-sector service providers in the transfer of good practices. Transfer of good practice is enhanced if developers of eService solutions have an incentive to promote diffusion. This requires that IPR on eService architectures is sufficiently protected to make it tradable and licensable and that there are profit-oriented eService developers that see development and marketing of instruments for eServices as an attractive business opportunity. Profit orientation is a characteristic of private-sector actors.

The ePractice portal with its >14000 members is a potentially powerful base to build from; however, it must be made more user-friendly, by providing instruments that are closer to

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[71] Consider for example the system of signatures that is used to certify and secure transactions. Because the high stakes in terms of security and privacy, most countries develop their own system for electronic identification which are often dependent on local requirements, technical standards as well as legislation. Though Article 8 of the Services Directive provides a legal obligation to overcome this obstacle, the technical problems related to eIdentities must be solved efficiently in order to achieve this goal.

[72] This involves technical interventions but is listed here to allow a description of a comprehensive approach to good practice exchange

the practitioners' needs. In support of a better focus on PEGS, the EUReGOV team made the following concrete suggestions, as listed in **Error! Reference source not found.**13.

Box 13 Suggested improvements to ePractice to better capture and support PEGS[73]

Create a community around PEGS (similar to those created around eProcurment and eHealth) focused on Europeanisation of eGovernment. This community , should have a general introduction, and address two central themes:

1. What can Europe do for eGovernment? (examples might include: share best practices, eg via ePractice.eu; increase quality and relevance of input; case-owner blogs, posting of relevant documentation)
2. What can eGovernment do for Europe? (examples might include: implementing the Services Directive; increasing mobility; reducing the administrative burden)

The community would underline the importance of the European dimension to eGovernment (for example in the areas of mobility, the Services Directive and administrative burden reduction) and refer to relevant documents and resources, and case examples.

Evaluate the content of cases in ePractice. The cases should be described in more detail and have "recipe book" characteristics, providing detailed "recipes" for developing the case elsewhere. This will improve the quality of content for case-holders. Initial assessment and review of content should:

- complete information (most case-owners don't fill in all fields)
- define what the distinguishing characteristics of the case are compared to similar cases
- avoid non-meaningful language
- add technical information: e.g. source code freely available, platform, open standards, clear modules/ building block being used, if yes what modules?
- facilitate semantic interoperability by providing e.g. code, documentation about language, choice of life events)
- determine what the organisational requirements are
- predict expected difficulties in implementation
- add additional documentation
- identify the partners in the development
- provide financial information e.g. costs, investment, benefits/ cost savings
- give examples of diffusion/ experience with practice transfer
- supply updated contact information

Subsequent assessment should include a full evaluation of the pan-European level of ePractice.eu; Applying the criteria developed in EUReGOV to ePractice intake of PEGS cases. Challenges that need to be addressed:

- Reduce and structure the (oversupply of) information;
- Improve the ability of individuals to quickly filter out relevant information
- Apply a ranking to cases ensure that they remain meaningful for practitioners. The rating system should be set up to also be used as a filter
- Remove 'ghost cases', cases which are outdated and cases that are not perceived as

[73] Suggested in January-March 2008, recent changes to ePractice have not been taken into account

valuable by ePractice visitors.

- Support the creation and further development of thematic networks in ePractice.eu, not only eHealth, eInclusion, eGovernment, but also for example ePortals, eTaxes, eCadastres etc. One case should be able to be part of more of these domains.
- Increasing the scope and use of communities (more prominent, central place for all information regarding a certain topic/ domain (news, blogs, events, cases).

Centre of Excellence: In the process of developing and managing SIS II, VIS, Eurodac, sTESTA and TAXUD systems (as well as the eDriving licence and eEHIC), the Commission is building up a great deal of knowledge about how to build, organise, manage, govern, and deliver PEGS – even if most of these are not directed specifically at the citizen. This knowledge should be captured to enable active learning at the Commission, and also to allow spreading of this knowledge among other practitioners working to set up cross-border services. The obvious actor for this would be DG DIGIT, if it is allowed to expand further into becoming a centre of excellence for delivering ICT services (including those) outside the direct context of the EU institutions. Developments in DG JLS around the management of large-scale databases (SIS II, VIS, Eurodac) and the possible founding of a regulatory agency for this purpose should also be taken into account.

We suggest expanding the role of the Commission as centre of excellence to incorporate a new function, building in part on its experience in developing the EIF. Namely, we suggest that the Commission should consider setting up an *Interoperability forum or observatory*; alternatively, it could expand the current eGovernment observatory (http://ipsaportal.unina.it/?p=288), which is run by IDABC, and possibly to merge it with ePractice and Semantic Interoperability Centre (SEMIC)[74]. This merged forum should facilitate active consulting instead of just passive listing of cases, events and information. The character of the services would be more like SOLVIT than the current observatory and ePractice sites. Practitioners with experience in developing interoperable cross-border solutions should be supported – with limited financial resources – to provide training to others. Also, if interoperability problems arose, the specific case-owners would be able to ask for advice from a network of experts. Moreover, as issues are identified that fall outside the realm of the specific services (such as legal barriers) the forum or observatory would be the place to lodge a complaint, signal problems and so forth, for the Commission to address. Finally the forum/observatory would oversee the implementation of the EIF 2.0 and support its visibility and use.

This centre of excellence role could also take up the current duties of the Commission in quantifying, benchmarking, measuring and comparing impact and benefit. This helps to identify good performance and learning opportunities. Measurement of impacts would support the general argumentation to set up and provide PEGS, and help allocate funds to those with the highest potential impact. In 4.2, measurement of PEGS is explicitly

[74] See http://www.semic.eu/semic/

discussed. Here we suggest different approaches for detailed (mostly ex-post) impact-assessment (i.e. enhanced eGEP) and more general (mostly ex-ante) impact-assessment methodology (i.e. the I=(m)PA(c)T framework), which can be applied as a heuristic for political purposes and decisions on budget allocation.

6.3.5 Legal

The Commission as purveyor of the right of initiative for Community Law is responsible for creating and guarding the internal market. PEGS can become an important means to address the current (de facto) barriers to cross-border economic activity.

PEGS should be introduced into the debate about how to share information and how much/which information should be shared. In this regard, the different roles and responsibilities of government officers and partner-PEGS-providers – ranging from technology suppliers to outsourced service providers – need to be clarified, and the balance between technological safeguards and legal protections needs to be revisited – the point here being that PEGS are not the same as analogous private eServices in relation to, for example, statutory obligations. When considering the enabling measures, it is probably worth recording that economic regulation (for example, the revised telecom regulatory framework) can have a powerful effect in opening up PEGS.

The Commission may review the legal arrangements that are required for establishing PEGS; e.g. legally binding eSignatures; acceptance of certified eDocuments across the EU; and having in place eIDM systems and all flanking regulatory guarantees to make these work in practice.

Privacy, trust and security are domains that continuously rank high among the main enablers (if they are achieved), and potential barriers (if they fail). Thus one of the legal actions that should be considered is the revision of the Data Protection Framework to better protect against abuses of privacy resulting from "mission creep" by stakeholders not directly associated with the delivery of PEGS, and instituting better ex-ante legal measures for the improvement of security. In addition, such a revision may address the need for cleaning up databases by removing obsolete data. Concrete examples for action might be:

- a push for greater emphasis on responsibilities for privacy in the review of the Electronic Communication Framework
- drafting proposals for legislative efforts on the back of the Strategy for Secure Information Society (e.g. via the creation of breach notification laws)
- greater emphasis on inclusion of consideration of privacy in the legal aspects of impact-assessments.

Finally, given the importance of legislation and legislative action at EU level, developments need to be monitored to determine the need for harmonisation of legislation at the European level. Whether this is limited to the specific challenges unique to PEGS (e.g. the creation of a legislative framework for the provision of appropriate mechanisms to deal with the security challenges posed by PEGS), or an overarching framework, will have to be decided. The experience gained from undertaking the pilot As will be crucial in the identification of areas ready for regulatory intervention and appropriate timescale. A critical element here will be the European Commission's actual competence to take action and effectively ensure the principle of subsidiarity. As part of this the Commission should

consider adding ICT/interoperability impacts to the standard impact-assessment process accompanying regulatory instruments.

CHAPTER 7 Future outlook: a common or fragmented European public space?

7.1 Drivers, barriers and visions for an uncertain future for PEGS

Key issues for the future of PEGS will be the level of fragmentation of the European public space for eServices, and inversely the possibilities to create Europe-wide standards and frameworks, as well as common infrastructures and protocols. As we have demonstrated throughout the report, this is not a mere technical problem. Most experts believe the technical issues could be solved relatively easily. The challenges lie beyond that in the legal, organisational and financial issues that need to be dealt with to allow the establishment of PEGS, and also in the impact that these services will have on national systems and approaches, which is likely to lead to resistance if perceived as an external intervention.

Important developments in this respect are the pilot for a common eIDM framework and the second generation of the European federated Interoperability Framework. Drivers towards more common solutions are expected to be the Services Directive, as well as overall levels of eGovernment deployment and increased sophistication, in which inter-MS learning will lead to a higher degree of convergence around certain accepted good practices and solutions. As experience with federated solutions in G2G, and G2B increases, these are likely to spread to G2C services. Successful commercial applications might support this process too. Great unknowns are the level of trust that public agencies will have in each other, and that citizens will have in their governments and also in the safety of the technology and the levels of privacy protection that can be granted. More general advances in European integration will also determine the appetite for common integrated solutions.

At least for the medium term the drive seems to come from national sectoral champions forming partnerships with similar organisations in other MS, sometimes supported by the Commission. The development follows the path of prevailing incentives, political opportunity and a solid business case, etc., rather than grand design. Common initiatives to achieve more coordinated approaches are trailing the actual developments, and the real stakeholder community of practitioners are poorly represented in these processes. Moreover, the power of PEGS as driving forces for European integration has not been fully understood by political elites, and not even by academia. Therefore the necessary political support is still weak.

7.2 Three possible scenarios

To understand where the development may lead in the mid term (2015) the EUReGOV and Securegov projects drew up a "future framework" of key drivers and barriers for PEGS and a number of "use-cases" for future PEGS applications. These were used together with three scenarios for eIDM deployment in PEGS (see Text box 14) in a gaming workshop to identify the nature of the likely future PEGS landscape and possible policy responses going forward.

These possible futures describe how Europe in 2015 may be largely interconnected, with pan-European eGovernment services (PEGS) being delivered to citizens based on a full-scale common European eIDM system, providing seamless identification and authentication of individuals. However, it is just as likely that European citizens and their governments resist such coordination of efforts and interoperability of systems, opting, instead, for a very minimalist approach to eIDM, where a common identifier may support a very specific and limited set of basic applications. Poised between these two alternative futures, we identify a scenario that is largely services-driven and foreshadows a fragmented eIDm environment with different coalitions of countries and stakeholders, clustered around the utility that each service represents.

Though the scenarios had a deliberqate eIDM focus, they offer a good general framework for future policy reference, particularly when combined with the EUReGOV cases and the drivers and barriers that have been identified.

Box 14 The PEGS scenarios for 2015

- *"Only if you have to"* represents a minimalist scenario for PEGS 2015. Even under this scenario more national eIDM systems and services will be emerging across Europe than are present today, and there will also be some limited cross-border applications available. Nevertheless the use of identity at the EU level will be primarily as a back office vehicle for (binary) identity confirmation or denial. The inertia of public authorities is compounded by the lack of trust that prevails between public authorities and of the citizens in the EU. Physical and legal separations are carefully guarded to ensure a sense of national sovereignty. Thus further interconnection and interoperability of systems becomes highly unlikely. In areas where specific user groups do find sufficient value added in cross-border or even pan-European services, they may be developed by commercial suppliers outside the public sector, whereby likely candidates are healthcare and education services.
- *"Pick and choose"* is a services- and utility-driven scenario. Given the current fragmented approaches, it is not unlikely that the European eIDM landscape will be a patchwork of sector-driven (or thematic) initiatives, competing with each other or existing in parallel. Different groups of countries will be cooperating in different areas and at different levels of integration and interoperability. Such cooperation builds on common interests, whereby the utility of the service determines which countries participate (e.g. a service like EUCARIS[75] for tracking and retrieving stolen cars may be less interesting for Malta than for Germany or Poland). More generally, cooperation will happen where mutual trust between public authorities exists, further supported by similarities in organisational and legal structures and cultures. There may eventually be common European identifier and in certain specific areas there could also be authentication at the European level. The overall picture however, will be one of different speeds and intensity of progress, interconnection and overall fragmentation between sectors and geographies.
- "*Just do it"* is an optimistic scenario. Though a sectoral, geographic and multi-layered patchwork is likely, a scenario with a more unified system is not impossible either. There are significant benefits for citizens, governments and commercial operators to have a more standardised system that would support a large range of eGovernment services and functions. One common solution would eliminate the need for multiple cards, would increase the possibility for interconnecting systems, would allow the provision of services across "policy silos" and would have the scale and critical mass of users to attract commercial service providers. If rolled out effectively the European eIDM standard could be world-leading. This scenario depends heavily on technology and trust among participating governments and of the users in the system. To support this trust base the effective application of privacy-enhancing technologies and data protection guarantees will play an important part.

Source: Securegov 2007

[75] About EUCARIS: European Car and Driving Licence Information System http://www.eucaris.net/

7.3 Likely outlook for PEGS in 2015[76]

PEGS hold the potential to provide a new impetus to European integration and they may pre-empt the emergence of a "pan-European administrative space". However, from the Securegov scenario games it emerged that there are no clear incentives for national public authorities to develop PEGS for citizens, let alone a full-scale European eIDM framework and true interoperability to support this development. The current inertia of public authorities to invest in cross-border eIDM models, as well as to adjust legal legacy systems and coordinate organisational processes, still presents a formidable barrier.

At the same time there are other developments and trends that will push or pull further cross-border or even pan-European collaboration in these areas: for example, the Services Directive, increased mobility, the drive to reduce administrative burden, along with sectoral and regional challenges, an increase in the overall level of ICT deployment in government at MS level, etc. As these do not all work in the same direction it is likely that a diverse supply of cross-border and pan-European services will emerge. Likely applications will be found in healthcare and in support of worker mobility. Other areas could be education and eJustice (though this is not likely to be for delivering services to citizens). In parallel, the cross-border exchange of ID information will increase in the field of law enforcement and specific niche applications for business sectors. The financial sector is also likely to go ahead and develop its own platform(s).

Once effective solutions and good examples at local, national and regional level emerge, political commitment to actual implementation is expected to grow. The current focus on the Large Scale Pilot is too limited to effectively develop a common eIDM system for Europe, given the various other platforms and avenues that could be explored and which are in fact being developed already. Any common solution would require strong leadership in order to ensure a coordinated approach based on addressing the real needs of users, and facilitate a European application that is simple, secure, resilient, robust and effective.

Such leadership can only be effective in an environment of trust: trust between public authorities (PAs) and trust of citizens in administrations across the EU to defend their interests and rights, and to deliver concrete benefits. It will be difficult to achieve this high level of trust, both among citizens and among Public Authorities of the EU 27 (or maybe 30 by 2015). Citizens need to trust that their information is safe and that neither government nor unauthorised third parties have access to this data. If this cannot be guaranteed or if the perception of abuse prevails – through actual breaches or false perceptions – the system will fail because of a lack of users.

On the whole, these observations lead to the conclusion that the chances of achieving a common interoperable European public space are slight. The most likely outcome is one where PEGS advance where trust exists and where a real added value can be identified – either between certain countries, groups of people, or in specific sectors. This will result in a patchwork of different PEGS, with varying constituencies, design and purpose. Eventually there will be areas in which the overriding business case will be to develop

[76] Van Oranje et al. (2007).

common approaches at the European level. The role of the Commission to identify these and to create the right momentum has been addressed in Chapters 5 and 6 of this report.

7.4 Desirability of a new parallel PEGS system?

It is foreseeable that there could be an alternative development trajectory to PEGS? As deliberated in the previous section, there are a number of reasons to assume that the long-term future of PEGS is neither with an ad hoc collage of sectoral bottom-up services and diverse interoperability solutions, nor with grand common European designs.

On one hand, the intake, integration and management of mobile citizens in national systems of countries of residence lead to complexity and error. As this contingent is expected to grow, MS governments are likely to want to deal with these issues of administrative burden and inefficiencies. Also, the voice of these constituencies will become stronger, demanding better portability of worker, social and pension rights, as well as effective and equitable local services. On the other hand, the complexity of connecting diverse systems and the political challenges in reaching common interoperable solutions – which could potentially lead to long-term harmonisation of national social welfare systems – make it unlikely that overarching solutions will be found within the desired timeframe, namely before total fragmentation becomes endemic.

Therefore it could be envisaged that MS prefer to initiate a new PEGS "trajectory" for critical services. In this vision there could be a voluntary parallel European track, where highly mobile people could opt in, instead of staying in the system of their country of origin or moving into the system of the (subsequent) country (or countries) of residence. Such a parallel system would need to be governed and would pose important design challenges, but would have far fewer barriers caused by interoperability issues, legacy systems, jurisdictional constraints and administrative burdens. A possible model might be the international seafarers statute.

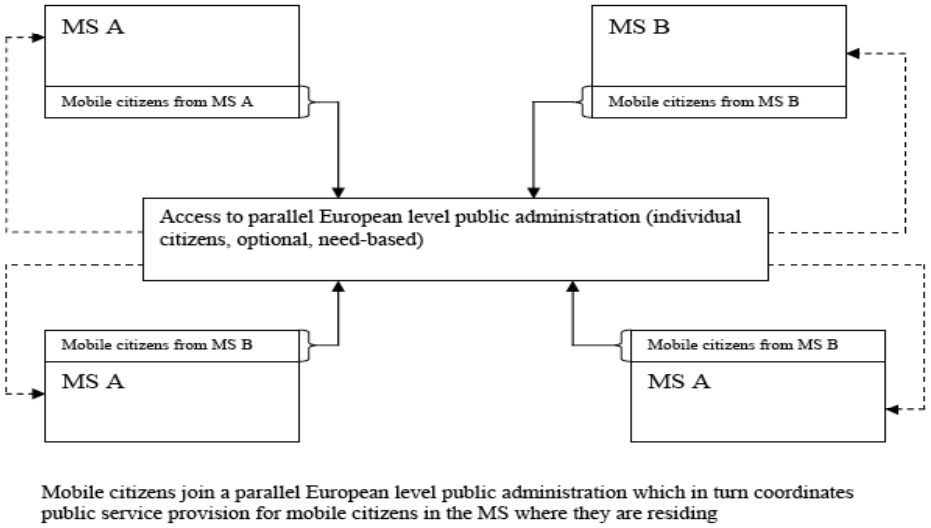

Figure 15 Possible future Parrallel PEGS trajectory

Implementation and even the decision to want to consider such a system are still far away. The decision process is also likely to face many of the adverse incentives that PEGS face. To explore the possibility of such a trajectory, a conceptual mock-up needs to be designed, possibly followed by a Pilot A to test feasibility for two important services: e.g. portability of pension rights and unemployment benefits.

7.5 Reinventing government: modular government service delivery and eGovernance

Finally there may be more radical ways in the long run to overcome complexity and interoperability. Most current initiatives to reorganise government have not led to fundamental changes and thus have foregone many of the potential benefits that new technologies bring to the efficiency and efficacy of public service delivery. When the time is ripe for a more radical approach, it might be possible to consider completely overhauling government service delivery by organising it in a modular way and removing the typically vertical structures that are dominating the current public sector. Building on the mySociety case, it is conceivable that governments might be willing to focus on providing the core services only, leaving others in charge of presenting those services to the public as "consumables". Just as mySociety provides the user-friendly front end to government services, and combines different available services to deliver new, more citizen-centric applications, it could become usual practice that the government simply provides the essential building blocks of a service in a format that allows others (private initiatives, citizens themselves or even government departments) to combine and repackage these to produce the services people really want. In some ways this has always been the intention of the Directive on re-use of public-sector information, in which the Commission and all MS accepted the potential economic value of the re-use of data. The concept could be widened and be applied to the structure and role of government more in general, but this obviously

has huge implications for issues such as governance, security and trust, to name but a few. Thus, much more research would be needed on the feasibility of this approach.

Conclusions and recommendations

PEGS are not simply a European version of national eGovernment services. They should be seen as the integrated policy tools they really are and be assessed on their ability to effectively serve European mobile citizens, and businesses. Ways they achieve this include underpinning EU policies and strategies for reducing administrative burdens, increasing mobility and competitiveness, and improving the efficiency of the European public-sector. Additionally, they support the cross-boundary policy linkages that are essential in responding to the challenges of the Information Society.

Though currently few real PEGS for citizens exist, a number of developments point at increasing political and policy attention. The Services Directive, the administrative burden reduction policy, the maturity of national eGovernment programmes, increases in mobility and cross-border activity, and active intervention and support by the Commission all suggest that the number and sophistication of PEGS are likely to rise. Nevertheless, PEGS are not yet considered as fully integrated policy tools serving sectoral objectives (health, transport, research, education, justice, law enforcement, internal market, burden reduction, etc.). Lack of incentives, the complexity of linking up legacy systems and the "inverse subsidiarity failure" make key stakeholders wary of investment of time, money and political capital in PEGS.

Recommendation 1: The Commission should make supporting PEGS a central theme in its future eGovernment strategy in view of their potential as carriers of the next wave of European integration at grassroots level: PEGS deliver public service to Europe's citizens and support higher-order objectives such as the internal market, competitiveness, and mobility.

Recommendation 2: A PEGS should be considered in the context of a specific policy and be assessed against its ability as a policy tool to help deliver the policy objectives.

Recommendation 3: DG INFSO and DG DIGIT should actively collaborate to support PEGS development, by facilitating sectoral DGs to develop PEGS in their separate domains. Sectoral DGs should take a more significant budgetary and policy stake in PEGS.

Recommendation 4: The Commission should identify and describe cross-border life events to make the benefits of PEGS more evident, to identify the bottlenecks in cross-border mobility and the internal market, and to reduce scepticism among key stakeholders.

PEGS come in different forms, but are still mostly sectoral bottom-up initiatives, emerging in environments of trust, based on existing exchanges between similar organisations in different MS. The cases show similarities (as described in Chapter 4): broad, inclusive governance (boards); portal structures, federated approaches, simplicity in architecture, and where possible the use of existing (open) standards; effective project-management with executive powers; leadership of a Member State or a group of public agencies; open consortia for others to join; and a solid business model including an outlook for long-term sustainability in management and funding. Notwithstanding these communalities, good practice exchange and cloning are still rare, due to the "not-invented-here-syndrome", the tendency to overstate legacy problems and uniqueness of local services, the lack of incentives and marketing skills, and IPR rules barring private industries from selling solutions they've developed for one public agency to another.

Recommendation 5: The Commission should more actively support best-practice exchange between PEGS and eGovernment practitioners interested in seeking cross-border applications by strengthening and cleaning up ePractices in this area, requiring better inputs to the database in more modular form, combined with (the facilitation of) consulting services, training and "recipe book" approaches.

Recommendation 7: The Commission should conduct a large-scale benchmarking exercise of the Information Assurance (IA) maturity of EU Member States – not to apportion blame but rather to identify where levels and understanding of trust diverge in order to properly inform any security requirements for PEGS.

In all the cases studies in EUReGOV and Securegov, the Commission was involved in some form or its involvement was sought by the stakeholders. A range of interventions have been identified from political support, to investment, good practice exchange, measurement, regulation, and even execution and the provision of infrastructure (as described in Chapter 5). At a more general European level the Commission is actively supporting the creation of critical building blocks such as eIDM, EIF, eSignatures, eDocuments and eProcurement.

Recommendation 7: The Commission should become an even more strategic player with regards to PEGS development. At the practical level it is suggested that the Commission should:

1) reconsider, along with MS, the usefulness of having an eTEN-like programme providing "seed funding" or "public venture capital", and provide advice on business plans relating to bottom-up PEGS developments. The Commission and Member States should also consider mobilising other funding sources such as structural and cohesion funds, the European Investment Fund and pre-competitive procurement

2) identify – via DG INFSO and with sectoral DGs – the domains in which promising PEGS could be developed and follow this up with communications, green papers and Ministerial Declarations to ensure the link with wider policy objectives

3) consider using type A pilots to support ongoing developments in other DGs (such as the Traveller Entry and Exit system being developed by DG JLS and the Electronic Driving Licence by DG TREN) thus ensuring better organisational learning across the Commission and the wider eGovernment community in the EU (learning should be captured, see points 4 and 5)

4) set up a pan-European "knowledge centre" on identity management, and create "virtual middleware" that would support the various different systems across Europe to interconnect by indicating or referencing which technical middleware would be appropriate to allow different eIDM systems to interconnect. ENISA could be mandated for this role or it could be taken up by the Commission and integrated into the function suggested in point 5, below

5) further develop (especially via INFSO, DIGIT and ENISA) its role as a centre of excellence, incorporating a new function that would build on its experience in developing the EIF. That is, the Commission should consider setting up an *Interoperability forum or observatory*, or expanding the current eGovernment observatory (http://ipsaportal.unina.it/?p=288), which is run by IDABC, possibly merging it with SEMIC and ePractice. The observatory should allow active consulting instead of just passive listing of cases, events and information. The character of the services would be more like SOLVIT than the current observatory and ePractice sites

6) consider adding a type C pilot to the CIP ICT PSP, which would allow an experimental space or "sandbox" approach for developing and testing promising ideas for PEGS, as well as interfaces with private-sector initiatives (such as SEPA)

7) support the identification of appropriate standards, tailoring global standards to a European context (e.g. standards taking into account the peculiarities of the European Privacy framework). The Commission should actively engage with standards organisations (ETSI, OASIS and W3) to identify the need for standards and ensure the right level of openness to stimulate up take and interoperability

8) consider reviewing the legal arrangements that are required for establishing PEGS, such as the need for legally binding eSignatures, the ability for certified eDocuments to be accepted across the EU, and the need to have eIDM systems and all flanking regulatory guarantees in place to make these work in practice. (the action plan is a first step).

MS and the Commission may consider the revision of the Data Protection Framework to protect better against abuses of privacy resulting from "mission creep" by stakeholders not directly associated with the delivery of PEGS, and instituting better *ex-ante* legal measures for the improvement of security.

These developments may eventually enable European interoperability to a degree that one could speak of an internal EU administrative space. However, for the medium and even longer term it is expected that the PEGSs environment will be diverse and fragmented, following an opportunistic development path of real needs, incentives and policy drivers (see Chapter 7).

Recommendation 8: Besides offering practical support to PEGS, the Commission should continue to play its role in developing EU-wide common

infrastructures, systems and protocols with a view to eventually overcoming current and mid-term fragmentation in PEGS and achieving an appropriate level of interoperability. This would be achieved in part by building coalitions to change the global, open standards to be more in line with European stakeholder concerns and interests.

As PEGS for citizens are in the process of being developed, measuring MS progress (readiness) and actual PEGS impact is difficult. Still, measurement serves many goals, ex post as well as ex ante, not least highlighting the importance of a policy and creating awareness. Therefore it is relevant to consider how to measure PEGS for benchmarking and impact-assessment purposes.

Recommendation 9: MS and Commission should start to include PEGS-related indictors in regular eGovernment benchmarking practice.

For impact-assessment the objective is to overcome the "subsidiarity failure", whereby the key national actors do not consider the longer term and wider benefits of PEGS for Europe. This report argues that outcomes need to be emphasised over outputs and that these outcomes should be seen in the context of wider policy objectives (such as the internal market). Also, Impact-assesssment in the case of PEGS should not be used as an ex ante tool for prioritising a PEGS in one policy domain over one in another, which should be left to the arbitration through political democratic process (do not compare apples and pears, health and security). Different PEGS can only be assessed within the same policy area, for their ability to contribute to domain-specific objectives. For the effective assessment of the impacts of PEGS an adjusted version of the eGEP model is suggested. The adjustment is mostly concerned with capturing European-level secondary impacts (outcomes). In addition to the detailed and rather sophisticated eGEP, we suggest using a more simple impact-assessment model for ex ante purposes, where a choice between alternative PEGS may need to be justified. For this, the simple I=mPAcT framework (Chapter 6) is likely to have a strong heuristic value.

Recommendation 10: The eGEP impact-assessment framework should be used as the basis for impact-assessment of PEGS; however, it must be adjusted to take into account PEGS' potential impacts on wider objectives of the EU. An additional effort in making eGEP more-user friendly would be required to ensure higher frequency of use.

Recommendation 11: For ex ante impact-assessment the I=mPAcT model can be applied as a heuristic tool for potential impact that can be easily communicated.

In order to measure PEGS development and MS performance/readiness in the context of a benchmarking exercise, such as the eEurope rankings, indicators are required. This report argues that there are no PEGS for citizens to measure, but that developing a PEGS indicator would still be relevant as this has an important signalling value. The fact that something is measured and that Member States are required to gather and present data on their activities in this area helps to emphasise the value of and interest in PEGS. To deal with the challenge of measuring something that does not yet exist (i.e. PEGS for citizens) a broader view is required of what drives "Europeanisation" of eGovernment. In developing

indicators for PEGS it is important to keep them simple but sufficiently informative of the actual developments leading to a more European outlook in eGovernment and steps being taken towards actual developments of PEGS.

Recommendation 12: The Member States and the Commission should include a PEGS indicator in their regular eGovernment benchmarking exercise, to get an idea of progress different Member States are making in terms of adding a pan-European dimension to their eGovernment provision, compared to other Member States and compared over time. Such an indicator would have a PE-Accessibility score (PE_AC) and a PE-readiness score (PE_RE), together forming the weighted PEGS composite indicator:

PE_RE + PE_AC = [λ(PAW) + ρ(EIF) + σ(eIDM)] + {MS [α (L x AP x OA) + β (R)] x I}

Recommendation 13: To carry out a comprehensive assessment of the PEGS landscape, centrally provided PEGS should also be measured, to identify the Commission's activity in this area. We suggest measuring:

Number of European level PEGS (nPE) x number of Languages (L) x Online Availability (OA)

Most trends in PEGS point to a European public digital space that will be fragmented, with different services, supported by different technological solutions, varying groups of countries and public/private organisations and developing at different speeds depending on subject matter, market demand for the service, availability and nature of suppliers of the applications, etc. Any drive to create interoperability at the EU level is expected to come to trail ongoing developments, and will need to deal with the increasingly diverse and complex legacy of systems, infrastructures and applications. One possible solution of avoiding this problem is presented here.

Recommendation 14: A Pilot A should be envisaged to test the feasibility of a separate parallel PEGS trajectory for critical services; the most appropriate application domains for the pilot would be: portability of pension rights and unemployment benefits.

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APPENDICES

Appendix

Appendix A: List of Experts

Name	Organisation	Participation
Adler, Steven	Microsoft	Securegov Workshops
Aflalo, Guillaume	G.I.E. SESAM - Vitale, France	EUReGOV Final WS
Andresson-Bourgey, Anneli	European Commission, Internal Market and Services DG	Securegov Workshops
Bachimont, Pauline	eris@	Securegov Workshops
Bartels, Cord	NXP Semiconductors	Securegov Workshops
Bauer, Michael	Giesecke & Devrient GmbH	Securegov Workshops
Bekkers, Victor	Erasmus University Rotterdam, Netherlands	EUReGOV Final WS
Benítez Baleato, Xesús Manuel	Xunta de Galicia, Spain	EUReGOV Final WS
Berklaar, Tim	ICTU, Netherlands	EUReGOV Good Practice WS
Bernal, Jose Ramiro Fernandez	Privada	Securegov Workshops
Beslay, Laurent	European Data Protection Supervisor	Securegov Workshops
Bisch, Anthony	European Commission, DG Information Society and Media	Securegov Workshops
Blixt, Per	European Commission, DG Information Society and Media	Securegov Workshops
Borsari, Giulio	Ministero della Giustizia (Italian Ministry of Justice), Italy	EUReGOV Final WS
Botterman, Maarten	GNKS Consult	Securegov Workshops
Briand, Olivier	NXP Semiconductors	Securegov Workshops
Broster, David	European Commission, DG Information Society and Media	Securegov Workshops
Bruegger, Bud	Comune di Grosseto	Securegov Workshops
Buysse, Andrew	AB Consulting SMTC nv	Securegov Workshops

Caen, Marc	SPF intérieur	Securegov Workshops
Clarke, Jim	Waterford Institute of Technology	Securegov Workshops
Collin, Thierry	Thales	Securegov Workshops
Cornel, Vintila	E-data, Romania	EUReGOV Good Practice WS
Crespo, Estibaliz	Delegation of the Basque Government	Securegov Workshops
De Cock, Danny	K.U.Leuven	Securegov Workshops
Deprest, Jan	Fedict	Securegov Workshops
Deschemps, Bruno	Ministère de l'Economie, des Finances et de l'Industrie, Direction Générale de la Modernisation de l'Etat,	Securegov Workshops
Dorp, Tessa	Netherlands Ministry of Home Affairs	Securegov Workshops
Dullens, Gertie	Kadaster-on-line, Netherlands	EUReGOV Good Practice WS
Fernandez Salas, Mariano	European Commission, DG Internal Market	Securegov Workshops
Franke, Jan	TÜV Rheinland Group	Securegov Workshops
Fusaro, Francesco	European Commission	Securegov Workshops
Galler, Gérard	European Commission	Securegov Workshops
Gaston, Lorenzo	European Citizen Card/Gemalto	Securegov Workshops
Gawryszczak, Michal	Confederation of Polish Employers	Securegov Workshops
Gayraud, Valerie	European Commission, DG Information Society and Media	Securegov Workshops
Gludden, Julia	21st Consultancy, united Kingdom	EUReGOV Good Practice WS
Graux, Hans	Lawfort/Timelex	Securegov Workshops
Greenwood, Sarah	Symantec	Securegov Workshops
Grubben, Marian	European Commission; DG MARKT, SOLVIT	EUReGOV Good Practice WS
Hansteen, Kjell	European Commission, DG Information Society and Media	Securegov Workshops and EUReGOV Workshops
Hauschildt, Bent	European Commission, DG DIGIT, IDABC	EUReGOV Good Practice WS
Havranek, Heidi	Austrian Federal Chancellery	Securegov Workshops
Hawkes, Leonard	Solicitor (Juriste conseil)	Securegov Workshops
Helbaek, Thomsen Bo	SKAT, Denmark	EUReGOV Good Practice WS

Hengeveld, Pim	T-Systems, Belgium	EUReGOV Final WS
Hinz, Sandy	European Office of the Saxon Local Authorities, Germany	EUReGOV Good Practice WS
Hodgson, Paul	British Telecom	Securegov Workshops
Hol, Marc	City of Kortrijk, Belgium	EUReGOV Good Practice WS
Holand, Kasper	Mission of Norway to the EU	Securegov Workshops
Janssens, Bert	AROHM (Administration of Regional Planning, Housing and Monuments), Belgium	EUReGOV Good Practice WS
Jauregi, Ainara	Delegation of the Basque Government	EUReGOV Final WS
Junger, Jean-François	European Commission, DG Information Society and Media	EUReGOV Final WS
Koninckx, Bruno	MEMORI Research and Consulting Institute, Belgium	EUReGOV Good Practice WS
Konings, Marika	Cyber Security Industry Alliance	Securegov Workshops
Kristjansdottir, Gudfinna	Gardabaer Municipality, Iceland	EUReGOV Good Practice WS
Kurkinen, Seppo	Ministry of Finance, Finland	Securegov Workshops
Leandri, Jean-Jacques	Ministère de l'Economie, des Finances et de l'Industrie, Direction Générale de la Modernisation de l'Etat,	Securegov Workshops
Leclerq, Amelie	European Commission	EUReGOV Final WS
Levy, Mireille	Identity and Passport Service	Securegov Workshops
Leyman, Frank	Fedict	Securegov Workshops
Lhoas, Pascal	Centre de Recherche Public Henri Tudor (CRPHT), Luxembourg	EUReGOV Final WS
Libon, Olivier	Belgian Federal Government Service for Information and Communication Technology FEDICT	Securegov Workshops
Link, Robert	European Commission, DG Information Society and Media	Securegov Workshops
Lips, Miriam	Oxford Internet Institute	Securegov Workshops
Lofaro, Roberto	Partnershipincubator, Belgium	EUReGOV Final WS
Maes, Frank	Belgian Federal Government	Securegov Workshops
Maghiros, Ioannis	European Commission, DG JRC – Institute for Prospective Technological Studies	Securegov Workshops

Martens, Tarvi	SK	Securegov Workshops
Martin, Meints	FIDIS/PRIME	Securegov Workshops
Maurice, Gregoire	Artificial Solutions, France	EUReGOV Good Practice WS
Mitrakas, Andreas	ENISA	Securegov Workshops
Mouclier, Emmanuel	Artifical Solutions, France	EUReGOV Good Practice WS
Moya, Andres	Regional Delegation, Spain	EUReGOV Final WS
Myhr, Thomas	Norwegian Ministry of Trade and Industry	Securegov Workshops
Nicolay, Roger	Coördinator EIK - Rijksregister	Securegov Workshops
Ocakoglu, Gzim	DG Enterprise (IDABC Unit)	Securegov Workshops
Padegimas, Algimantas	Lithuania	EUReGOV Good Practice WS
Pirina, Francesco	Freelance EU Affairs Consultant	Securegov Workshops
Polin, Gilles	Microsoft	Securegov Workshops
Pype, Patrick	NXP Semiconductors	Securegov Workshops
Ramel, Sophie	CRP Henri Tudor, Luxembourg	EUReGOV Final WS
Rissanen, Tapio	EuroConseils sprl, Belgium	EUReGOV Final WS, Securegov Workshops
Robinson, Andrew	R4eGov project	Securegov Workshops
Rodica Hrin, Gabriela	ICI – National institute for research & development in informatics, Romania	EUReGOV Good Practice WS
Roelants, Laurence	Politech INSTITUTE - European Center of Political Technologies, Belgium	EUReGOV Final WS
Roessler, Thomas	A-SIT	Securegov Workshops
Rouchouze, Bruno	Eurosmart/Gemalto	Securegov Workshops
Rousseau, Mireille	Schuman Associates, Belgium	EUReGOV Final WS
Rousseva, Rossitza	UNU-MERIT, Bulgaria	EUReGOV Final WS
Rusu, Raluca	SONY Europe	Securegov Workshops
Sagström, Christian	Verva - Administrative development agency	Securegov Workshops
Salz, Stefan	Bundesstelle fur Informationstechnik im Bundesverwaltungsamt, Germany	EUReGOV Good Practice WS
Salzmann, Martin	Cadastre, Land Registry and Mapping Agency (Kadaster), Netherlands	EUReGOV Final WS

Samast, Yuksel	Information Security Associations Turkey	Securegov Workshops
Schweiker, Marit	CCRE, Belgium	EUReGOV Good Practice WS
Shamah, Jon	Core Street	Securegov Workshops
Simoens, Koen	K.U.Leuven	Securegov Workshops
Simpson, Gary	e@SY Connects, United Kingdom	EUReGOV Good Practice WS
Siösteen Thiel, Madeleine	VINNOVA, Sweden	EUReGOV Final WS
Sobolewska, Izabela	European Commission	EUReGOV Final WS
Spinola, Rafael	SOST	Securegov Workshops
Stassin, Michel	STERIA BENELUX S.A. N.V.	Securegov Workshops
Stergar, Michael	Net-Value E-Government Contents, Austria	EUReGOV Good Practice WS
Stienen, Johannes	Netherlands Ministry of the Interior and Kingdom Relations	Securegov Workshops
Tamm, Hendrik	PSI Business Technologies	Securegov Workshops
Tavano, Roberto	Unisys Corporation	Securegov Workshops
Theunissen, Paul-Herve	Head of Unite EC, DG TAXUD	Securegov Workshops
Tilman, Vincent	EUROCHAMBRES aisbl	Securegov Workshops
Timmermans, Jan	Netherlands Ministry of the Interior and Kingdom Relations	Securegov Workshops
Valeri, Mauro	Italian State Police - OLPS, Italy	EUReGOV Final WS
Vallner, Uuno	Ministry of Economic Affairs and Communications	Securegov Workshops
van Arkel, Jan	Porvoo Group/Cardlife	Securegov Workshops
van der Eijk, Pim	OASIS	Securegov Workshops
van der Pal, Paul	Ministry of Economic Affairs, The Netherlands	Securegov Workshops
Van Langendonck, Philippe	Lawyer at the Brussels Bar, Belgium	EUReGOV Final WS
van Lerberghe, Daniel	POLITECH INSTITUTE - European Center of Political	Securegov Workshops
van Mechelen, Chris	Art Promotion SMTC nv	Securegov Workshops
van Wezel, Ron	ABN-AMRO	Securegov Workshops
Varghese, Aniyan	European Commission, DG Information Society and Media	Securegov Workshops

Velasco, Amalia	Spanish Directorate General for Cadastre, Spain	EUReGOV Good Practice WS
Vis, Francois	ICTU, Netherlands	EUReGOV Good Practice WS
Welin, Arvid	Swedish Administrative Development Agency	Securegov Workshops
Wellens, Pieter	European Commission, DG DIGIT, IDABC	Securegov Workshops
Weser, Andreas	T-Systems GEI GmbH	Securegov Workshops
Zimmerman, Frank	HP Consulting and Integration	Securegov Workshops
Zorbas, Kimon	Business Software Alliance (BSA)	Securegov Workshops

Appendix B: Case studies: Learning from daily practice

Supra-national PEGS

SOLVIT; helping the EU citizens to realise their rights

SOLVIT[77] is the only real supranational PEGS for citizens, and provides a good example of how eGovernment services can facilitate administrative processes through informal coordination and communication. It is an on-line problem solving network, established and coordinated by the European Commission and operated by the Member States. Member States work together to solve problems caused by the misapplication of Internal Market law by public authorities, without legal proceedings. Everyone (citizens, businesses) who has a complaint about a public authority can file this issue in his mother tongue. Using SOLVIT is free of charge.

Those who use SOLVIT often benefit a lot since it helps to avoid time- and money-consuming legal action. SOLVIT offers a route to solving a problem much faster than a formal complaint. It thus helps to reduce administrative burdens for public authorities, citizens and businesses.

The role of the European Commission, apart from coordinating SOLVIT, is to provide database facilities and, when needed, to speed up the resolution of problems. The Commission also passes formal complaints it receives on to SOLVIT if there is a good chance that the problem can be solved without legal action.

The organisation of SOLVIT is relatively straightforward, because it is basically dedicated to providing only one type of service. The challenge of making SOLVIT work is in keeping the participants in the various Member States committed to it and have them supply the required labour input. All together, there are 30 SOLVIT centres, one in every European Union Member State and an additional three in Norway, Iceland and Liechtenstein, plus the SOLVIT coordination centre in Brussels. Most SOLVIT-centres belong either to the ministry of foreign or economic affairs. The Commission SOLVIT support team in Brussels provides the SOLVIT-centres with day-to-day assistance regarding legal, technical and procedural issues. It also maintains and develops the database

77 See European Commission (2009f). .

and the websites, implements promotional activities and develops promotional instruments, monitors quality and performance and organises regular workshops.[78]

To make an eGovernment service work, the personal element in the day-to-day operations appears to be really important. Behind the technology, there is a community. This is also illustrated by SOLVIT, where interviewees all emphasised the importance of regular contacts between the colleagues in different countries, by phone, email, and face-to-face. The SOLVIT coordinator in Brussels organises regular meetings of all SOLVIT employees, in Brussels as well as in Member States.

TAXUD/NCTS; a federated solution with central management

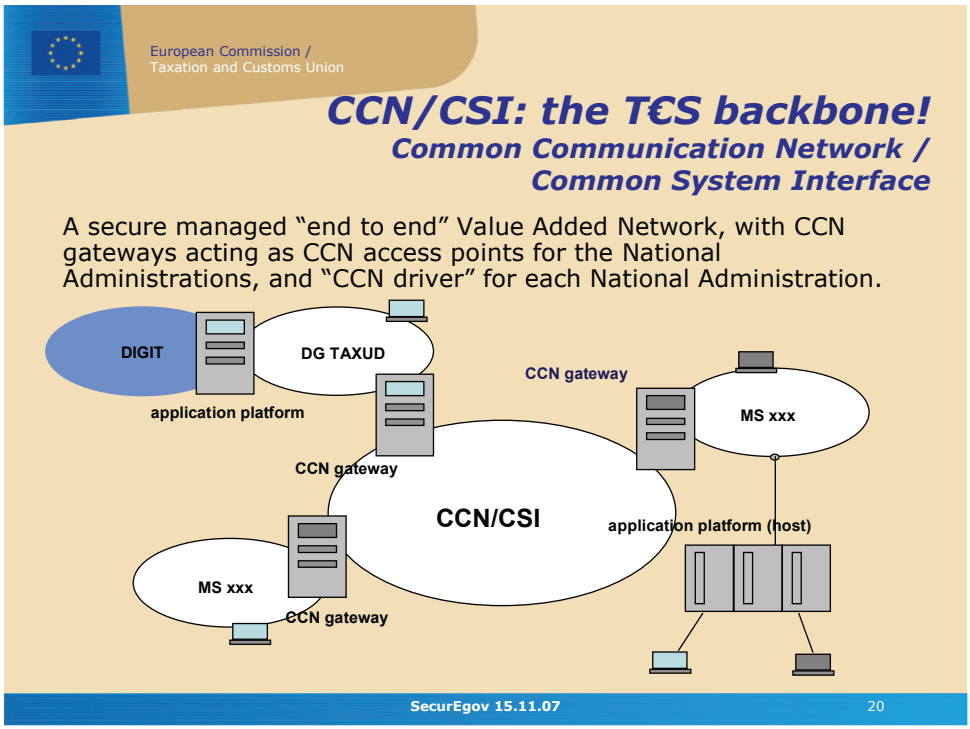
The NCTS pan-European system for the movement of containers is an example of a secure end to end customs procedure; as such it is not directed at citizens but it does hold relevant lessons for the development pg G2C PEGS.

Some characteristics of DG TAXUD systems are that they interconnect distributed national databases and must interact with a multiplicity of trader systems being used by the private sector. These systems are based on a confirmed operational model built on subsidiarity, collaboration and inter-operability. The ability to build trust between participants is the key element. The system was developed over the last 3 decades, thus time has also been an important factor.

The Commission takes a role in the management of the trans-European network. Different national business processes are requiring different technologies in MS. This is not a problem as the network acts as the interface between them. To address security a stack of security products and services are used (encryption, Virtual Private Networks, etc.) with availability being the main focus. The main threat is inadvertent (accidental) action from insiders.

[78] SOLVIT 2006 Report. According to the report, SOLVIT centres spent on average 16.5 man months on SOLVIT tasks in 2006, but staff levels vary from 1 to 59 man months per centre (European Commission 2007h).

Figure A: The CCN/CSI network



Source: DG TAXUD

Wider policy evolution has been made possible by advancement in pan-European systems e.g. the linking up of VAT systems in each Member State is an essential enabler of the internal market.

Key success factors[79] identified for TAXUD CCN/CSI that can also be applied to PEGS for citizens:

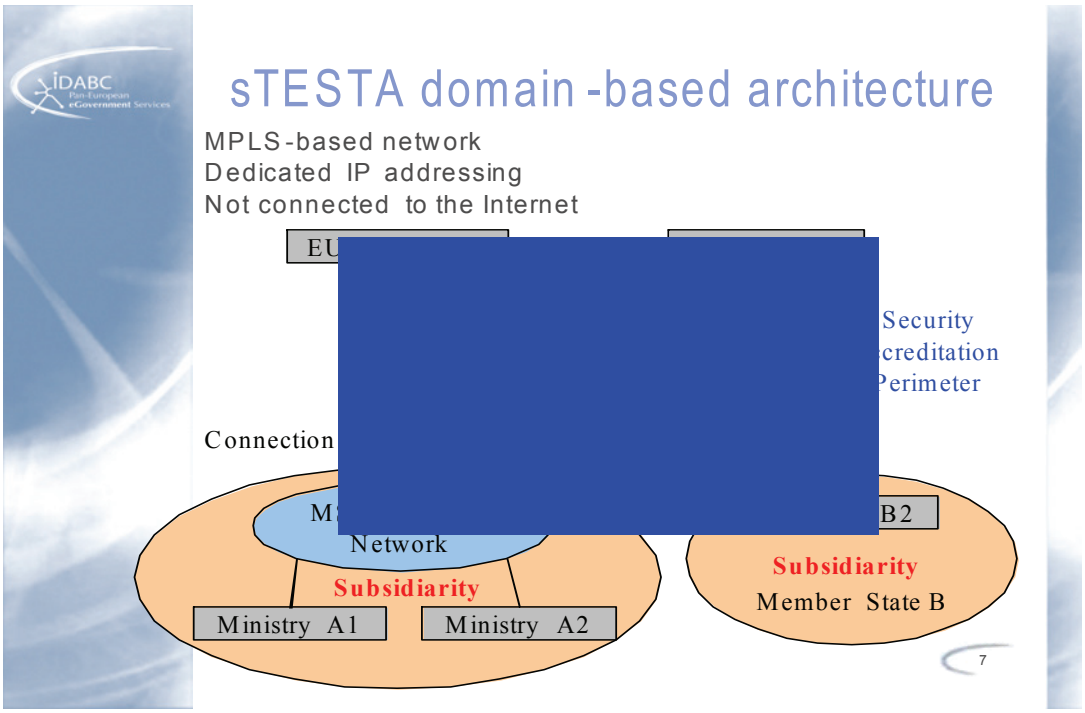
1. Investment in coordination of different communities of interest. This reflects the nature of a trans-European system – it is a protocol or terms of collaboration not a specific single IT system (although this may form part of it).
2. Time: developing complex systems involving many government departments, different business processes, diverging systems and technologies takes time.
3. Trust (and awareness) among all stakeholders is a crucial success factor that has to evolve
4. Clear mandates are required, to allocate responsibility between public and private actors, between the Commission and the MS
5. Transparent governance structure for the ongoing system
6. The role of the Commission as the interface between national systems proved to be critical

[79] As identified in the Securegov project.

sTESTA; the network designed for PEGS

Secured Trans-European Services for Telematics between Administrations (sTESTA) is a dedicated private Multi Protocol Label Switching (MPLS)-based network, with dedicated Internet Protocol (IP) addressing, not connected to the Internet for national and EU government departments. It is not a PEGS in itself but it is the backbone of a growing number of centrally organised and bottom-up PEGS. Therefore it is worth exploring in a bit more detail.

Figure B: The sTESTA network

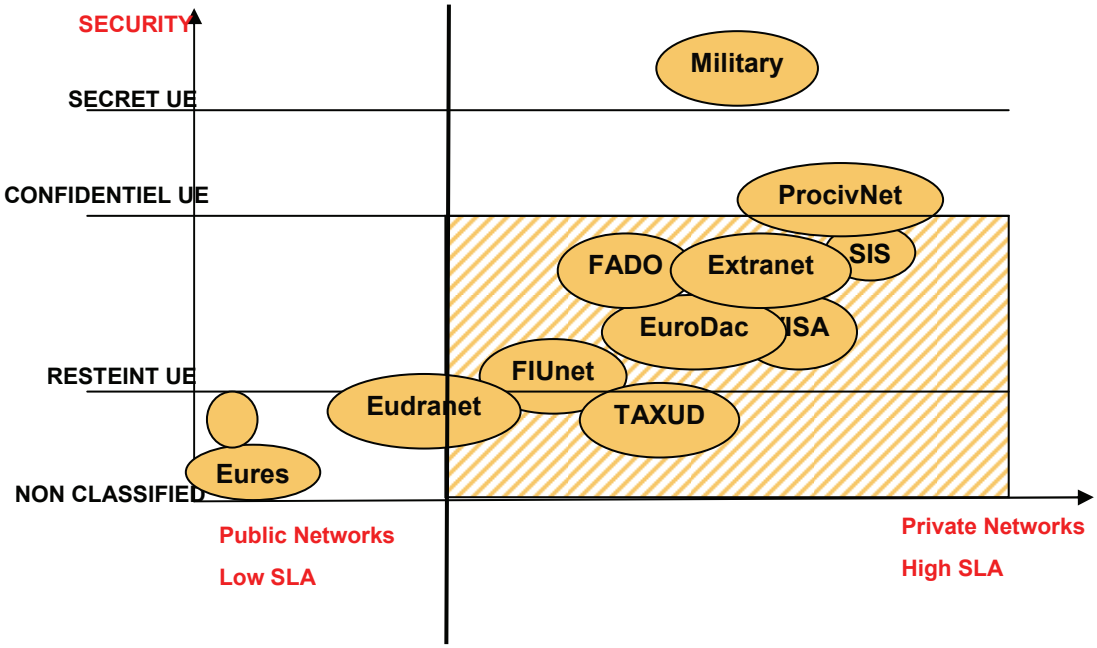


Source: IDABC (2007)

As Figure B shows, sTESTA provides a dedicated secure environment for delivering PEGS. The measures to increase security are more than the policies and procedures and technology, they are also about legal obligations which have to be met (e.g. MoUs stating reciprocal agreements between the Commission and the Member States). Indeed, legal agreements need to be in place before a new network is set up by sTESTA. When the security profile changes (e.g. due to the addition or evolution of one of the systems; adding in new MS, getting other EU institutions connected to sTESTA), the policy needs to be reconfigured, not only the systems.

Currently, to cope with this challenge in regard to the connection of EU institutions and MS that do not meet the security requirements of sTESTA, a two tier network will be deployed. Commercial authorisation technology has been used in the two tier non EU restricted network. Figure C shows the services that sTESTA supports, and its boundaries determined by security levels and required SLAs.

Figure C: systems supported by sTESTA, by level of security requirements



Source: IDABC (2007)

The sTESTA network is proving a useful resource for PEGS, however a dedicated network is not required for all services. Most PEGS and some currently running on sTESTA could be delivered over a public network (e.g. the Internet). For a few applications (e.g. SIS II) this is not politically acceptable and there is no availability guarantee (SLA). The critical question is if a sufficient level of trust can be gained in order to make the use of public networks feasible. There remains a question as to whether if the IPSEC functionality in IPv6 can be implemented for sTESTA community.

Bottom-up PEGS

NETC@RDS; cross-border health care for the mobile European citizen

NETC@RDS[80] is another example of a supranational PEGS, however in this case it is run by an independent consortium of health care providers, public authorities and health insurers that receives support from the Commission through the eTEN programme. NETC@RDS is an eHealth service providing mobile European citizens with easy access to health services. It is currently still in a testing phase. NETC@RDS is part of the European Health Insurance Card (EHIC), which is a proof of entitlement for European citizens to

80 See http://www.netcards-project.com. NETC@RDS is in line of the overall eHealth strategy of the European Commission, which focuses on better use of ICT for improved provision of interoperable high quality health services to (mobile) European citizens. See European Commission (2004, 2006a, 2007a, 2007b) and European Council (2006).

receiving necessary (non planned) medical care inside the EU/EFTA.[81] The EHIC has replaced the previously used E111 (paper) form. NETC@RDS will advance EHIC from an eye-readable to an electronic device (eEHIC).[82]

NETC@RDS will be provided across Europe, but is currently only accessible in pilot regions in 15 Member States. Users can make use of the service in their mother tongue. Once through the tests, it is designed to be immediately operational on a pan-European scale. So far, the service can only be used when one is travelling or temporarily resident outside one's home country and staying in one of the pilot regions. The number of potential users will increase enormously once project is finally implemented.

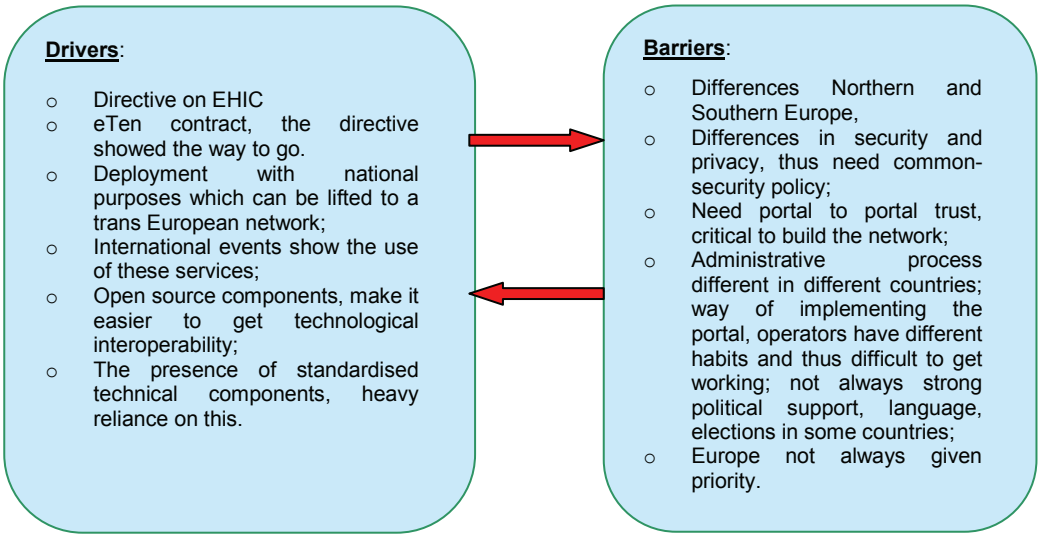
NETC@RDS will benefit users by providing easy access to health care services abroad. For health care providers it will provide a reliable source of information on insurance entitlements and it will facilitate interstate billing and clearing procedures. The eEHIC will be developed into a smart card with many advanced functionalities. It will use a Europe-wide IT-infrastructure to provide easy information exchange related to health services and ensure fully electronic cross-border billing of health services. For the future, the consortium envisages the development of a common electronic database for improved health insurance billing and clearing applications.

A number of important drivers of NETC@RDS should be noted as well as obstacles to the development and roll out. Figure D lists the most salient ones. The main driver was the Directive on EHIC which gave political momentum and facilitated start-up by pre-defining the dataset. The objectives, scope and relevance were clear to the Commission, and funding became easier to acquire. Most of obstacles were solved as project management problems. NETC@RDS now has a specially appointed person to deal with issues arising from cultural differences. It highlights the need for consensus building and strong management.

[81] Each Member State is responsible for producing and distributing the EHIC on its territory. It can be either a specific card or on the rear side of the national card. At current, more than 150 million EHICs are circulating in Europe.

[82] See Nader, N. (2007).

Figure D: Factors influencing the development of NETC@RDS



Source EUReGOV Final Workshop 2008

As more organisations get involved in the development and maintenance of an eService, the day-to-day organisation of service delivery gets even more complicated. That is also demonstrated by NETC@RDS, which is a consortium consisting of about 30 core members that each have cooperation partners in their own country. Thus, a large number of health sector institutions, including hospitals, pharmacies, medical practitioners and other health professionals, dentists, health insurances, health fund organisations and regional governments, in 15 EU countries[83] together build up the NETC@RDS network. Operators are mainly health care providers in hospitals and ambulatory health care offices. Altogether there are 305 service providers (medical units) with a total of 566 work stations (so-called NETC@RDS service points) operating in these 15 Member States. It is due to this complex structure that NETC@RDS is still in a long-lasting testing phase. Another reason for this extensive testing is that the IT infrastructure required for the electronic European Health Insurance Card (eEHIC) is not yet fully developed. Some functionalities of the smart card have so far only been tested in labs.

Unlike SOLVIT, the NETC@RDS project is not backed up by a well defined community of service providers. None of the interviewees was able to oversee the complete NETC@RDS network. Most were only able to describe the project on the local level. This makes institutionalisation of procedures and clear definition and allocation of governance responsibilities ever more imperative for the service to succeed.

83 These are: Austria, Czech Republic, France, Finland, Germany, Greece. Hungary, Italy, Liechtenstein, Netherlands, Norway, Poland, Romania, Slovakia, and Slovenia.

EULIS: how European land registries build a common market

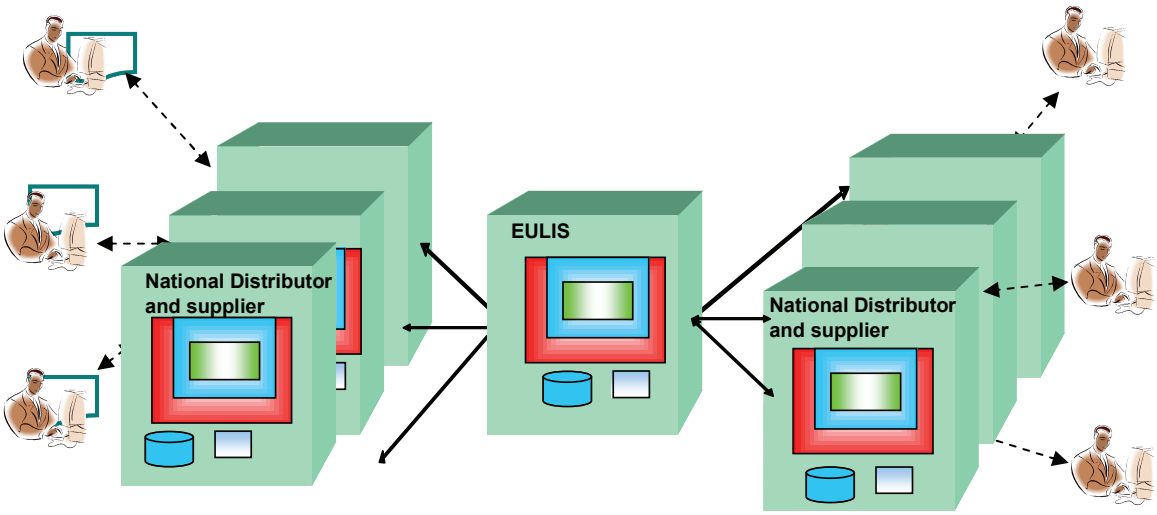
In support of the bottom-up NETC@RDS case study, EULIS presents a G2B application, which could become G2C. It is less complex involving fewer partners and a more homogenous stakeholder group, making it easier to identify specific cross-border issues.

EULIS' objectives are to provide world wide access to the European land and property information to promote and underpin a single European property market. Currently EULIS contains information on about 40 million properties, out of approximately 100M in Europe, all provided through a single portal. EULIS is a bottom-up initiative of various land registry agencies that got together as they observed a European market emerging.

After a successful pilot project, the partner agencies decided to proceed to develop a fully functioning application. Because of the value added to business, the service can easily finance itself - even with a limited amount of information transfer. The information in EULIS is kept at the national level and was difficult and often inaccessible to actors in other Member States. In order to safeguard its long term sustainability, EULIS has been transformed from an agreement to separate legal entity fit for permanent service.

The data remains stored at local level (see Figure E), yet EULIS has developed a common terminology, as all users need to know what is referred to in other countries. Further, processes of other countries need to be known to other countries, thus references have been created. A central portal to connect the national portals and for billing purposes has been established online. Customers will only need to refer to their national provider.

Figure E: EULIS architecture



Source Kadaster 2008

Currently EULIS is in the process of incorporating more countries (i.e. Iceland and Austria), and will establish a legal body to outline more formal governance arrangements. The central organisation only employs 3 people, as most of the work is done at the local level.

The main driver of the development of EULIS is the market demand for cross-border services. The process has been greatly supported through a Commission Green Paper on the European mortgage market, which increased the policy awareness of the importance of European scale accessibility of information. Moreover, initial national initiatives (UK) to deliver services across borders helped to pave the way, for a cooperation that could build on a longer term relationship between land registries. Already in the past, land registries would meet regularly. This provided a community of trust and shared interests. In addition the initial 8 members had banking systems, which were willing to cooperate. An open financial market was economically attractive to them.

In rolling out the application from pilot to full scale PEGS EULIS identified a number of challenges. The main – related - risks are:

1. Low/slow take-up
2. inadequate roll out
3. lack of sustained financing

To counter these risks, it is necessary to strengthen marketing efforts, to increase awareness, and to continually look for political backing and cooperation. The European Commission has been a good sponsor, but does not provide sustained financing. The latter point is less of a concern for EULIS as the business proposition actually has a commercial value that allows recuperating the cost of the operations. Other issues that needed to be dealt with:

- a great variety in the level of access to data, e.g. in some countries it is truly public, others only open to certain professions, or only if you can prove an interest in the land
- Institutional context vary considerably. National context should be taken into account, e.g. in some countries there is one organisation, in others there are several. At practical level, some countries require legal body; others resist a legal body before joining.

The EULIS case provides a number of interesting lessons for the development of PEGS and confirms findings in other cases:

1. Effective collaboration can be achieved and sustained but it requires hard work and cannot be taken for granted
2. Operational success requires active marketing, management, gathering political support, dealing with legal and regulatory issues
3. Grow step by step: give the business model and the organisation time to mature, strive for convergence, rather than harmonisation, deal with interoperability through multilingual services, and localised product development
4. The business model should be flexible and open to change in light of new experiences and customer feedback
5. Importance of market awareness; need to seek and attract the right sponsors, identify new opportunities, and threats.

eJustice; The Vision of a European Justice portal

The eJustice portal complements the two bottom-up cases above. It is a G2G/G2B application developed by government departments in a few leading MS (Justice Ministries), using the EU institutional mechanisms (council working groups) for coordination and leverage. It thus has interesting lessons for the initiation of inter-governmental initiatives and the role of the Commission in governance, financing and operational involvement. In addition the service foresees to provide access to private initiatives and could contain useful lessons for such public –private role.

eJustice is becoming an important application area for eGovernment solutions. Member States (MS) and European Commission are interested in developing this area further. Due to issues of competence, and a tradition in national sovereignty, the role of the Commission has traditionally been weak and MS have been hesitant to engage in full EU cooperation.

Three countries with a high degree of maturity in eJustice applications (Germany, Austria and Italy) initiated a project, to make cross-border interconnection of existing systems, without changing their national systems. During justice conferences from 2005 on, the initiative received more attention. During the German presidency the EU Council took over the initiative. Subsequently a project of building a European eJustice portal was launched, including the insolvency registries of eight MS (i.e. Austria, Germany, Italy, Slovenia, Portugal, Estonia, the Czech Republic and Poland) to prove the technical feasibility.

The eJustice portal has been developed to provide an interoperable infrastructure for internal and external users; enabling a number of different applications: access to registers; data retrieval; legal notifications, is important in countries such as Italy, as it can dismiss an entire case if notification is not correct; and finally obtaining evidence, e.g. video conferencing.

To make the portal work agreement has to be achieved on setting some general standards; typically these include a service orientation, standardised PKI and security architecture, formats, protocols identification and authentication. There also needs to be sufficient scope and flexibility for dealing with the requirements of individual Member States and to allow the system to be scalable. For this a 'standard grid' is generated (see Figure F for illustration). In developing the portal great care is given not to intervene in national systems and approaches. The applications are developed gradually and based MS initiatives.

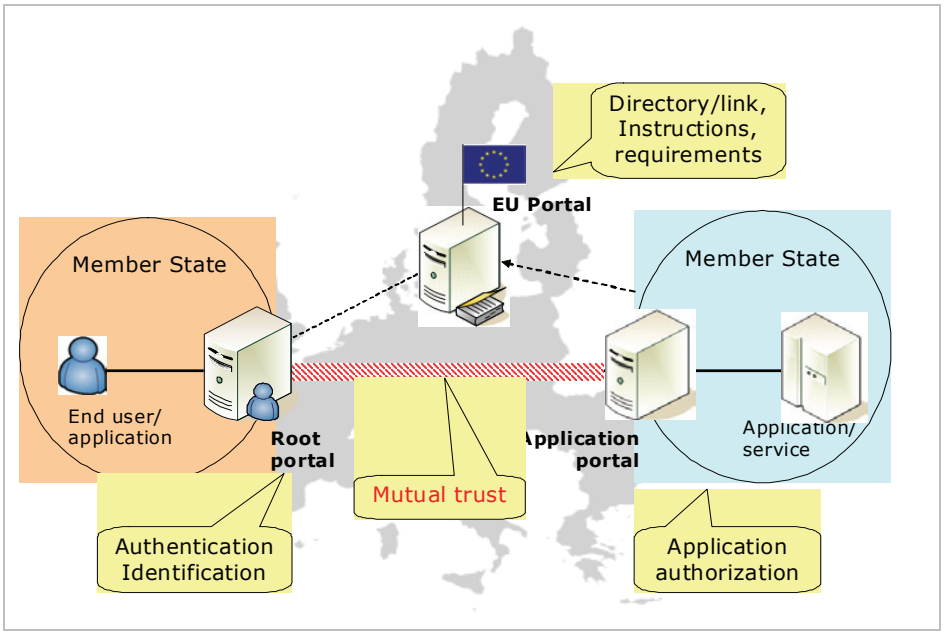
Figure F: Example of a 'standards grid'

		standard grid						
		Requirements for root portals		Requirements for end-user				
Application	Type	Roles	Unique ID	Formats	Digital Signature	Encryp.	e-mail	pay
Order for Payment	Document issuing	lawyers	✓	XML PDF	advanced	✓	Certified	Yes
Civil procs' infos	Web access	Lawyers professionals	✓	XML	--	No	--	no
Civil notifications	Document	Lawyers Professionals	✓	XML	--	✓	Certified	No
Authentic docs' copies	Document	Lawyers Professionals	✓	XML PDF	--	✓	Certified	Yes
Supreme Court procs	Web access	lawyers	✓	XML	--	No	--	Yes

Source eJustice (2008)

The architecture is decentralised, but with a strong coordination element (see Figure G). Central requirement for allowing this system to work is trust between the MS, the actors/users and the systems. MS and users dealing with the portal find the instructions etc. online, as published by MS, so that others know how to approach a system/country. This is the top level architecture. Authentication and identification is done decentralised by MS, to which the end-user belongs, only then can you use the applications provided by other MS on the application portal. Thus MS provide information on their own applications. Not everything is available to all (e.g. some only to qualified lawyers) (See Figure F).

Figure G: eJustice Portal Architecture



Source: eJustice 2008

In practice the user requesting a service acquires a 'permission' receipt from the EU portal with which the application can be obtained via MS portals (authentication and service provision). Requirements and instructions are provided in all languages at the EU server. Templates of services and applications depend on the type of application and the country context; thus there is substantial variety which can be dealt with through specific guidelines available in different languages about how to proceed in a certain MS.

A Communication by the Commission is anticipated to provide a coherent strategy for eJustice. Such a political endorsement is important, as it provides a formal mandate to develop the service and facilitates the seeking and giving of financial support. The eJustice portal is expected to remain roughly as it is, i.e. decentralised.

Securing the necessary financial support is the next big challenge. Future steps will be to interconnect public and private initiatives, opening up possibilities for generating revenues. How this will work out in practice depends largely on MS laws (e.g. the European business register (EBR) is private and EC funded. The ambition is to connect EBR to the eJustice portal, yet many ministries of justice are not mandated to deal with this, as the registries are privately owned). Another challenge is the development of effective eID management. A lot is expected of the CIP ICT PSP pilot on eIDM by the STORK consortium.

National eGovernment services with PEGS potential

HELP; a leading citizen-centric application

HELP[84] is an example of an eService that has the potential to develop into a multinational type of PEGS. The service is an Internet platform (or portal) that was initiated in 1996/97 by the Austrian federal government and administered by the chancellor's office. It delivers services to everyone who has to deal with Austrian authorities and institutions. It provides a best practice model of a one-stop-shop and thus a good example of how eGovernment services meet the requirements demanded by article 8 of the Services directive.

HELP is organised along 'life events'. The essential goal of this structure is to make it easy for the user to find, understand and relate to the content provided. When the service was founded in 1996/1997 it covered only eight life events (driving license, car registration, passport, identity cards, marriage, divorce, birth and death) – today it covers almost 200. HELP is offered in German and English and addresses Austrian citizens as well as people from other countries who live and / or work in Austria or who have any kind of interest in this country.

To keep a portal like HELP up and running, requires a relatively complicated organisational structure. Its operations rely on interplay of the Chancellor's Office, the government departments, Net Value (consultancy), and the Austrian Computing Centre.[85] The Chancellor's Office is the leading organisation, responsible for editing raw

84 See www.help.gv.at.

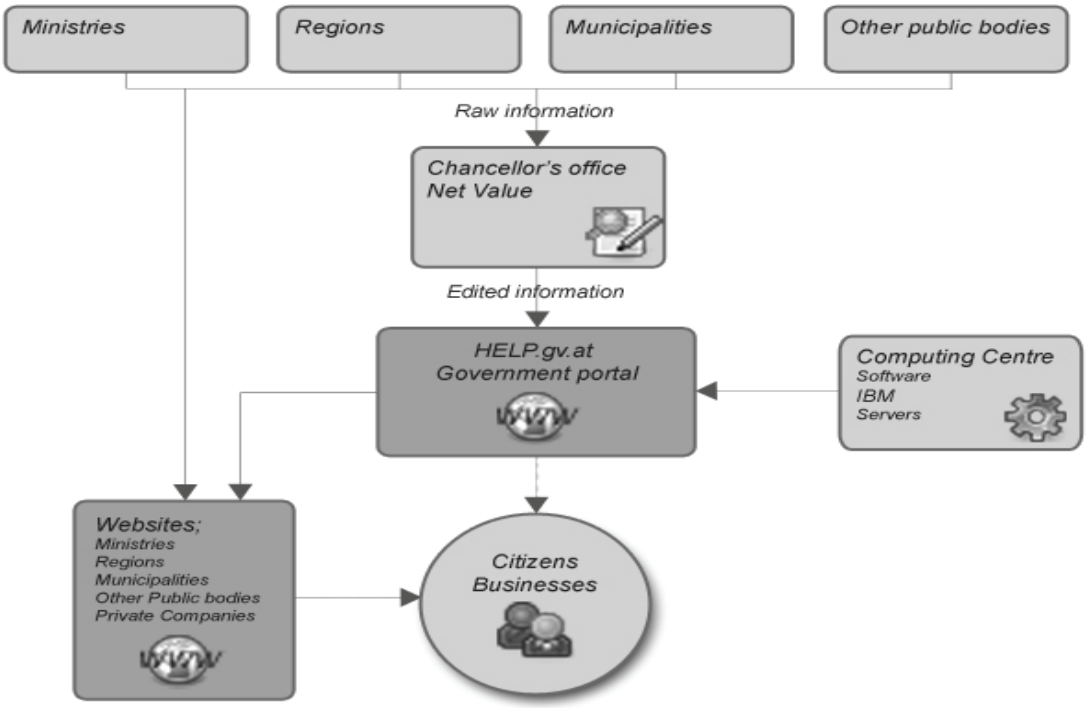
[85] The Computing Centre is a shared service centre that is working for the ministries of internal affairs, finance, justice, the chancellor's office as well as other public bodies. This institution, in which the Austrian government holds a 100 percent share, is the leading IT-service provider of the Austrian public administration. See http://www.brz.gv.at.

information on life events that is delivered by ministries, municipalities and other involved parties before it is fed in the HELP portal (see Figure H).

In principle, the ministries are responsible for answering questions in which they have their competence. In practice, however, only 20 percent of the questions are answered by the ministries where the other 80 percent are being answered by the Chancellor's Office. This is in some cases due to resistance and time constraints within some of the ministries, and in some cases to the fact that sometimes information from different departments is required.[86]

Net Value's contribution to HELP consists mainly of editorial work on the content that is added to the portal, ensuring a consistent look and feel of the website and assisting the Chancellor's office in decisions regarding the development of the portal. The Austrian Computing Centre is responsible for all technical issues involved in keeping the platform running and taking care of daily problems as well as for the development of new applications. At the Centre, three people are working full time on HELP, one of whom takes care of the day to day operations while the remaining two take care of the development of new applications.

Figure H: the flows of information in HELP



Source HELP.at 2008

[86] The life event "apprenticeship" for example requires input from around nine ministries and institutions that have responsibilities in this area. If a specific question is asked, it can be complicated to determine who should answer. This mostly ends with the Chancellor's Office doing the job.

The architecture and technology of HELP is offered to organisations in other European countries and, according to those who are responsible for the project, it has thus become one of the leading eGovernment applications in Europe, meanwhile also implemented in three regions in Germany (Baden-Wurttemberg, Saarland, and Saxony).

Belgian Social Security; an inclusive national solution

An example of how a network of databases can reduce administrative burdens for public authorities, businesses, and citizens, is provided by Belgian Social Security.[87] This project has been initiated and is operated by the Crossroads Bank for Social Security and the National Office for Social Security. Its aim was to improve collaboration and digital data exchange between more than 2000 social security organisations in Belgium. For citizens, companies, and professionals in the social security sector, Belgian Social Security works mainly as an information provider.

The Belgian eGovernment strategy initially focused on integrating the back office as the ultimate priority. Problem here is cost, capacity and capability of IT in government. Back office maintenance staff are not used to having large budgets e.g. to run large programmes: lack of skills in management of projects, resources, complexity. With the back office essential other building blocks must be considered before focusing on the applications/services: network; gateway; portal; secure tool (citizen card).

Having these building blocks in place has greatly facilitated the development of the social security portal. Of particular relevance is the fact that all citizens in Belgium have an individual identification number and a social identity card (an official memory chip card that can be used for identification at any contact with the social sector), and that all companies have a single identification number. To enable all actors in the field of social security to join the network and to be able to process al sorts of documents, the ePortal is based on open standards. The degree of service integration is very high, as all social security-related services are covered.

The service is provided in French, Dutch, and German. Some information is also given in English. The service is offered to nationals, Belgian citizens who work abroad but are still related to the Belgian social security system, and to citizens of other countries who work in Belgium. All Belgian companies, more than 220,000 employers, use the system to provide the social security institutions with the required data about their employees. Employers benefit because they do not have to reproduce the social security data manually any longer. Employees benefit as transactions are conducted much faster than through a paper-based system and security and reliability of transactions are improved. The system has been offered to other countries, but so far no take-up has taken place.

e@SY Connects; multi-channel inclusive local eGovernment

e@SY Connects (e@SY = Electronic services for South Yorkshire)[88] is an example of an advanced regional eGovernment service that shows potential to develop into a multinational PEGS. It is a project of the local governments of Barnsley, Doncaster, Rotherham and Sheffield in South Yorkshire, UK. e@SY Connects provides citizens with

87 See https://www.socialsecurity.be.

88 See http://www.easyconnects.org.uk.

easy access to citizen information and services. eInclusion is one of the major policy goals in Europe and e@SYConnects provides one of the most advanced and successful examples of how eGovernment services can master this challenge.[89] Mobile phones and digital television are the main devices to provide access to information to those with no or insufficient computer experience.

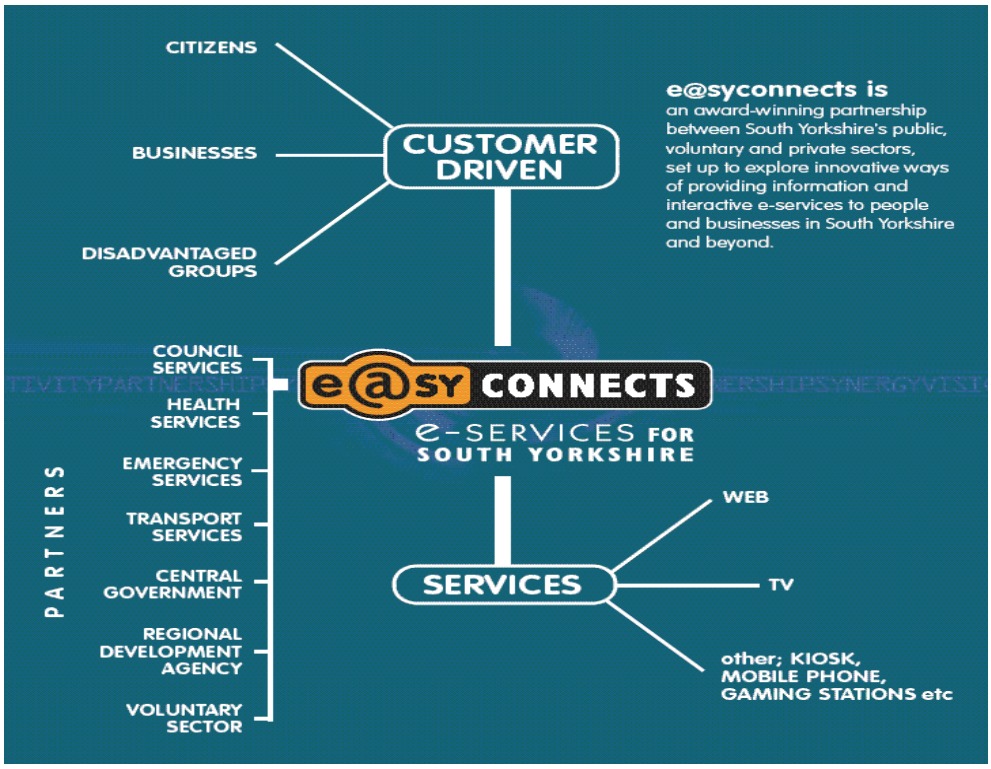
The scope of users is large, as e@SY Connects has become a vital information channel for many thousands of people in Yorkshire. The benefits for users as well as for providers are obvious, as e@SY Connects has allowed the public and private agencies involved "[...] to identify and meet more effectively the needs of the people and businesses they serve across existing boundaries".[90] eInclusion is a major goal of e@SY Connects.

Technologically, e@SY Connects is very innovative, as the simultaneous use of the internet, the mobile phone, the digital television and traditional information channels had to be created from scratch. The usage of open standards facilitates the integration of different services and applications. In the beginning, service innovation was less of an issue than integrating different information channels and providers. A considerable degree of service integration has been accomplished, which comes along with a reduction of bureaucratic burdens. Nowadays, the focus has shifted toward developing and offering new services.

[89] See also Ministerial Declaration on eInclusion (European Commission, 2006e), which emphasises the opportunities provided by ICT in order to achieve improvements with regard to the i2010 goal of eInclusion.

90 Diederen et al. (2008).

Figure I: The e@SY Connects service domains



Source: Gary Davis e@syconnects (2007)

The main governance body is the Board, where all stakeholders are represented; e.g. the local governments of Barnsley, Doncaster, Rotherham and Sheffield, representatives of health authorities, emergency services (Ambulance, Fire and Police), voluntary groups, the Yorkshire Forward (a regional development agency), the South Yorkshire Passenger Transport Executive, a job centre, and many associate members, such as carers and local business organisations. The board operates independently of the participating organisations, though collaboration between board and partners is tight, due to personnel overlaps. The chair of the board changes every six months. Tasks and responsibilities within boards are usually clearly defined on a formal level, but informal arrangements help the network to function and to meet user demands.

Close involvement of the board with the eService organisation is crucial to maintain focus and to ensure budget. For instance, the board of e@SY Connects and its partnering organisations gather information on user needs and satisfaction with the service through surveys and focus groups (addressing specified groups of people) and collaborate with the voluntary sector and groups of juveniles and disadvantaged. Furthermore, e@SY Connects is funded by the partnering organisations in two ways. There is a general financial contribution and there are project-specific contributions. This model ensures that projects to develop e@SY Connects maintain the active support of the majority of its members. It sometimes prevents specific projects to go through because of lack of financial means in case they do not meet the interests of enough board members.

Media@Komm Transfer; leveraging good practices

Media@Komm Transfer[91] is an initiative of the German Federal Ministry of Economics and Labour and is a final example of a (potential) multinational PEGS. It builds upon the Media@Komm initiative (1999-2003) that developed more than 300 advanced eGovernment solutions for German municipalities. Media@Komm Transfer aims at developing transferable best-practice concepts while taking into account established e-government standards and proven procedures, including the expansion of international contacts and co-operation to promote the digital integration of Europe. With regard to serving citizens' needs, it probably cannot compare to the other eGovernment services that are discussed here. However, since it intends to harmonise the development of local e-government and promote the transfer of best practices and know-how, it provides a very instructive showcase of how procedures, technologies, and services that are developed in one public authority can be implemented in other public authorities, regions, and countries.

Media@Komm Transfer is based on 20 local authorities ("transfer municipalities") from across Germany that have founded an e-government network. The consulting company Capgemini (2005) has been selected as "transfer agency" in order to control and coordinate the activities in the transfer municipalities. In practical terms, Media@Komm Transfer harmonises concepts, procedures and technical aspects such as formats for data exchange, links developments that have been made in parallel and without knowledge of each other, and improves thus the interoperability of e-government procedures.

The benefits for citizens as well as for public authorities are substantial because it reduces duplication in development efforts, and it makes government services faster available, easier to use and more transparent due to the harmonisation. The degree of service integration is very high, which leads to a reduction of bureaucratic burdens.

The project resulted in a set of guidelines for best practice transfer based on the practical experiences gained in German model cases (see Box A). These are relevant for eGovernment more in general and also for the good practice exchange at the EU level. They echo many of the findings in other cases and views expressed in EUReGOV workshops.

91 Accessible through http://www.innovatorsclub.de.

Box A: Media@komm Transfer list of critical issues in scaling up local services and exchanging good practices

Media@Komm Transfer lists the following critical issues:

a) A *common vision and strategy* from all actors already when an eGovernment solution is in the planning phase. This vision and strategy must not be project specific; it can also be developed by public authorities, economic actors (e.g. chamber of commerce), private initiatives, and the like, in order to become a general vision of eGovernment in a country. This would help overcoming the problems arising from too many isolated efforts to find solutions for the same problem, which results in a manifold of solutions that approach the same problem in different ways, so that no potential user can easily decide which solution would be best for him.

b) *Effective organisation*, project and change management. This requires a fundamental modernisation of traditional administrative structures and processes, with clearly defined tasks and responsibilities and intensified collaboration with external partners.

c) *Cost-benefit analyses*: improved citizen participation may result in additional work at the administrative level. Each element of an eGovernment solution should be considered with regard to its purpose and the expected benefits and its cost.

d) Technologies should be *adapted to user needs*, especially with regard to the implementation of electronic signatures, security issues, and the channels through which other public authorities, citizens and businesses can access the services.

e) Staff in public authorities and involved external partners must be *trained and motivated* in order to ensure that the eGovernment solution achieves its goals and satisfies the needs of service providers and users.

f) Promotion of eGovernment solutions require coordinated *communication*, internally within the public authority as well as to the external public.

g) *Sustainable resources* must be secured, especially financial means, technical infrastructure, and trained staff. eGovernment services require maintenance and periodic modernisation.

h) Legal aspects, especially *IPR issues*, must be considered seriously when an eGovernment solution is created with the aim to disseminate it.

Source Media@Komm 2007

Comparative Cases: Non EU or Non-government cross-border services

To explore how far other actors would enter and mobilise the PEGS domain an in depth case study was conducted of public eServices by a civil society organisation MySociety. To look at learning from the private sector's approach to establishing pan-European eServices we explored the development and approach to establishing a Single Euro Payment Area (SEPA). Finally, to also review solutions found outside the EU, the Canadian eHealth care

service was reviewed. This case was chosen because of the cross-province and bi-lingual nature of the Canadian situation, mimicking to some extent the EU situation.

My society; an innovative civil society actor in the public sphere

mySociety develops eServices. These are intended to augment citizens' access to government, and fill some of the gaps between citizen needs and government services. In so doing, they often highlight these gaps in ways that may also be useful and/or instructive for the development of PEGS. mySociety has two missions:

To be a charitable project which builds websites that give people simple, tangible benefits in the civic and community aspects of their lives.

To teach the public and voluntary sectors, through demonstration, how to most efficiently use the internet to improve lives.

Although they are stated quite broadly, these missions are clearly intended to be interpreted in the context of eGovernment. These missions have led to the development of a number of innovative eServices that give citizens access to some aspect of government that mySociety staff members—based on their own experience as citizens and participants in government, as well as on input and feedback from eService users—perceive as not currently (or effectively) provided by government itself.

Box B: Services developed by mySociety[92]

FixMyStreet (launched 7th March 2007) *This site allow citizens to report, view, or discuss local problems, such as graffiti, fly tipping, broken paving slabs, or street lighting. Developed in collaboration with the Young Foundation*

HearFromYourMP (launched 21st November 2005) *HearFromYourMP encourages and enables MPs to run email lists for their constituents, and to allow those constituents to discuss ideas in a way which doesn't bombard them with email. 5,000 people had signed up before it was even launched.*

PledgeBank (launched 13th June 2005) *PledgeBank is about reassuring people who want to do something altruistic or socially beneficial that they won't be alone in their actions. It lets users create pledges which say "I'll do something, but only if 10 other people will do something"*

NotApathetic (launched 7th April 2005) *NotApathetic was built so that people who were planning not to vote in the UK General Election on May 5th 2005 had the chance to tell the world why.*

WriteToThem (launched 14th February 2005) *WriteToThem.com enables citizens to contact any of their elected representatives. Entering a single postcode will tell users who all of their local representatives are, along with information about which ones to contact for which reasons.*

TheyWorkForYou (launched 6th June 2004) *TheyWorkForYou provides a searchable, annotatable version of what is said in Parliament, as well as useful pages providing clear, non-biased information on a range of different measures of activities by MPs.*

[92] See http://www.mysociety.org/.

E-Petitions (launched 14th November 2006) *This site was built by mySociety for 10 Downing Street as a civil service commissioned project to allow members of the public to petition the Prime Minister about whatever issues they see fit.*

Freedom of Information Filer and Archive *mySociety is building a website to help people make Freedom of Information requests from different parts of government.*

Source mySociety website (2008)

The eServices that have been developed by mySociety have attained considerable recognition, both in the UK and throughout much of the rest of the Internet-connected world. The appeal of these eServices appears to be attributable to both their functional innovation and the simplicity and usability of their user interfaces. The services have attracted interest from government agencies, foundations, and commercial enterprises; sometimes leading to funding, collaborative projects, or contract work for mySociety; and numerous efforts by other groups to replicate mySociety eServices, whether by cloning or emulating mySociety code, reverse engineering that code to create equivalent code, obtaining advice from mySociety in recreating one of its eServices, or independently reimplementing the concept underlying a mySociety eService.

Some of the characteristics of mySociety's eServices that appear to have made them so interesting to so many parties, include:

- Providing capabilities that will be of value to a broad range of citizen users
- Providing innovative capabilities that are not currently or conveniently available in any other form
- Having a clear, single purpose for each eService
- Leveraging existing government services by providing improved access and more usable interfaces to them
- Offering capabilities that are unlikely to be developed spontaneously by government agencies or to be requested by citizens
- Achieving a "sweet spot" that offers users a high level of convenience and utility coupled with a low level of complexity
- Relying on "strongly principled opportunism" to screen potential partnerships and contract work
- Undertaking relatively small-scale projects that are implementable by single programmers or very small teams in relatively short time frames with a modest investment of resources

Most of these characteristics arise directly from the nature of small civil society organisations such as mySociety. The agility of such an organisation and its ability to think outside the box of complex, large-scale projects enable it to realise the visions of its staff with a minimum of bureaucratic, process-laden overhead. Perhaps even more fundamentally, it need not agonize over what it should do or submit its ideas to widespread scrutiny before they have been implemented. mySociety relies on the intuition of its staff about what might be of value to users, combined with a trial and error approach

based on rapid adaptation of the service following user feedback. The high success rate of its projects suggests that this may be far more effective than the belaboured processes that are typically used by large commercial and government organisations.[93]

Similarly, its lack of process-heavy management enables mySociety to use the intuition and expertise of the designers and programmers on its staff to find the "sweet spot" for an eService, which balances functionality against complexity. Since there is no accepted calculus for determining the best such balance in an eService (or indeed, in any other kind of ICT system), such sweet spots are notoriously hard to find. Yet systems that achieve them—whether by accident or genius—tend to be successful and popular among users.

The relatively small scale of mySociety's projects is a key factor in their success. Although the small size of an organisation is no guarantee that it will be good at finding such sweet spots, the converse is quite likely: large organisations are frequently thwarted in their attempts to find such sweet spots by the complex and conflicting opinions of their large design teams, marketing departments, and other stakeholders. Successful intuition and expertise may be no more likely to be found in a small organisation, but they may be far more likely to be recognised, nurtured, unimpeded, and embodied in its eventual products.[94]

MySociety lessons for PEGS

Although none of mySociety's eServices made the transition to a PEGS during the scope of our study, a number of them have been replicated in other Member States, thereby achieving a degree of European 'permeation', and mySociety appears to have some potential to produce PEGS in the future. In addition, the characteristics of mySociety eServices discussed above seem to offer several lessons that may apply to the development of PEGS. One caveat must be noted: the extent to which lessons derived from mySociety apply to the development of PEGS by government agencies, as opposed to small civil society organisations. It remains an open questions whether some types of PEGS (for example, those requiring customised "back office" support or intensive coordination of effort among Member States) may be more effectively developed by government agencies, in which case the lessons derived here must be re-examined and revalidated in the context of those agencies.

An important lesson is that neither governments nor citizens may be the most fertile breeding ground for developing eServices. Governments may in general be too process-heavy to muster the required agility, expertise, and intuition needed to develop innovative eServices, whereas most citizens may lack the technological imagination to envision innovative eServices that would be of use to them. Instead, small, agile organisations such as mySociety (or possibly small commercial ventures) may be more likely to generate ideas for such services.

A related but independent lesson concerns our notion of the sweet spot, as discussed above, which balances the functionality of an eService against its complexity. Although finding

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[93] Tom Steinberg served in the Prime Minister's Strategy Unit before founding mySociety, which provided him with an insider's view of the workings of government.

[94] See for example, Cockburn (2002). or Ambler(2006).

such a sweet spot is an art, it is well worth the effort if it leads to the development of systems that users find easy to use effectively. This appears to be generally true of mySociety's eServices and suggests that PEGS may achieve similar levels of acceptance by following a similar design strategy. Regardless of where the idea for an eService arises, it is more likely to result in a system that has a clear, well defined purpose and that achieves the sweet spot that will make it successful if it is developed by a small, agile organisation that can harness the expertise and intuition of its designers and implementors without undue constraint and interference.

A related third point is that the attempt to achieve this sweet spot appears to foster innovation. Both the range and combination of capabilities that are provided by an eService and the mechanisms that are used to deliver those capabilities appear to become more innovative when they are balanced against each other. On the one hand, the balancing process itself can be considered a key innovation, while on the other hand, this process often results in a system whose integration and clarity of purpose and whose intuitive user interface combine to offer users an innovative means of accessing and interacting with government.

A fourth lesson is that governments may not be well suited to developing eServices that leverage their own existing services. Any organisation that provides existing services tends to exhibit considerable inertia in changing those services, combined with tunnel vision when considering how they might be changed. A trivial but illustrative example of this is the aforementioned lack of a prominent "pay taxes" button on a UK tax site: since such a button has no analogue in the pre-digital world, it presumably did not occur to the site's designers to include one on the site's home page. This suggests that non-government groups may be more effective at developing innovative and appropriate eServices than government organisations themselves, even—or perhaps especially—if the services in question rely on underlying capabilities that are provided by the government. As noted above, however, some types of PEGS may be more effectively developed by government agencies, for example, if they require modification of back office processes or coordination with other Member States.

A fifth lesson is that eServices should be responsive to user feedback, as well as to the evolving needs and capabilities of relevant government agencies. They should be modified and improved in response to these evolving factors, while maintaining or extending their balance between simplicity of use and functionality, i.e., maintaining or re-establishing their sweet spot.

A final lesson concerns the development of PEGS. Although our project examined only a single organisation, it studied a number of distinct eServices developed by that organisation, several of which seem to have at least some PEGS potential. Yet none of these services have evolved into PEGS, despite the fact that several of them have achieved European permeation by being replicated in other countries. The speculative lesson here is that PEGS may be unlikely to grow spontaneously out of geopolitically localised eServices or to emerge from groups whose primary focus is on working with citizens and local governments in a single country. Instead, the development of PEGS may require the concerted efforts of interest groups that have the focus and vision to create PEGS.

Canadian telehealth case; cross-border provision of care outside the EU

This 'case study' examines three telehealth providers in three provinces: The Ontario Telemedicine Network in Ontario[95], MBTelehealth in Manitoba[96], and Capital Health's Regional Telehealth in Alberta[97]. For the most part, our observations are presented in aggregate, treating these three organisations as representing Canadian telehealth as a whole: we will refer to them collectively as "these telehealth providers" except where it may be necessary for our analysis to distinguish aspects of individual organisations. Our analysis is limited to those aspects that we feel are particularly relevant to the development of PEGS[98].

Funding and oversight

In general, these telehealth providers are reasonably well funded and enjoy good relationships with their governing organisations, the federal government (with whom they interact on matters concerning First Nations peoples), provincial Ministries of Health, local Regional Health Authorities (RHA), boards of directors, advisory committees, Infoway, etc. They perceive their internal management, oversight and other relevant stakeholders as respecting and supporting their missions, responding to their needs, and generally providing good support for their activities.

Missions

The ultimate mission of the telehealth providers is to use ICT to improve access to and delivery of healthcare and education and research related to healthcare. This should eventually include the provision of seamless access by physicians to electronic medical records (EMR), real-time information about their patients, diagnostic and laboratory results, radiology, specialist consultations, etc. However, the current low adoption rate of EMR in Canada and the limited interoperability of existing medical systems makes this vision of seamless interaction a vision of the future. The current most frequent clinical case involves remote consultation services and videoconferencing to link patients to one or more physicians, diagnostic facilities, or other resources. Videoconferencing is also used extensively to deliver healthcare education to rural or remote healthcare providers or facilities, and to connect to remote family members.

Cross-border telehealth

Although for the most part, each of these organisations delivers its services within its own province, they provide a number of cross-province services, as well, providing an analogy to PEGS. In addition, even within its own province, each of these organisations may provide services that cross intra-province jurisdictions, such including the boundaries of multiple Regional Health Authorities.

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[95] See www.otn.ca

[96] See http://www.mbtelehealth.ca

[97] See http://www.capitalhealth.ca/EspeciallyFor/Telehealth/default.htm.

[98] In addition, the reader should bear in mind that perceptions and opinions that we attribute to these organisations in aggregate are extrapolated from the responses of a small number of individual respondents and may therefore not be representative of all or even most members of these organisations. Since our analysis is based on a necessarily cursory examination of the three telehealth providers we studied, we apologize for any inaccuracies, misrepresentations, or misinterpretations found herein.

However, there is no reason to expect cross-province interaction to be an explicit goal for any of these organisations, since it is not an end in itself. In fact, such interaction may be little more than an artefact resulting from the relative distributions of population, medical facilities, and provincial borders in Canada. For example, MBTelehealth works across RHAs, each of which has traditionally had a different network infrastructure, which has led to interoperability problems (although these are now beginning to move toward a more integrated approach). These cross-entity activities are somewhat analogous to supranational PEGS, in which a centrally provided service is nevertheless distributed across infrastructure belonging to multiple European Member States. Moreover, when service crosses into another province that has its own telehealth provider, these interactions become analogous to cross-border PEGS.

Most cross-province interactions are initiated by individual healthcare providers or hospitals. In most cases, these are motivated by the proximity of some physical facility or centre of expertise across a provincial border. For example, patients in Quebec may cross the border to visit specialists in Southern Ontario, and patients from all over Canada may utilize the expertise of the organ transplant centre of excellence at the University Health Network in Toronto (Southern Ontario). Any such physical use of cross-province medical facilities is likely to be supported by corresponding cross-province pre-operative and post-operative telehealth consultations fielded by the province in which the visited facility is located. This linkage between the locations of physical facilities and the telehealth facilities that support them has interesting implications that may apply to some European PEGS cases as well, as discussed below.

Motivation and drivers

The Canadian case illustrates an interesting duality in terms of how cross-border eServices may arise. The primary motivation for telehealth care delivery in Canada is the perceived demand from citizens, which can be inferred from their travel patterns and corresponding cross-jurisdiction reimbursement patterns. The extent to which citizens travel to obtain healthcare services implies a need for telehealth services to support the physically remote delivery of such care. Canadian telehealth providers have emerged in response to this demand, and once having been created, they perform several supply-side functions that may increase the prevalence and acceptance of telehealth care delivery.

The mere existence of such organisations makes telemedicine more feasible, but in addition, they actively work with healthcare providers to increase their awareness of telemedicine potential and help them adapt to this new paradigm. Also, their educational role increases their visibility, even when the educational subject is not directly related to telemedicine.

One European analogy to this may be to analyze patterns of the physical movement of citizens (travel) and cross-border reimbursements for various specific purposes, in order to identify services that could be provided virtually. Some of these may be satisfied by national eServices, but cross-border travel may be a good indication of the need for PEGS. Once created, PEGS may also perform outreach and education functions to help users make the paradigm shift toward using them as an alternative to travelling.

Challenges and facilitators

Several key challenges confront Canadian telehealth organisations.

- *Scheduling physical facilities*. On a day-to-day basis, the main operational challenge that faces Canadian telehealth services is the scheduling of the physical facilities needed to support telemedicine. Remote consultation requires network linkages and sufficient bandwidth, which must be ensured by infrastructure development, but it also requires the scheduling of rooms and other resources.
- *Paradigm shift:* the paradigm shift that it requires among both healthcare providers and patients, requiring considerable efforts working with individual physicians and healthcare organisations to increase awareness of the potential for telehealth care delivery in Canada.
- *Bandwidth is a constant concern:* The current ICT infrastructure in Canada still seems sufficient to support telemedicine in its most common present forms. However, even for these purposes, bandwidth is a constant concern, since videoconferencing, places significant demands on ICT networks. Some quality of service (QoS) mechanisms are employed to help address this issue.
- *Interoperability:* A deeper and longer-term technical issue is interoperability, especially as greater integration is sought among medical systems and services, following the vision of the seamless access by physicians to EMR, real-time information about their patients, diagnostic and laboratory results, radiology, specialist consultations, etc. Infoway offers some help in this regard by proposing and promoting pan-Canadian technical standards.
- *Regulatory issues:*
    1. Licensure: The main regulatory issues confronting telehealth providers are those concerning credentialing and licensure. The Canadian Public Hospitals Act requires physicians to be credentialed at each facility (e.g., hospital) at which they work. But telemedicine enables a physician to work remotely at dozens of different hospitals, and the locus of care may be considered to be the patient's location rather than the physician's. This licensure issue is recognised as a potential obstacle to telemedicine, and the problem is beginning to be addressed throughout Canada.
    2. Compliance: the need to conform to local laws or other standards and criteria. A physician may be held accountable for providing services that meets the standard of care in a given locality. Yet the relevant locality may be that of the physician's residence, the patient's residence, or the location in which the service is actually performed. In an increasingly virtual environment, this may become a significant issue, creating liability problems for PEGS and other eServices.
    3. Privacy and security regulations affect telemedicine, as well as other aspects of IT and healthcare in general.

Lessons for PEGS

This Canadian telehealth case study reveals several interesting phenomena that have implications for PEGS and European eServices in. The most salient feature of telehealth provision in Canada is its linkage with the provision of physical healthcare services. In cases such as clinical procedures, laboratory tests, surgery, etc., patients typically receive care in a

physical facility, such as a hospital, clinic, or doctor's office. In such cases, telemedicine may be used to conduct pre- or post-event consultation, diagnosis, follow-up, or contact with geographically dispersed specialists, family members or others supporting the patient. Although consultation and diagnosis may be performed remotely by virtual means, the core medical service that is being delivered is typically performed in a physical facility. This physicality of telemedicine stands in contrast to many (though not all) other eServices, whose delivery involves no special physical entity, whether human or inanimate, and can therefore be conducted entirely virtually, in cyberspace, without necessarily having a meaningful locus of performance.

The linkage of telemedicine to physical facilities or other assets that have geographical locations means that at least some (and in many cases most) of the telehealth care service provided in association with a given episode of care will emanate from these facilities or assets. This leads to the cross-border usage of such services whenever they are linked to cross-border medical visits or healthcare provision. One implication of this physical linkage for PEGS is that any European eService that is similarly linked to a service having a specific physical locus may best (or at least most probably) be provided by an eService hosted by whichever country contains that locus, regardless of where users of the eService happen to be. Localised informational resources or expertise may play the same role as more tangible physical assets. Conversely, in cases where no physical assets underlie the constituent eServices in PEGS, it may not be as important to interoperate among multiple national services.

A second insight afforded by the Canadian case is that geographic location may be relevant for regulatory purposes, even if it is not strongly tied to any physical asset. The licensure and credentialing issues noted above are prime examples of this. Although they may traditionally be tied to the location of a physician's residence or of a physical facility with which a healthcare provider is affiliated, these are legal constructs that may have no essential physical foundation.

This too has implications for the European context. Many such constraints are the result of pre-network thinking, in which the virtual erasure of geography was never envisioned and so did not make its way into the legal framework. In some cases, there may be no compelling reason to retain these constraints; but even so, amending the regulatory framework that embodies them may require considerable time and effort. In other cases, the unavailability of network technology may not have been the only motivation for the constraint, or removing the constraint may have additional consequences, in which case modifying it may require further thought and care. For example, although it may seem somewhat arbitrary to license physicians in the countries in which they reside, the alternative introduces questions of what authority should take over the licensing task and how its licensing criteria should be defined.

Box C: Summary of lessons for PEGS, for the Canadian Telehealth Case

The technical, bureaucratic, regulatory, and operational characteristics of this case appear to be relevant to PEGS and European eServices, particularly those that are tied to physical assets. Implications for PEGS include:

a) PEGS that are linked to a service having a specific physical locus may best be hosted by whichever country contains that locus.

b) Patterns of cross-border interoperation among the national eServices that comprise PEGS may correspond to the distribution of physical assets underlying those eServices. Conversely, in cases where no physical assets underlie the constituent eServices in PEGS, it may not be as important to interoperate among multiple national services.

c) Geographic location may be relevant for regulatory purposes, even if it is not strongly tied to any physical asset. Although such legal constraints may have no essential physical foundation, removing them may have unobvious consequences, which should be carefully analyzed.

d) PEGS may have to conform to other local laws, standards and criteria. In an increasingly virtual environment, it may be difficult to determine which such local constraints apply, thereby creating liability problems for PEGS.

e) Cross-border travel and reimbursements may be a good indication of the need for PEGS. Once created, PEGS may also perform outreach and education functions to help users make the paradigm shift toward using them as an alternative to travelling.

Source RAND Europe EUReGOV 2008

SEPA; a private sector approach to multi-stakeholder cross-border cooperation

The SEPA case represents an example of how the private sector deals with multi-stakeholder problems and the development of pan-European eServices. The Single Euro Payments Area (SEPA) is an industry initiative by European banks started in 2002. The project is concerned with the development of European business rules and standards for both domestic and cross-border payments in Euros. The SEPA initiative has delivered clear and timely results in an environment of 31 countries, thousands of banks, and multiple stakeholder groups (regulators, businesses, consumers).

Figure J: The SEPA environement

Source: ABNAMRO 2007

The first initiative came from Brussels, with the Lisbon agenda to develop the internal market. The main drivers at the EU level are the European Central Bank (ECB), European Payments Council (EPC) and European Commission (EC). Banks then took the lead by creating SEPA, to ensure alignment of communications between stakeholders towards the market and to agree on the necessary processes. The EU (EC and ECB) acted as a watchdog to help meet the deadlines and achieve the milestones.

The objective or SEPA is to develop the internal market for payments based on self-regulation by the banking industry in Europe. The initiative is not typical for the private sector as there is probably no short term business case; the benefits of SEPA are expected to materialize only on the longer term. After going live in 2008, the migration from domestic payment schemes to SEPA will start. By 2010 a critical mass should be in place and a sufficient part of the banking platforms should be transferred. Because the payments business is essentially a network business, banks need to co-operate to create the playing field for competition. This means that rules and standards need to be defined.

Challenges

A key challenge of SEPA is legacy and *migration* – getting the existing countries to use the new SEPA payment instruments and migrate from their old domestic environment. This challenge is also present in PEGS and will be particularly difficult to deal with given the large number of systems per Member State and varying stages of deployment.

The digital divide remains a problem and requires a multi-channel approach (phone, DTV, web, etc), to ensure access for all. It is also important to achieve sufficient *up take* and critical mass. The network effect will only kick in if a sufficiently large user group

exists. The underlying rationale for the low take up of e-Government needs to be further explored and identified.

Lessons learned from SEPA

The Multi-stakeholder model actually works – 31 countries, 6000 banks and associations, regulators, interest groups (corporates; SMEs; Merchants; consumers; public authorities). In order to achieve this, the primary stakeholders (champions) should be driving the process (in the case of SEPA, these are the banks supported by EC and ECB). In doing so, striving for consensus among stakeholders is good, but there is a risk that consensus breads weak compromise. Sometimes clear decisions have to be taken by majority voting or otherwise. This points at the critical requirement of having clear, transparent and effective governance structure and decisionmaking processes in place.

To allow effective project planning 'Frameworks' should not be too 'loose' and should prescribe clear rules and define (the use of) standards. A roadmap helps to define upfront with clear milestones and target dates. It is important that this is ambitious and realistic, in order to ensure that all parties can to stick to them.

A two tiered structure of EU level activity (for design and monitoring) and national level activity (communication and implementation) has been effective in separating the design phase from national implementation and migration.

Security is an important feature of any payment system. The development of a multi-bank security infrastructure (e.g. based on PKI) would however be very costly and implementation would be very difficult as well, having to replace existing solutions already rolled-out to a mass market. However, it has proven possible in some banking projects to leverage existing solutions while achieving interoperability at the user level. One example (in the area of secure e-commerce) is in the iDeal scheme in the Netherlands.

Applying best of breed technology does not always work in practice, due to political resistance resulting from different stakeholder or national interests. It is preferable to start from scratch but to build on the existing knowledge (exploiting the learning curve) to move forward. In doing this it is advised to choose where possible for simplicity rather than grand design and to apply available global standards, tailored for Europe.

Finally, effective project management is important and should receive due attention and resources. For developing cross-border eServices like PEGS parties should consider setting up a project secretariat in charge of continuity and support. Such a neutral (executive) secretariat is key to manage version control of the project documentation and to act as a knowledge hub.