



Innovative and adaptive pan-European services for citizens in 2010 and beyond

## **Impact assessment framework for cross-border and pan-European eGovernment services**

Deliverable WP3.D2

January 22, 2009

Prepared for DG Information Society & Media of the European Commission

*<http://www.euregov.eu/index.html>*

Rifka Weehuizen



# Executive summary

## Objective

This report is a deliverable of the EUREGOV project. It describes which elements should be taken into account specifically for impact assessment (IA) of cross-border and pan-European eGovernment services (PEGS).

## Context

This report is produced as part of the EUREGOV project, a project commissioned by the European Commission about "Innovative Adaptive Pan-European eGovernment Services in 2010 and beyond." Increasingly, eGovernment services are provided across the borders of EU Member States and at the European level. The EUREGOV project aims at providing more insight into this development, its driving forces, dynamics, impact, and the role of policy.

As part of the project, the PEGS listed in the Commission's good practice database have been analysed through selected case studies and in-depth discussions in two workshops. The aim was to gain more understanding of the basic characteristics of PEGS and the different ways in which they develop, and to identify different types of policy support for the development of PEGS, in terms of their effectiveness in different types and phases of PEGS development. As a result, the EUREGOV project provides a typology of PEGS, capturing the different forms, functions and development pathways of PEGS, which will enable policy-makers to think and talk about PEGS in a more insightful and effective way. In addition to some basic conceptual work, the project designed a composite indicator that can be used to measure and monitor the presence and development of PEGS in Member States and across Europe. Since at this point of time there are only a few full-fledged, mature PEGS, the indicator is designed to measure the degree to which services have developed into a PEGS, the extent to which they have a PEGS dimension.

Finally, in order to help policy-makers to assess the impact of PEGS (needed to develop a rationale concerning policy development for PEGS and expenditure on PEGS) The EUREGOV project provides an impact assessment framework, which is described in this report. Attention is given to both ex-ante and ex-post impact assessment.

## This report

On the crowded eGovernment agenda of public administrations of EU Member States, the development of cross-border and pan-European eGovernment services (PEGS) is only one of many issues, and generally not a very important one. Stimulating eGovernment at the national and local scale is often perceived as more important, more urgent, more manageable and more clearly within the mandate of a national public administration. Linking up those local and national eGovernment systems across borders towards a pan-European scale is not a primary concern. Because of this, important opportunities for increased effectiveness of national eGovernment are not taken, and the potential of digital technology for eGovernment is not used to its fullest. On the contrary, because of the emphasis on further developing national eGovernment systems without thinking

much about the European dimension, the future costs of linking up eGovernment between European Member States are effectively increased, and opportunities for co-development and for learning from each other across borders are ignored.

One reason for the low priority given to the development of PEGS at the MS level is a serious lack of awareness of the impact that such services would have, if developed. The potential impact of PEGS is high, due to a number of direct and indirect effects, but this is not perceived as such by policy-makers at Member State level. Also at the European level there appears to be a lack of recognition of the importance of PEGS beyond DG INFSOC. Since the potential impact of PEGS to a considerable extent derives from increasing the impact of policy in other policy domains (e.g. health, competition, justice), PEGS crucially enabling and facilitating the realization of these policies, the lack of a much broader and more informed awareness of the importance of PEGS is deplorable. It is thus important to shed more light on the different types of impact PEGS can have, so that the awareness of their importance can grow, and their development gains more priority on national eGovernment agendas in Member States and on the eGovernment agenda of the Commission.

In this report, a number of elements are discussed that should feature in any impact assessment of cross-border/pan-European eGovernment services (PEGS). Impact assessment serves different purposes in different phases of the policy cycle. Policy for PEGS is in many ways still in the begin phase of the policy cycle; PEGS are on policy agendas but there is not much policy aimed at PEGS development yet. An important function of impact assessment in this phase is to increase awareness of the full impact of PEGS (including the important indirect effects); to make sure that this is recognized and taken into account in the process of decision-making about PEGS development.

Since public service provision is in principle a national responsibility, policy-making for and expenditure on PEGS is located at the national level. While the costs are thus largely national, the benefits are to an important extent supranational, located at the European level. This in turn is to the benefit of the individual Member States, but only indirectly (for example, better functioning labour markets or more economics growth) and often not recognized as effects of investments in PEGS. The costly investments in PEGS development may not seem worth it at the national level, when only taking into account national objectives, but they can have benefits at the European level way beyond their direct impact. For example, PEGS are important for further development of the single market, reducing transaction costs of cross-border activity, and thus the large benefits associated with the single market should to some extent be seen as an impact of PEGS.

These kinds of indirect benefits should be taken into account in impact assessment and cost-benefit analysis. The 'subsidiarity failure' in the area of PEGS, resulting from imperfect alignment of costs (national) and benefits (European) should be recognized and taken into account in policy development for PEGS. It implies, among other things, that there is an active role required of the Commission, and that funding for PEGS should to some extent be European, because PEGS are to some extent a 'European public good.'

The main argument of this report is that there are important positive externalities<sup>1</sup> to PEGS development in terms of important second order effects. If MS fail to recognize these second order effects, or do not feel that these are part of their responsibility or mandate, they will tend to under-invest in their development. MS public administrations are not sufficiently aware that the way their administration is set up are important tools for helping to produce desirable effects at the national and European level, such as mobility; they ignore the (future) unexpressed needs of the large group of *potentially* mobile citizens which at present is not mobile partly due to administrative barriers; and they ignore the costs which citizens which *are* mobile across borders (in spite of these high administrative transaction costs) are currently incurring, to the benefit of a more functional Europe, and through this to more prosperous Member States.

Second order impact, which occurs through enabling additional impact of other policies (e.g. mobility, services directive) in the area of European integration, can be very large. These second order effects are relatively difficult to measure and to attribute to PEGS, due to the many other factors that play a role in realizing these more complex effects and due to the complementarity of these factors (the overall impact depends on the mix of factors, each individual factor strengthening the effectiveness of the other factors). It is the challenge of impact assessment, regardless of what specific system, methodology or model is chosen of the ones that are currently used in Europe, to include these effects when assessing the impact of PEGS. Only if these effects are recognized and made visible, real informed decision-making on PEGS can take place. In order to get the picture of the full impact of PEGS, the focus should thus not only be on outputs but on outcomes, both first order and second order outcomes. This requires a more sophisticated approach to assessment of the costs and benefits of PEGS, building on scientific theory and models. This report gives a number of specifications for proper impact assessment of PEGS and discusses how impact assessment can be made more suitable for capturing the specific type of impact of PEGS.

### **Recommendations for impact assessment of PEGS**

The report has identified a number of elements that should be present when assessing the impact of PEGS, which are briefly presented below:

1. *Be as domain-specific as possible.* As a general rule for impact assessment in the area of PEGS, when possible PEGS projects should be compared with each other within certain sectors rather than between sectors; i.e. rather than selecting projects for funding based on impact assessment from a heterogeneous pool of projects in all policy areas, only compare projects within one area to select the best one for that area.

---

<sup>1</sup> Positive externalities refer to the benefits beyond the immediate benefits for the main actors, benefits which cannot be appropriated by the main actors and thus will generally not be taken into account by these actors in decisions on expenditure on the action.

2. *In inter-domain comparisons, be careful with the use of common denominators, avoid hidden political choices, and think in terms of effectiveness towards domain-specific goals.* When PEGS in different domains nevertheless need to be compared in terms of impact (for example for decision-making), it is important to be careful in using distorting common denominators such as a focus on economic impact (translating everything into economic costs and benefits), and to avoid hidden political choices. The legitimate way in which PEGS in different domains should be compared is in terms of their effectiveness towards achieving certain domain-specific goals (which are decided on at the political level), in terms of how much they contribute to whatever the aim is in the specific domain that the PEGS is located.
3. *Assess the impact of PEGS in an integrated way and with a keen eye for trade-offs and synergies.* Like assessment in general, PEGS assessment should also be integrated, taking into account costs and benefits in all areas (economic, social, environmental, etc.), with a special attention for possible trade-offs and synergies.
4. *Involve stakeholders in the assessment of PEGS, in order to ensure that PEGS are maximally need-based and effective.* Involving stakeholders can help make the design of PEGS as 'smart' as possible, in terms of working with incentives, based on real insights in the behavioural dynamics of the providers and users of PEGS
5. *Go beyond outputs and direct outcomes when assessing the impact of PEGS, to include broader, indirect and second order outcomes.* 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.
6. *Use impact assessment to identify the 'subsidiarity failure' in the area of PEGS, due to positive externalities.* Subsidiarity failure is a concept used in EUREGOV in analogy to the well-known concept of 'market failure' to describe national governments' failure in taking into account the positive externalities of PEGS for Member States, for example through increasing the effectiveness of the functioning of the EU which has positive effects at the national level. Assessing the second impact of PEGS, will show the existence of these positive externalities that are not taken into account sufficiently in national decision-making processes about the optimal European dimension of the national public services. The presence of positive externalities means that the Commission should step in to correct the 'subsidiarity 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.
7. *In addition to 'subsidiarity failure' there is also classic 'market failure', which can be uncovered through intelligent impact assessment.* Private actors (businesses,

NGOs) potentially also have an important role in providing (parts of) cross-border and pan-European eGovernment services. This is clear in sectors that have a public character but are not part of the core of public administration, such as the health sector. Health insurance companies and health service providers are the main actors in the health care sector, and they also underinvest in cross-border and pan-European digital services, due to the same reason: positive externalities which are not taken into account, and which cannot be appropriated. Whereas public sector organizations can in the end expect to see the indirect benefits of investment in PEGS coming back in the form of tax income, or in the form of costs saved elsewhere in the public system (e.g. less unemployment benefits payment at the MS level due to better functioning European labour market that PEGS helped create), private actors cannot capture these positive externalities. Market failure asks for close study of what specifically is failing (failing demand articulation by users or governments, failing supply due to coordination costs, failing mechanisms for demand and supply to find each other, etc).

8. *Think in terms of smart incentives when designing policy for PEGS.* While there is underinvestment both in the case of the national public sector and the private sector involvement in PEGS development, the Commission has to look very careful at what kind of incentive is needed where and in what way. Simply making funding available can have perverse effects, and may crowd out investment of these public and private actors, and through this it can also erode the sense of ownership and the incentive to be efficient and effective. The Commission will need to apply sophisticated ways of operating in order to solve the coordination failure with regard to PEGS, with a clear eye not only for positive externalities (justifying spending money) but also for incentive structures (requiring smart engineering of actors).
9. *Think in terms of 'policy-packages' when assessing the impact of PEGS.* In order to understand the impact of PEGS, it is essential to consider its effects as part of the effects of a larger policy package. 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 ERA, or further integration of the internal market, or better use of the health care 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 cannot have much impact. Meaningful impact assessment of PEGS can only take place when the policy package in which it fulfils its function is taken into account. Impact assessment of PEGS should heavily take into account synergies with other, domain-specific policy.
10. *PEGS have their impact across policy domains and policy for PEGS should take this into account in order to maximize impact of PEGS, by building the 'package' element into the structure of policy-making and funding for PEGS.* Impact assessment should help to make other policy areas recognize PEGS as tools to

realize their policy goals, and that this should be taken into account in policy development and in the allocation of budgets. The main responsibility for eGovernment (including PEGS) generally lies with some dedicated part of the national and European government (e.g. a national ministry of interior government, or at the European level, DG INFSO). However, this should not distract from the reality that these PEGS are actually (also) serving the policy objectives of other ministries (national) and DGs (European). This should be reflected also in the way budgets are structured and generated. Given the importance of the indirect second order effects, which crucially depend on leverage effects and synergies with other, domain-specific policy (it is the 'package' that counts), it could be advisable to design a budget structure for funding PEGS initiatives in which the connection with policy with a cross-border dimension (e.g. policy for the internal market) is built in.

11. *Assessment of costs of PEGS requires taking into account the costs in different policy-domains, related to the back-office costs of a PEGS system.* Costs are the other side of the 'equation' in the assessment of eGovernment to inform decision-making 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 with 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.
12. *The most important costs of PEGS consist of the "intangible costs" associated with investment in ICT – more so for PEGS than for eGovernment in general.* Changes in business processes, organisational structures, improving the skills of human resources, innovation in supply chain and customer relationship management, are crucial complementary inputs to fully realize and leverage the potential of IT investments. These "intangible costs" represent the bulk of the total costs, they are many times higher than the direct costs of an IT application. In the case of cross-border eGovernment, the ratio between tangible and intangible costs, or between ICT costs and organizational change, may be substantially higher than in 'normal' eGovernment projects. The costs of in some way connecting organizational processes of different public sector organizations with different legal frameworks, different languages and different cultural habits them can be expected 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. 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 organizational changes and may often turn out to be most cost-effective. Thus, when assessing proposals for eGovernment projects with a cross-border dimension, especially these 'intangibles' should be looked at carefully.

13. *When assessing the costs and benefits of PEGS, 'opportunity costs' should be taken into account; reorganisation of eGovernment or the sake of PEGS may lead to an overall more effective eGovernment system.* The costs of PEGS may have other benefits than the ones related to PEGS (be they direct or indirect). Development and implementation of PEGS may lead to improvement of quality of eGovernment services in MS more in general, because it will involve looking at the eGovernment systems of other MS and it may inspire best practice learning, convergence in practices to a generally higher level, for the sake of interoperability.
14. *Impact assessment of complex effects such as intangible costs and second order impact must be 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.* However, when doing this it is 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 decision-making rather than supporting it (even if this is done with the best intentions, by actors who may not even realize that they do it).

### **Operational consequences for the EC, DG INFO in particular**

It is important that the Commission and DG INFO in particular recognize the important role of PEGS, and for this better, more sophisticated impact assessment in the area of PEGS is important, both *ex ante* and *ex post*. Proper impact assessment is needed for increasing awareness of the importance of PEGS and increasing the motivation to invest in PEGS. Proper impact assessment will be crucial for providing sophisticated information for better decision-making in this area. It is the role of the Commission to increase the awareness of Member States of the full benefits of investing in PEGS development, and to provide analytical and organisational instruments to Member States in order to help them in their decision-making process about investment in PEGS.

Impact assessments for PEGS should get the full picture of the costs and benefits of PEGS, including the indirect and intangible costs and benefits. PEGS will have their main effects indirectly, through the additional effect of other policy enabled by PEGS. Impact assessment for PEGS should thus heavily take into account synergies with other, domain-specific policy. One organizational consequence of this is that the prioritization and selection of projects for cross-border eGovernment is best done in close cooperation with policy-makers (Commissioners, DGs, MS ministers) of the policy domains served by the PEGS at stake. More cooperation and collaboration between DG Information Society and the different DGs in specific policy areas (e.g. Health, Justice, Research) that would benefit from cross-border eGovernment services is essential, also because the "content DGs" have the expertise of a particular area and the expertise about other policy going on in that area, which is important for evaluating what would be most worthwhile to do in that area in terms of PEGS, in order to maximize the positive second order impacts.

Strengthened inter-domain cooperation for PEGS development is important at the different levels of government: the national, international and the European level. European level instruments (e.g. financial) aiming at stimulating the development of PEGS should actively aim at creating and fostering such inter-domain and inter-level synergies.

## **Table of Content**

<b>Executive summary</b> .....	<b>2</b>
<b>1. Introduction</b> .....	<b>13</b>
<b>2. Impact assessment</b> .....	<b>14</b>
2.1. The Open Method of Coordination (OMC) .....	14
2.2. The policy cycle: positioning of PEGS .....	15
2.3. Impact assessment: what, when and why.....	18
2.4. Roles of the Commission in the area of PEGS .....	21
2.5. Impact Assessment: how, and how much .....	24
2.6. Involvement of stakeholders, integrated assessment.....	25
2.7. The importance of being domain-specific .....	27
2.8. Ex ante impact assessment .....	29
<b>3. Outcome assessment</b> .....	<b>30</b>
3.1. Output and outcome.....	30
3.2. Shifting to outcome assessment .....	33
3.3. Three areas of impact in terms of outcomes.....	36
3.4. Measurement of outcomes.....	38
3.5. PEGS and administrative burden reduction.....	39
3.6. PEGS and the single market.....	42
3.7. Externalities and “subsidiarity failure” .....	48
<b>4. Expenditure and cost assessment</b> .....	<b>49</b>
4.1. The need for cost assessment .....	49
4.2. Benchmarking expenditure on PEGS .....	51
4.3. Intangible costs .....	52
<b>5. Conclusions</b> .....	<b>54</b>
<b>References</b> .....	<b>56</b>
<b>Appendix 1: Adaptations for the eGEP model</b> .....	<b>60</b>
The eGEP model .....	60
Channels of economic impact.....	62
Additional effects .....	63
Fixed costs, lumpiness and network effects .....	63

Market enlargement ("Smith effect") .....	64
Economies of scope.....	64
Diseconomies of scale .....	65
Substitution effect ("Ricardo Effect") .....	66
Back-office Re-organisation Effect. ....	66
Investments in Innovation (Schumpeter Effect).....	67
Take-up effect.....	67

**Appendix 2: IA models WiBe and MAREVA..... 68**

**Appendix 3. Second order impact example: PEGS in health care.. 71**

Background .....	71
What is the policy package? .....	71
What is the current situation?.....	72
To what extent is there an (unmet) demand? .....	72
To what extent is information and communication a bottleneck?.....	72
Is there a role for the Commission?.....	74
How much impact can be achieved? .....	75
To what extent can this impact be attributed to PEGS?.....	78

## Glossary

DG	Directorate General
eGEP	eGovernment Economics Project
IA	Impact assessment
IPAT	Impact = People x Activity x Time
MAREVA	Method of Analysis and Value Enhancement
MS	Member State
OMC	Open Method of Coordination
PA	Public Administration
PEGS	Cross-border and Pan-European eGovernment Services
PRM	Performance Reference Model
PSI	Public Sector Information
WiBe	Economic Efficiency Assessment model

## 1. Introduction

In all EU Member States, public administrations are working on developing and implementing eGovernment solutions to improve their processes, in order to deliver more and better public service at lower costs. On the crowded eGovernment agenda of public administrations of EU Member States, the development of cross-border and pan-European eGovernment services (PEGS) is only one of many issues, and generally not a very important one. Stimulating eGovernment at the national and local scale is often perceived as more important, more urgent, more manageable and more clearly within the mandate of a national public administration. Linking up those local and national eGovernment systems across borders towards a pan-European scale is not a primary concern. Because of this, important opportunities for increased effectiveness of national eGovernment are not taken, and the potential of digital technology for eGovernment is not used to its fullest. On the contrary, because of the emphasis on further developing national eGovernment systems without thinking much about the European dimension, the future costs of linking up eGovernment between European Member States are effectively increased, and opportunities for co-development and for learning from each other across borders are ignored.

One reason for the low priority given to the development of PEGS at the MS level is a serious lack of awareness of the impact that such services would have, if developed. The potential impact of PEGS is high, due to a number of direct and indirect effects, but this is not perceived as such by policy-makers at Member State level. Also at the European level there appears to be a lack of recognition of the importance of PEGS beyond DG INFSOC. Since the potential impact of PEGS to a considerable extent derives from increasing the impact of policy in other policy domains (e.g. health, competition, justice), PEGS crucially enabling and facilitating the realization of these policies, the lack of a much broader and more informed awareness of the importance of PEGS is deplorable. It is thus important to shed more light on the different types of impact PEGS can have, so that the awareness of their importance can grow, and their development gains more priority on national eGovernment agendas in Member States and on the eGovernment agenda of the Commission.

Proper impact assessment which includes direct and indirect outcomes will play a crucial role in decision-making 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 decision-making about investment in PEGS (which, how, how much, by whom) take place. Without proper impact assessment the development of PEGS will be slow and sub-optimal. 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, and requires investment in itself to be realized. Only if the benefits of PEGS in terms of their impact can be made clear and where possible quantified, investment in PEGS will take place at

the level that is optimal from a public good perspective.

Given that the authority in the area of public services lies at the MS level and that the Open Method of Coordination (OMC) is the main tool of policy making, the involvement of MS public administrations is essential. However, in terms of investment, investing in PEGS may not seem that obvious from the perspective of MS institutions. The costs of PEGS are largely carried by public administration organisations at MS level; the direct, short term benefits of PEGS will be rather limited, and the indirect, longer term benefits of PEGS are substantial but are only partially recognized, and are only partially in the (direct) interest of the national level PA organisation that have to do the investment. One consequence is an undersupply of PEGS.

Another problem is that the demand for cross-border services partly lies in the future. A major part of the impact of PEGS is related to European mobility of all types and in a range of policy-areas given the expected growth of mobility. However, the demand for these services is to some extent dependent on their supply. The logic here is that if eGovernment makes it easier and less costly to have activities across borders (e.g. to live, study, work, or retire in another Member State), then this will be a factor in the growth of cross-border activity and mobility, thus increasing its own demand and thereby its usefulness and impact. This endogeneity should not be underestimated

Proper, sophisticated impact assessment of PEGS will help to make the full impact of PEGS visible and to identify to what extent there is need for a role of the Commission in stimulating PEGS development with regulation and funding. This report presents a framework for impact assessment that will help achieve this.

## **2. Impact assessment**

### **2.1. The Open Method of Coordination (OMC)**

One reason that proper, in-depth impact assessment is of great importance in the area of PEGS lies in the method of policy development and policy implementation for PEGS: the decentralized Open Method of Coordination (OMC). A short discussion of this method will clarify why, and help to understand part of the function of impact assessment (agenda-setting, persuasion) and thereby some of its requirements.

The basis for policy-development in the area of PEGS resides at several levels: <sup>2</sup>

1. Primary law (treaties): in the major EU Treaties such as the Treaty of Rome, Member States committed themselves to the free movement of goods, services

---

<sup>2</sup> For a detailed discussion of the basis for PEGS in primary and secondary law, see the report "Pan-European eGovernment Services in Perspective (June 2007, [www.euregov.eu](http://www.euregov.eu)),

and people; PEGS can be seen as an important means to help fulfil this commitment.

2. Secondary law (regulations, directives, communications, Council of Minister declarations, action programmes): there is a range of secondary law documents in which the development of PEGS is explicitly recommended and agreed on, often directly (e.g. Ministerial Declarations in 2003 and 2005, the i2020 eGovernment Action Plan of 2006), sometimes more indirectly (e.g. the Services Directive of 2006 and the 'Action Programme for Reducing Administrative Burdens in the European Union' of 2007).

As the authority and competence for public service provision lies almost exclusively at the level of Member States, the main method for the Commission to stimulate PEGS development is the 'Open Method of Coordination' (OMC). The legitimacy for OMC derives from the Lisbon Strategy (2000, 2005) in which it has been defined as an instrument. The OMC provides a new framework for cooperation between the Member States, whose national policies can thus be directed towards certain common objectives.

Depending on the areas concerned, the OMC involves so-called 'law' measures which are binding on the Member States in varying degrees but which never take the form of directives, regulations or decisions. Thus, the OMC requires the Member States to draw up national reform plans and to forward them to the Commission. It is up to the Member States to decide on objectives. The OMC encourages member states to share common goals, while leaving the implementation of policies entirely in the hands of member states. Generally, the OMC works in stages. First, the Council of Ministers agrees on (often very broad) policy goals. Member states then transpose guidelines into national and regional policies. Thirdly, specific benchmarks and indicators to measure best practice are agreed upon. Finally, results are monitored and evaluated.

The OMC was devised as a tool in policy areas which remain the responsibility of national governments (and where the EU itself has no, or few, legislative powers). It is a decentralised approach through which agreed policies are largely implemented by the member states. Formally, at least, the European Commission has primarily a monitoring role. In practice, however, there is considerable scope for it to help set the policy agenda and persuade Member States to implement agreed policies. Impact assessment is a crucial element in this process of helping MS to better see what their objectives could and should be when the European dimension of national policy (such as in the area of eGovernment) is at stake.

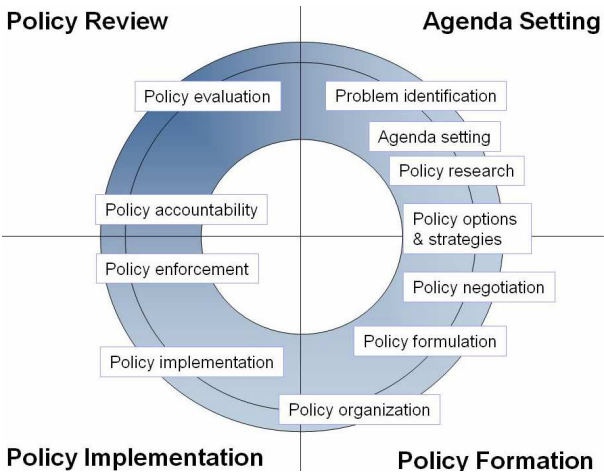
## **2.2. The policy cycle: positioning of PEGS**

Impact assessment is a very broad term, covering a range of methods, fulfilling a range of objectives. In line with, among others, Heeks (2006), this report argues that PEGS impact measurement should be linked to the policy-cycle.<sup>3</sup> Impact assessment has

---

<sup>3</sup> In line with Heeks (2006), four stages can be distinguished: (1) for policy makers entering the awareness

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 1). Before discussing 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 largely located at this moment. This will help to get a clearer view on how impact assessment can be of most use in this policy domain at this point of time, and to get a more precise idea about the desired characteristics of impact assessment. Figure 1 gives a schematic representation of the policy cycle.



**Figure 1. Schematic representation of the policy cycle. Taken from [www.geostrategis.com](http://www.geostrategis.com)**

As was mentioned in the previous section, the OMC works in stages. First, the Council of Ministers agrees on (often very broad) policy goals. This step has been taken with regard to PEGS, the decision that there are administrative barriers which should be overcome with the help of PEGS has been taken by Member States; this is expressed in several Ministerial Declarations.<sup>4</sup> Thus Policy-making for PEGS has to some extent gone through the phase of problem identification and agenda-setting – the upper right quarter of Figure 1 – although only very broadly. The issue of PEGS in general has thus roughly travelled through the first part of the policy cycle, the upper right quarter of Figure 1. 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 up to date.

Roughly 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

---

stage, the demand might simply be for help in understanding what PEGS are; (2) for policy makers 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, policy makers 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 policy making.

<sup>4</sup> For a discussion of the policy basis for PEGS, see Weehuizen and Van Oranje (2007).

since increasingly many citizens and business do not either, and (2) all policies 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. eGovernment could help solve both these problems, given to its ability to make geographical distance less relevant, and its ability connect different institutional and organisational structures in a flexible way respecting diversity and without necessity of harmonization of practices. However its potential in this direction is not realized because (policy-making for) eGovernment itself also stops at the borders.<sup>5</sup> The solution to this is thought to be cross-border and pan-European eGovernment services, referred to as PEGS.<sup>6</sup>

The process of problem identification and agenda-setting has so far taken place at a very general level, there is little discussion of specific barriers in specific domains, which PEGS could lower or overcome. This broadness may partly explain the lack of sense of importance and urgency for PEGS; a more concrete analysis of what PEGS could effectively achieve in terms of solving real problems will probably be helpful in increasing awareness among Member States.

At the broad level the problem is more or less defined and more or less on the agenda of relevant actors (phase one of the policy cycle), and the issue of PEGS is currently located between the first and the second phase of the policy cycle: identifying policy options and strategies. The main policy strategy has been decided on already: policy should be aimed at the development of PEGS. However, the next question is what instruments should be used to enable and stimulate PEGS development. Since it largely concerns OMC, the Commission is not in the position to specify which PEGS should be developed, how, when, in what area and by whom. What makes most sense in the area of PEGS should emerge bottom-up, from the level of MS and other sub-European actors such as municipalities and regions.

Thus, the development of PEGS will largely be a bottom-up undertaking, which to a large extent is appropriate; top-down development of PEGS will often be less effective. At the same time however, research in the EUREGOV project shows that PEGS will generally not develop by themselves bottom-up.<sup>7</sup> This does not mean that PEGS should be developed more through top-down approaches, but rather that the incentives for bottom-up development of PEGS are not strong enough. The dichotomy of thinking in terms of top-down or bottom-up may be unhelpful here. The more helpful image for PEGS development is much more one of an "administrative ecology" in which PEGS will "grow"; with the right incentives and enabling intervention PEGS will emerge that are more need-based, more innovative, and more effective.

Member States have expressed that they want the Commission to play an active role in

---

<sup>5</sup> Moreover, eGovernment may in fact to some extent increase administrative barriers in Europe because different MS implement different forms of eGovernment, which are often not easily interoperable; once a certain system is in place administrative barriers between MS may effectively become higher.

<sup>6</sup> Cross-border and pan-European eGovernment services are often not distinguished from each other, though they can be quite different in terms of main actors and dynamics; generally any eGovernment with a cross-border dimension is imprecisely referred to as PEGS. For a typology, see Weehuizen and Van Oranje (2007).

<sup>7</sup> See Diederer and Glott (2008) in which a number of PEGS case-studies are analysed, the report of the EUREGOV Workshop in May 2007, at [www.euregov.eu](http://www.euregov.eu).

facilitating and stimulating PEGS development.<sup>8</sup> There are several ways in which the Commission can fulfil this role;<sup>9</sup> the current report deals with the question of how impact assessment can assist the Commission in fulfilling its role(s). Part of its role may be to inspire MS to use a different or additional type of IA in which some of the positive (or negative) effects of PEGS show up more clearly, so that MS are better informed in their decision-making on PEGS (whether to participate and invest in them). The reason is that part of the impact of PEGS will not be captured by IA methods currently used by MS to evaluate and decide on eGovernment investments. The current report is intended to serve the Commission in its role of enabler, facilitator, initiator, and (sometimes) implementer of PEGS development. In doing 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.

### **2.3. Impact assessment: what, when and why**

Impact Assessment (IA) has become an important topic over the past years for the Commission. This is expressed through its commitment to the 'Better Regulation Agenda' following increased pressure to improve policy-making and to show the effectiveness of Commission policy-making in a clear and transparent way, in order to strengthen the legitimacy of Commission policy.<sup>10</sup> "Impact assessment is seen as a process aimed at structuring and supporting the development of policies, identifying and assessing the problem at stake, the objectives pursued, the main options for achieving objectives, and their likely impacts in the economic, environmental and social fields."<sup>11</sup> Impact assessment should "help ensure consistency between Community policies [...] It should lead to proposals that not only tackle the problem they aim to solve but also take into account side effects on other policy areas."<sup>12</sup>

The proposed revision of the Impact Assessment Guidelines of the Commission in 2008 summarizes: "All policy-decisions should be based on sound analysis supported by the best data available. The Commission's impact assessment system helps the EU institutions to design better policies and laws. It facilitates better-informed decision making throughout the legislative process. It ensures early coordination within the Commission and it takes into account input from a wide range of external stakeholders, in line with the Commission's policy of transparency and openness. It helps to ensure coherence of Commission policies and consistency with Treaty objectives and high level

---

<sup>8</sup> See Weehuizen en Van Oranje (2007) for an overview of the formal policy documents in which this is expressed.

<sup>9</sup> The different roles and types of interventions and instruments are discussed in more detail in Van Oranje (2008).

<sup>10</sup> The Commission published its first guidelines for Impact Assessment (IA) in 2003. A revised version was presented in June 2005 and supplemented by further annexes on two occasions in 2005 and 2006. In 2008 a new revision is taking place, triggered by external evaluation of the Commission's impact assessment system in 2006/07, and by the establishment of the independent Impact Assessment Board in late 2006. [http://ec.europa.eu/governance/impact/consultation/ia\\_consultation\\_en.htm](http://ec.europa.eu/governance/impact/consultation/ia_consultation_en.htm)

<sup>11</sup> Commission's Communication COM(2002)276 of 5 June 2002 on Impact Assessment.

<sup>12</sup> [http://ec.europa.eu/governance/impact/aims\\_en.htm](http://ec.europa.eu/governance/impact/aims_en.htm)

objectives such as the Lisbon and Sustainable Development Strategies. It improves the quality of policy proposals by keeping EU intervention as simple as possible. Finally, it helps to ensure that the principles of subsidiarity and proportionality are respected, and to explain why the action which is being proposed is necessary and appropriate" (p.3).<sup>13</sup>

Impact assessment thus has a number of functions: it is used as a

- (1) Decision support tool
- (2) Communication and management tool
- (3) Learning tool.

IA provides necessary information in order to decide whether something is worthwhile, and which of different alternatives adds most value or benefit to the primary constituency and has least negative effects on other stakeholders. In other words, an important function of impact assessment is its use as a *decision support tool*, both before starting a project (Should the project be done? Which project should be done?) and during the project (should the project continue? Should things be changed?). Consequently, impact assessment may take place before approval of an intervention (ex ante), after completion (ex post), or at any stage in between. Ex ante assessment forecasts potential impacts as part of the planning, design and approval of an intervention. Ex post assessment identifies actual impacts during and after implementation, to enable corrective action to be taken if necessary, and to provide information for improving the design of future interventions. The Commission points out that ex-ante and ex-post have different functions, but argues that "given the partial overlap in the methodology of the two exercises, the specific aspects of the ex-ante evaluation will be added to the full scale impact assessment" (COM(2002) 276 final, p.4).

Another important function of an impact assessment model is its use as a *communication and management tool*, to communicate the goals and objectives of a project to all involved, and to enable efficient and effective discussion about progress and possible need for adjustment. "Impact Assessment is also an effective and valuable communication tool. Consultations with interested parties will generate useful discussion and bring in valuable information and analysis (COM(2002) 276, p.3). IA is more than a tool; it is a process which effectively generates stakeholder buy-in or ownership. In the case of PEGS, there are many different stakeholders involved that often will speak different languages, both literally (different countries) and figuratively (different backgrounds, different perspectives). A good framework for communication will significantly increase the chances of success of a cross-border project.

In addition, an impact assessment model is or at least should be used as a *learning tool*, by building in explicit moments for evaluation and when necessary adjusting the project, and by comparing different projects and learning from the similarities and differences (e.g. through benchmarking). In the case of PEGS, the transfer of experiences and knowledge about cross-border eGovernment needs to be particularly structured, because of the complexity of cross-border enterprises and because the risk of information and

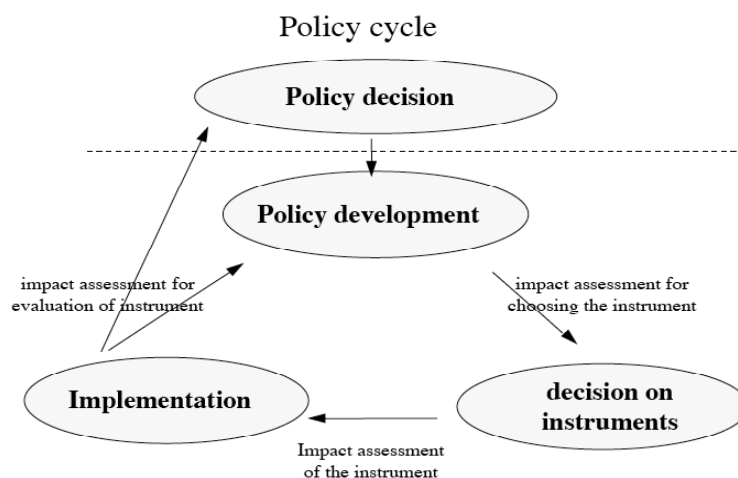
---

<sup>13</sup> European Commission – Impact Assessment Guidelines [Draft version 27/05/2008]  
[http://ec.europa.eu/governance/impact/consultation/docs/ia\\_guidelines\\_draft\\_text\\_final\\_en.pdf](http://ec.europa.eu/governance/impact/consultation/docs/ia_guidelines_draft_text_final_en.pdf)

knowledge getting lost or misinterpreted when transferred from one (national) context to another.

SIGMA (2001)<sup>14</sup> points out that impact assessment is a tool to improve the information base at each stage of the policy cycle. There are three phases in the policy cycle where impact assessment is particularly useful according to SIGMA (2001) (see Figure 2):

1. In the policy development phase. Once the political decision has been taken to pursue certain objectives and goals, impact assessment (*ex ante*) is used to develop policy options and to select the most appropriate policy instrument to achieve the objective.
2. In the instrument development phase. Once the instrument has been chosen, impact assessment (*ex ante*) is used while drafting the instrument, to ensure that it is well-designed and will meet the given objectives in an efficient and cost-effective manner.
3. In the evaluation phase (*ex post* evaluation). Once the instrument has been implemented for a certain time, impact assessment is used to verify the real impact; assess to which extent the objective has been met and initiate amendments/corrections, if necessary.<sup>15</sup>



**Figure 2. Schematic presentation of the role of impact assessment. SIGMA (2001), p.9.**

Policy instruments can be defined as mechanisms to induce desired change. There are basically three types of policy instruments (SIGMA 2001):

<sup>14</sup> SIGMA (2001) Improving Policy Instruments through impact assessment. SIGMA paper No. 31. Sigma stands for Support for Improvement in Governance and Management; it is a joint initiative of the OECD and the European Union, principally financed by the European Union's PHARE Programme, aimed at supporting new MS in their public administration reform efforts. See [www.sigmaweb.org](http://www.sigmaweb.org)

<sup>15</sup> SIGMA (2001): "Impact assessment can and should be applied several times during the policy cycle in order to improve the quality of policy instruments, i.e. laws, regulations, and investment programmes over the long term. Depending on the point in the policy cycle when a particular impact assessment exercise is being conducted, i.e. as a forecasting or evaluation instrument, the importance of certain techniques used for the assessment may vary" (p. 11).

- a. regulatory instruments: including rules, prohibitions, licences, etc.;
- b. financial instruments: including subsidies, taxes and tax deductions, user fees, certain types of budgetary expenditure;
- c. Informational instruments: including advertising campaigns, information booklets, or use of the Internet. Important informational instruments that the Commission specifically uses, in the view of the Open Method of Coordination (OMC), is the provision of policy-information that other policy-making actors (Member States) can use when formulating their policy: these informational instruments include monitoring, evaluation, benchmarking, research, and also policy formulation in strategic papers (EC Communications, Green Papers, White Papers).

## 2.4. Roles of the Commission in the area of PEGS

This report looks at impact assessment as a tool for the Commission, and thus it spends some effort on positioning policy-making on PEGS and the function of impact assessment. The function of impact assessment (and thus the requirements of an impact assessment model for PEGS) depends among other things on the role of the Commission in the area of PEGS. As was mentioned above, in the area of PEGS, the Commission is still looking for its exact roles and how to best fulfil them; the MS have indicated in formal documents that the Commission has a role in the area of PEGS,<sup>16</sup> but have not been specific as to what this role exactly is. In principle, the specifications of the role of the Commission are put down in existing structures – for example, the Commissions financial instruments and roles in the area of eGovernment in general are clearly defined in the CIP ICT PSP). As with eGovernment in general, the Commission has to find the “middle ground” (SEC (2003) 1038, COM (2003) 567)<sup>17</sup> between on the one hand respecting subsidiarity and the authority of MS over public service provision (thus refraining from action), and on the other hand taking the lead to improve eGovernment because European level coordination would have clear added value – particularly in the area of PEGS development.<sup>18</sup> Too much refrainment has disadvantages: “the consequence would be more fragmentation of solutions at Member State level, more duplication in spending, and less impact of activities at European level” (p.3). Too much intervention and direction also has consequences: “online provision of public services is generally the competence of the Member States. A more forceful alignment of programmes would jeopardise the benefits of diversity and innovation” (p.3).<sup>19</sup>

Thus the role of the Commission needs to be determined per area, and even within an area the Commission will often have different roles.

<sup>16</sup> As discussed in Weehuizen and Van Oranje (2007).

<sup>17</sup> SEC(2003) 1038. Commission Staff Working document. Communication from the Commission on The Role of eGovernment for Europe's Future. Preliminary Impact Assessment, COM(2003) 567 final.

<sup>18</sup> “Citizens and businesses will get improved, more accessible, more cost-effective and user-friendly public services, and get them earlier. There will be savings by avoiding duplicate spending across Europe. Solutions will be identified that are better developed at European level - e.g. given cost sharing and evolution towards pan-European services.” Cited from SEC(2003) 1038, COM(2003) 567 final.

<sup>19</sup> Cited from SEC(2003) 1038, COM(2003) 567 final.

The 2008 version of the Impact Assessment Guidelines of the Commission<sup>20</sup> distinguishes six types of initiatives (p.14), determining the nature and degree of analysis needed for impact assessment:

1. Communications which give broad policy orientations, or general directions for action but which do not propose concrete actions.
2. Non-legislative initiatives/ White papers which set out commitments for future action
3. "Cross-cutting" legislative action, such as regulations and directives that address broad issues and are likely to have significant impacts in at least two of the three pillars (economic, environmental and social) and on a wide range of stakeholders across different sectors
4. "Narrow" legislative action in a particular field or sector, and unlikely to have significant impacts beyond the immediate policy area
5. Expenditure programmes: Decisions to establish or renew spending programmes
6. Comitology decisions: different executive initiatives defined by the procedure of adoption, of a "quasi-legislative" nature.

These six types of initiatives roughly present the pallet of instruments the Commission can use to develop policy for PEGS. The Commission IA Guidelines give a good overview of what to do in terms of impact assessment for each of the different initiatives. Thus, for the assessment of instruments for PEGS, this report recommends to use the official Commission Impact Assessment Guidelines (which are currently reviewed and improved). The report will in the remaining document focus on impact assessment at the level of actual PEGS (the third, most direct level).

The possible roles of the Commission that can be distinguished, in order of weight/invasiveness of intervention, are:

- Enabling
- Facilitating
- Initiating
- Executing

These roles of the Commission can be clustered: those where the Commission is in charge (initiating and executing) and those where the Commission puts other actors in the driver seat (enabling and facilitating).

The types of interventions of the Commission can be described in terms of different categories:

- Political/strategic
- Financial
- Technical
- Organisational
- Legal

---

<sup>20</sup> Impact Assessment Guidelines [Draft version 27/05/2008]  
[http://ec.europa.eu/governance/impact/consultation/docs/ia\\_guidelines\\_draft\\_text\\_final\\_en.pdf](http://ec.europa.eu/governance/impact/consultation/docs/ia_guidelines_draft_text_final_en.pdf)

This combines into a matrix of roles of the Commission and categories of intervention:

	Initiating/executing	Enabling/facilitating
Political/strategic		
Financial		
Technical		
Organisational		
Legal		

All Commission interventions in the area of PEGS can be placed somewhere in this matrix (see Van Oranje 2008). The Commission can use the framework for impact assessment presented in this report for both its roles:

- (1) Enabling/facilitating: here the main actors are the MS. The Commission can use the IA framework in a general sense to justify that it's worthwhile to enable/facilitate PEGS development through for example promoting interoperability, and it can advise MS to take into account (additional aspects of) impact assessment fit for capturing the specific type of impact of PEGS, so that the benefits of investing in PEGS development become clear at the MS level;
- (2) Initiating/executing: here the Commission is the main actor. The Commission can use the IA framework to develop specific impact assessment models for PEGS in a certain area or of a certain type; when the Commission has an executive role, for example when evaluating proposed PEGS that were sent in for funding at a call for proposals by the Commission (initiating), or when deciding on a PEGS fully executed and managed by the Commission itself (executing).

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, synchronizing, 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, 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 figure out how useful a proposed PEGS is, to help improve the proposal, to be able to compare it with other proposals for PEGS in case prioritization and selection is necessary, and to assess ex-post to see how a PEGS is performing.

## 2.5. Impact Assessment: how, and how much

As has become clear, impact assessment is much more than a method or a model, it is a strategic tool for decision-making. A tool that should be used with care, the “impact of impact assessment” should be positive rather than negative. Too much or the wrong kind of impact assessment can be quite disastrous.

Impact assessment should be done with care and attention for appropriateness and proportionality: “In some cases, the Commission is carrying out impact assessment on initiatives that are not suited for such an exercise and where there is little value added. [...] A closely related challenge is that of defining a level of analysis that is “proportionate” to the significance of the proposal’s expected impacts. Given the wide variety of proposals, the proportionate level of analysis can not be fully defined a priori. It has to be determined case by case and involving all relevant actors in the Commission” (SEC(2007) 926, p. 6).<sup>21</sup>

SIGMA (2001) points out that the time and resources to be put into impact assessment should depend on the importance of the policy instrument. The more important the policy instrument is and the more impact it can be expected to have, the more sophisticated the impact assessment should become. In most cases, impact assessments do not have to be very large-scale or call for sophisticated research or a large amount of statistical data. Ways to do a modest impact assessment with — in general — significant results, are:

- inter-ministerial meetings to discuss potential consequences;
- consultations with all interested parties;
- evaluation of existing research;
- testing the legal instrument by applying it to a few real cases;
- a disciplined review of potential consequences, such as possible cost factors, where these costs may arise and which possible unwanted side effects may occur;
- limited cost-benefit and/or cost-efficiency analysis.

For major new policies/policy instruments/legislation, a more thorough impact assessment should be carried out. The long-term effects of such interventions are generally well worth the investment in a thorough impact assessment.

In addition to consultations, which should always take place, typical methods and techniques to carry out a more extensive assessment of a draft instrument are (SIGMA 2001):

- cost-benefit analysis;
- cost-efficiency analysis;
- technical advice from outside the administration;
- simulations;
- testing of the instrument by applying it to real cases on a pilot basis.

---

<sup>21</sup> SEC(2007) 926 Better Regulation and enhanced Impact Assessment. Information note from the President to the Commission.

A wide range of methodologies has been developed for impact assessment, their usefulness depending on the precise conditions and purpose of the assessment. Generally, impact assessment will consist of a combination of quantitative and qualitative methods:<sup>22</sup>

- Quantitative statistical methods involving baseline studies, the precise identification of baseline conditions, definition of objectives, target setting, rigorous performance evaluation and outcome measurement. Such methods can be costly, limited in the types of impacts which can be accurately measured, and may pose difficulties for inference of cause and effect.
- Qualitative methods suitable for investigating more complex and/or sensitive types of social impacts, e.g. intra-household processes, policy issues and investigation of reasons for statistical relationships and policy implications. Qualitative assessment is crucial in all impact assessments, in order to evaluate the causes of (quantitative) impacts which have been observed.

SIGMA (2001) observes that sometimes qualitative assessment may be the only reasonable way of assessment, and while underlining the importance of quantitative assessment, it warns for the illusion that this is necessarily more precise and 'hard'. "Where analytical skills are not well developed, where the cost of information collection is too high or where there is little agreement on how to value benefits, it may be necessary to rely heavily on qualitative rather than quantitative assessments" (SIGMA 2001, p. 27).

The Commission observes that "applying them (impact assessment guidelines) in practice often suffers from imbalances in the methodologies and unavailability of data. Lack of availability and/or quality of data often makes quantification of impacts impossible within the limits of a proportionate level of analysis. Particularly in the social pillar, a lack of reliable methodologies and tools also often impedes the adequate assessment of impacts." (SEC(2007) 926, p.7).<sup>23</sup>

SIGMA (2001) point out that it is impossible to construct a system capable of charting all the costs and benefits of any policy. Impact assessment demands that many assumptions are made and it is often associated with a great degree of uncertainty. This uncertainty can be compensated in part by reporting the information sources and the assumptions made in the explanatory notes to the draft proposal. "The most important requirements in an assessment exercise are well informed and open minded consideration of alternative options, against well defined policy objectives, and consideration of those factors which cannot be valued explicitly in money terms, as well as those which can be explicitly valued" (SIGMA 2001, p.28).

## **2.6. Involvement of stakeholders, integrated assessment**

When talking about impact assessment, one of the first questions should be: impact for

---

<sup>22</sup> Conference Papers "New Directions in Impact Assessment for Development: Methods and Practice" November 24 - 25, 2003, Enterprise Development Impact Assessment Information Service (EDIAIS).

<sup>23</sup> SEC(2007) 926 Better Regulation and enhanced Impact Assessment. Information note from the President to the Commission.

whom? A range of actors in a range of areas will be confronted with different types of impact, and excluding some of these actors or areas will distort the outcome of the impact assessment and distort the decision-making based on it.

In the identification of the actual or potential impacts, participatory approaches (stakeholder involvement, such as the users of PEGS) are important, to ensure that appropriate frameworks and indicators will be used. Obviously this is also the case for PEGS, it is essential for prioritizing and for determining issues such as timing and order of implementation of different PEGS in a certain area. In many cases, the perception of stakeholders is not only important to get more information about an issue, but also to get more information about how to achieve impact – since often stakeholders are crucial elements determining the success and impact of a PEGS. In order to influence the behaviour of citizens for the better, you first need to understand their current behaviour and the perceptions that are underlying and the realities they show.

To give an example in the area of PEGS, when consulted (potential) patients indicated that one of the main reason for not seeking health care across the border is lack of information about health care options in other MS (61% of citizens indicated this reason in a 2007 Eurobarometer report).<sup>24</sup> This could mean that a PEGS in the area of health aimed at promoting cross-border health care by making electronic patient files accessible to health practitioners in other MS may turn out only to have effect when another PEGS is in place, aimed at providing information about health care options and quality in other MS. The latter PEGS, aimed at information for potential patients and other relevant actors such as health insurance companies in other MS, might be much more effective, since it addresses the real bottle-neck at this point of time. Thus, it is important to look at the area as a whole and identify bottlenecks, dependencies and conditionalities, and to involve stakeholders since they hold the information that is the key to the effectiveness of a PEGS in practice.

It is not only important to involve stakeholders, but also to use an integrated method of impact assessment. Costs and benefits in different domains (economic, social, environmental, etc.) should all be taken into account in an integrated way, including possible synergies and trade-offs. The Commission on this: “impact assessments are, however, often partial looking only at certain sets of impacts. This partial approach has made it difficult for policy makers to assess trade-offs and compare different scenarios when deciding on a specific course of action” (COM (2001) 276 final, p.3).<sup>25</sup> Multi-criteria analysis is favoured in principle as a methodology.<sup>26</sup> The Commission has sought to make integrated assessment the norm through the development of an “integrated Impact Assessment tool”, set out in IA guidelines in 2002 (revised in 2005 and 2008). The Commission is primarily focused on integrated assessment of EU regulation, but the importance of integrated assessment is of a more general nature; it should be taken into

---

<sup>24</sup> Cross-border health services in the EU. Analytical report Fieldwork: May 2007 Report: June 2007. Flash EB Series #210.

<sup>25</sup> COM(2002) 276 final. Communication from the Commission on Impact Assessment.

<sup>26</sup> There may be a trade-off between range and the usefulness of impact assessment. Integrated impact assessments that bring together different assessment strands will be (or at least appear to be) more complex than independent analyses of economic, social and environmental issues. Thus an integrated impact assessment may pre-empt politicians’ abilities to make the final trade offs, and separate assessments may seem less risky in this respect.

account not only at the level of (de)regulation aimed at stimulating PEGS, but also at the level of policy instruments stimulating PEGS (such as a PEGS funds for seed-funding) and at the level of assessing actual PEGS projects. It is important to have integrated impact assessment, in order to capture the full picture of impact, on *all* domains not just the domain that a certain policy is aimed at.

## **2.7. The importance of being domain-specific**

Although it is advisable to be broad and integrated in terms of assessing the effects of a certain intervention, this does not mean that one should also be as broad as possible in terms of the types of interventions that are compared by means of impact assessment. There are two main reasons for this: (1) the need to avoid hidden policy choices through inappropriate comparison of PEGS in different domain, and (2) the need to connect to domain-specific other policy in the domain of a PEGS, because of the importance of second order impact.

The Commission stresses that impact assessment should not be used to replace political decision-making, nor should it be used to legitimize decisions already taken anyway, or to justify the size of budgets. "Impact assessment is an aid to decision-making, not a substitute for political judgment. Indeed, political judgment involves complex considerations that go far beyond the anticipated impacts of a proposal. An impact assessment will not necessarily generate clear-cut conclusions or recommendations. It does, however, provide an important input by informing decision-makers of the consequences of policy choices." (COM(2002) 276 final, p.3).<sup>27</sup> As the Commission observes: "A somewhat discomfoting finding coming from the interviews was that there is still a perception even within the Commission and amongst some cabinet members that a number of IAs are carried out to justify a preferred option determined independent of the impact assessment process (SEC(2007) 926 , p. 6)."<sup>28</sup>

It is important to explicitly address this in a framework for impact assessment in the area of PEGS. Public goods produced by the public sector are generally difficult to compare because they in principle cannot be translated into a common denominator. What is more important, public health or public safety? These are goals in themselves and should be kept as such (thus, should not be translated into their respective effects on, say, economic growth). However, especially in policy areas with a cross-cutting character such as DG INFSO, projects in different policy areas might nevertheless be compared. It is important to avoid comparisons that are essentially political (for example, trying to argue that catching more criminals is less or more important than preventing more medical mistakes) and to prevent hidden political normative evaluations from entering ex-ante

---

<sup>27</sup> COM(2002) 276 final. Communication from the Commission on Impact Assessment

<sup>28</sup> SEC(2007) 926 Better Regulation and enhanced Impact Assessment. Information note from the President to the Commission. The note continues arguing: "Serious impact assessment work is indispensable for good decision making. And it is imperative that there is full support from Commissioners and top level management both in terms of buy-in and resources. This means that impact assessment work is carried out at the start of the policy making process so that it can have a real influence on it. The identification of options in impact assessments is fundamentally important and more effort needs to be made to ensure that we do look at genuine alternative courses of action."

assessment and prioritization of potential PEGS.

Justification of the mission that should be served by a PEGS has already been done in existing policy documents (e.g. the Service Directive, or the ERA policy documents) and this can best be considered as a given in the area of PEGS development. Thus, rather than reverting to misleading common denominators such as contribution to economic growth, the right way of comparing and prioritizing PEGS is not in terms of the mission they contribute to, but in terms of their estimated contribution to this mission. If a PEGS contributes to more than one mission (e.g. helps to realize the implementation of both the Service Directive and the ERA), this should be taken into account when prioritizing PEGS in terms of their estimated impact on given missions.

Thus, if it is deemed necessary to compare PEGS in different policy domains, they should be compared in terms of their effectiveness, given pre-determined policy goals – this is essential in order to avoid political decision-making disguised as ‘neutral’ impact comparison. However, as a general rule for impact assessment in the area of PEGS, when possible PEGS projects should be compared with each other within certain sectors rather than between sectors; i.e. rather than selecting projects for funding based on impact assessment from a heterogeneous pool of projects in all policy areas, decide to pick one or more projects per area and compare all projects within an area to select the best one for that area.

This is not only desirable in order to prevent hidden political choices. As will be explained later in this report, a major part of the impact of PEGS is *indirect*, deriving from the impact of other policies that are enabled or strengthened by PEGS. Thus, impact assessment of PEGS should heavily take into account synergies with other, domain-specific policy, and should domain-specific as much as possible. One organizational consequence of this is would be that the prioritization and selection of projects for cross-border eGovernment is best done in cooperation with policy-makers (Commissioners, DGs, MS ministers) of a certain policy domain, for projects in that domain. More cooperation and collaboration between DG Information Society and the different DGs in specific policy areas (Health, Justice, Research) that would benefit from cross-border eGovernment services would be useful, also because the content DGs have the expertise of a particular area and the knowledge about other policy going on in that area, which is important for evaluating what would be most worthwhile to do in that area. PEGS should be seen as a more integrated policy tools in different policy domains and that this should be taken into account when budgets are allocated to these policy terrains. I.e. The fact that DG INFSO is in charge should not distract from the reality that these PEGS are actually serving the policy objectives of other DGs

This should be reflected also in the way budgets are structured and generated. Given the importance of these indirect effects, which depend on leverage effects and synergies with other, domain-specific policy, it could be advisable to design a budget structure for funding PEGS initiatives in which the connection with policy with a cross-border dimension (e.g. policy for the internal market) is built in.

Summarizing it is argued that in the case of PEGS it is important to be *broad* in terms of impact of a PEGS that are compared (in order to be able to include effects on other

domains than merely the domain of DG INFSO, including the important indirect, second-order effects), but at the same time to be sufficiently *specific* in terms of the policy-domain of PEGS that are compared (in order to avoid hidden political choices and, again, in order to increase the visibility of second order impact effects).

## 2.8. Ex ante impact assessment

An important function of impact assessment is to support decision-making – for example, to help select and prioritize potential PEGS. In order to be useful for decision-making, 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 tool. 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 decision making, serving a policy orientation as well as a communication function.

Cave and Simmons (2007) propose to build on the 'simple' ex-ante impact assessment tool generally used in the area of sustainable development, the I-PAT model, which consists of a simple equation  $I = P \times A \times T$ ; Impact = People x Activity x Time.<sup>29</sup> On the 'I PAT' view, impact is proportional to the affected population; to the intensity of the activity concerned, and to the duration or frequency of operation. 'High impact' thus necessarily implies large numbers in the affected population; substantial activities, and significant time spans and/or frequencies of operation. 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.<sup>30</sup>

Cave and Simmons stress 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 are intended to result from further 'drilling down' analysis into e.g. the operational meaning of 'Activity'.

The publication stops short of providing clear instructions on how to operationalise the

---

<sup>29</sup> 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).

<sup>30</sup> 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.<sup>30</sup> 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 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](http://www.euregov.eu).

I=PAT model for PEGS; e.g. if and how the different variables should be weighted. This report builds on their work to suggest a number of elements for operationalisation of the I-PAT model:

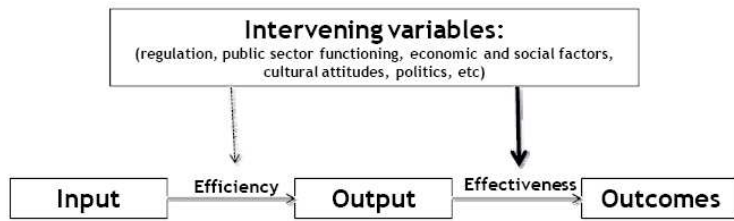
1. IPAT is a simple short-cut IA model introduced in the very beginning of the EUREGOV project. It originates from the domain of environmental issues, where the degree of economic activity (A) as measured in terms of GDP per capita corresponds quite well to the degree of burden on the environment.
2. IPAT can be used for gaining a quick impression of the importance of different PEGS. The "A" of IPAT can be operationalized in a general way by looking at the economic importance of a certain activity, assuming that the impact of a PEGS that enables more of a certain activity is closely related to that activity.
3. It can also and more usefully be operationalized in a domain-specific way; for example in the domain of health one can use the number of DALYs (Disability Adjusted Life Years) saved by a PEGS enabling cross-border health care. In other domains other already existing units of measurement for representing the relative importance of a PEGS-enabled activity might be used.

### **3. Outcome assessment**

#### **3.1. Output and outcome**

Generally in impact assessment, the distinction is made between "output" and "outcome". Codagnone and Undheim (2008) present a brief discussion of impact assessment about 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 health care, output would for example consist of the number of patients accessing information provided by health care providers in another MS, or number of digital bills that health care providers in one MS send electronically to health insurance companies in another MS. In the case of a PEGS in the area of justice, 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 3.



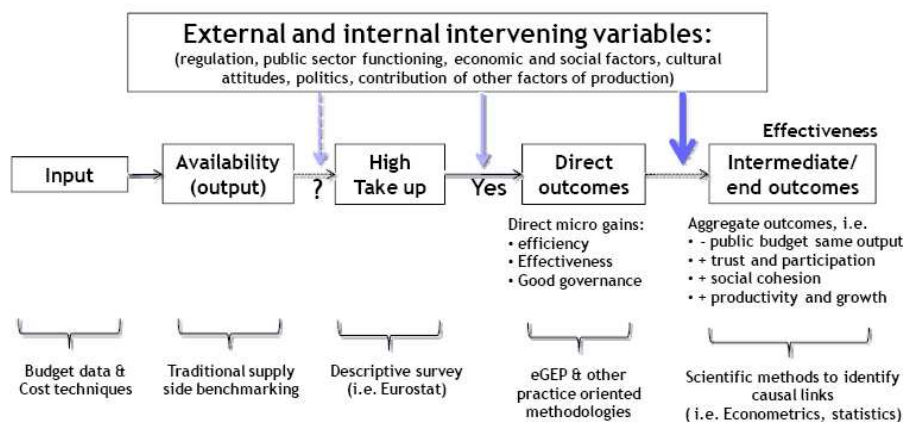
**Efficiency**= relationship between the input and impact, or “spending well”

**Effectiveness**= the relationship between the sought and achieve results for the constituencies, or “spending wisely”

**Figure 3. Simple input-output-outcome model, 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 delivers an output (in contrast to medical technologies), but rather support other delivery processes and in doing so it 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 in concerns eGovernment. The effects of eGovernment on outcomes are indirect and influenced by external intervening variable, 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 4).



**Figure 4. Adapted input-output-outcome model, Undheim and Codagnone (2008), p.8.**

This report focuses on the last two steps of this input-output-outcome pipeline, because there the methodology is most in need of PEGS-specific adaptation. The report 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 term 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. As observed in section 2.2, 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 stop there either, and (2) all policies 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 and pan-European eGovernment are thought to be (part of) the solution. Given the two policy problems that PEGS are expected to solve, consequently the report distinguishes two types of impact:

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, 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.

A similar distinction is made by Millard (2000).<sup>31</sup> First order impact of PEGS is in many ways comparable to 'normal' impact assessment of eGovernment, and can be done by

---

<sup>31</sup> Millard (2008) distinguishes "outcomes" and "impacts". Outcomes for the government agency (or provider) could include: increased efficiency, including cost reduction, resource rationalisation, greater productivity, time savings, less bureaucracy and administration (administrative burden reduction), more transparency and accountability within the agency. Specific outcomes for constituents could include: successful access to and use of eGovernment services, time savings, less bureaucracy and administration (administrative burden reduction), more convenience, more transparency and accountability for users, increased user satisfaction, increased service fulfilment (problem solved) . "Impacts" in Millard's view are at the societal level, and encompass what eGovernment outcomes should contribute to. These could include: economic productivity, economic growth, competitiveness, environmental improvement and sustainable development, inclusion, democracy, participation and citizenship, quality of life/happiness, increased justice and security, universal human rights and peace. These general objectives are not specific to (e)government, but are general policy goals often articulated as 'public value' impacts to which (e)government specific objectives can contribute (Millard (2008)).

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 4). 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 for 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.

Second-order impact is a much more complex form of impact, but it also tends to be a larger and more fundamental form of impact. The report will argue that in order to capture the full impact of PEGS, commonly used impact assessment models are not sufficient and identifies a number of indirect elements of 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 decision-making 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 4).

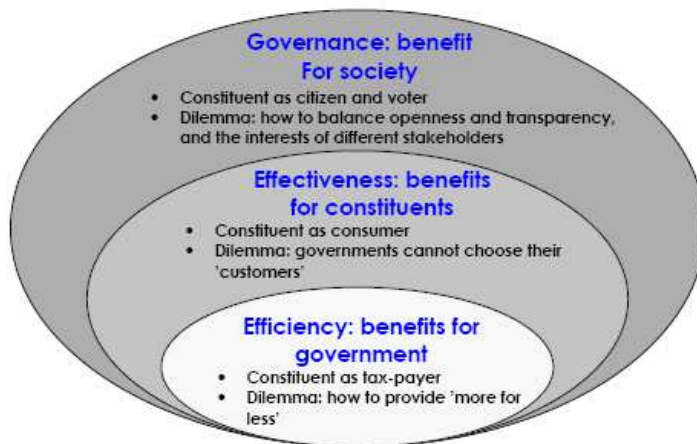
### **3.2. Shifting to outcome assessment**

Millard (2008) observes that there is increasing emphasis on making and measuring policies higher up the policy value chain, i.e. moving from a focus on inputs and outputs towards a focus on outcomes and impacts.

This shift is very important in the area of PEGS. As Millard and others observe, in prevailing practice, measurement of eGovernment is generally focused on *output* rather than *outcomes*; what is measured is the actual provision of online services (G2C, G2B or G2G). The extent to which output, as defined in terms of online provision of services, leads to direct, first order outcomes in terms of citizens (better) served, depends on the quality and take-up of services. This is already much more informative, in terms of impact assessment, but it still is in the domain of outputs rather than outcomes. Examples of (first) order outcomes include efficiency gains for single public agencies (e.g. cost cuts), improving the availability and quality of services for citizens and businesses, and increasing channels of participations. While take-up is a precondition for such outcomes, the measurement of take-up does by no means translate automatically into these outcomes. The extent to which for example efficiency gains are realized (for example, when implementing a certain eGovernment service enables an organization to provide the same service with less people) depends on many other factors, such as the

reorganization capability of public sector organizations including the release of redundant personnel or its deployment to other activities. This depends on turn to some extent on external variables such as labour market conditions.

Millard (2008) argues that there are three major policy goals of government and eGovernment, each with a distinctive view of who the constituent is and who benefits from the policy): efficiency, effectiveness and governance (see Figure 5).



*The evolving policy goals of eGovernment. Source: adapted from Millard & Horlings (2008)*

**Figure 5. Three levels of policy goals. Figure taken from Millard (2008)**

Millard (2008) observes that the eGovernment policy focus has moved over the last five years from being mainly concerned with efficiency, to being concerned both with efficiency and effectiveness. According to Millard, the next step is to include what Millard calls “governance issues”, along with efficiency and effectiveness, such as simultaneously promoting economic growth, jobs, competitiveness, sustainable development, inclusion, democracy, quality of life, citizenship, trust, continuity, stability, and universal human rights. Accompanying this evolution of policy goals there is a simultaneous development in the way they are operationalised and measured.

As Undheim and Codagnone (2008) observe, the more we move from input toward end outcomes, the more complex and demanding the measurement becomes. This is so because the distance between the original cause (investments leading to the provision of online services) and the effect to be measured increases, and so does the likelihood that there are additional external factors intervening. These more distant intermediate and end outcomes include, among others, the economic impact of PEGS on productivity and economic growth, aggregate efficiency gains, better services and policy making leading to more social inclusion, increase trust in public institution and engagement in the public realm. For PEGS, they include specifically the second order outcomes: the effect of PEGS on enabling the deepening of the Internal Market and its associated benefits.

Undheim and Codagnone (2008) point out that, when moving to the measurement of outcomes, an important divide emerges. Most impact measurement methodologies in use (including the eGEP model), no matter how holistic and sophisticated, remain tools that simply associate and calculate indicators of direct outcome to eGovernment activities.

They are adequate for the measurement of micro level most direct outcomes, but they cannot capture in any robust way the more meso and macro level intermediate and end outcomes. When the cause and effect are more distant there are many intervening variables one should take into account. In this context, the simple association of a cause to an effect is meaningless. There is a need to prove robust causal relations. This means, for instance, associating to public investments in ICT an effect that could not be the result of intervening (omitted or unobservable) variables.

Undheim and Codagnone (2008) observe that none of the eGovernment measurement methodologies in current use meet the criteria of proving robust causal relations between the provision of online services and more aggregate end outcome of an economic nature, and that the issue of causality may even harder to address for the 'soft' outcomes such as more inclusion. Robust and causal measurement of the economic impact of ICT in general can potentially be produced using econometrics and other statistical techniques. Growth accounting models have shown the impact of ICT on productivity and GDP,<sup>32</sup> but they may be inadequate for the public sector for both substantial and technical reasons.<sup>33</sup>

The eGEP project did create an economic model in which the impact of eGovernment on productivity and GDP is included. Though this is very important in order to capture at least some of the indirect impact of eGovernment, the method of eGEP is scientifically far from perfect, and to date the eGEP model cannot be used in that way due to lack of data. There are proposals to further develop impact assessment of eGovernment via its effect on productivity and GDP through for example techniques such as Data Envelopment Analysis (DEA) or Stochastic Frontier Analysis (SFA).<sup>34</sup> For capturing the effects of PEGS on productivity and GDP, some additional effects that should be included were identified in the previous section, such as a more sophisticated analysis of returns to scale and network effects; these effects should be taken into account when applying (a form of) eGEP or any other form of impact assessment via productivity and GDP growth. In the case of PEGS, the more important type of impact for which a sound methodology should be designed consists of the effect of PEGS on the functioning of Europe as an entity – the internal market, the European Research Area, the European Health Area, and so on.

Policy makers and public agency managers tend to work with short time frames for decision-making and implementation, and consequently the more practical oriented measurement methodologies will generally be the method of choice. These cannot and should aim for the full level of robustness as the more scientific approaches using

---

<sup>32</sup> E.g. Helpman (1998), OECD (2003), to name just a few.

<sup>33</sup> An important technical problem is the lack of reliable data that can be used to measure the output of public sector bodies; an important problem in terms of substance has to do with the fact that using a given production function (as growth accounting does) may not be able to capture the radical innovation that ICT enabled public services can produce (Garicano and Heaton 2007; OECD 2006).

<sup>34</sup> E.g. Undheim and Codagnone (2008): "In this respect, the most fruitful direction is represented by techniques such as Data Envelopment Analysis (DEA) or Stochastic Frontier Analysis (SFA) which by using data on input and output can produce efficiency frontiers against which individual public agencies or entire countries can be benchmarked (Mandl 2008). Afonso et al. (2006), for instance, have used DEA to analyse the efficiency and effectiveness of public spending in new Member States and identified the efficiency gains that are possible to achieve. With opportunely selected and constructed data, namely with data on input that differentiate ICT cost from all other non ICT cost, such an analysis could also be run for eGovernment and eventually become a new type of benchmarking" (p.10).

econometrics, statistics, or experimental design; however, more involvement of the scientific community and their toolbox could be very helpful to go beyond the superficial level to measurement and impact assessment currently used. The eGEP model is an attempt to incorporate some of the tools of science, more specifically of economics. Though eGEP as it is now does not fulfil the criteria for a useable impact assessment framework in terms of robustness and ease of use, the challenge is not to put it aside because of its current flaws and the difficulties of applying it in practice, but instead to rework and improve it, and thereby to arrive at an impact assessment model that captures more than mere output, and that goes beyond simple causalities.

At present, there is no consensual evaluation paradigm, and a wide range of alternative methodological choices are available (Undheim and Codagnone, 2008). Currently impact assessment in eGovernment is characterized by pragmatism, in the form of mixed approaches selecting both hard and soft measures and practical or scientific methods depending on the specific features of the object to be measured and the policy goals pursued. In line with Undheim and Codagnone (2008) this report observes that pragmatic pluralism is not a problem only as long as the methodologies, and the sources of data are transparently illustrated and the nature of the relation identified between input and outcomes clearly specified with, if need be, the appropriate disclaimers.

However, this report does argue for a higher degree of comparability in impact assessment would be superior to the pragmatic pluralism of today. Full-fledged comparability in impact assessment is neither possible nor desirable, since it would come at the price of removing too much of the specifics of the objects of assessment; it would be like comparing apples and pears by mashing them both up and then compare their consistency. The eGEP model should be seen as the beginning of the process towards more unity in impact assessment, a first step with flaws, part of a learning process. Revising and improving the eGEP impact assessment model is the next step. In order to make eGEP useful for the assessment of the impact of PEGS, there are a number of effects that need to be taken into account, such as externalities, network effects, lumpiness of costs, economies of scale. These elements are discussed in some detail in the appendix of this report.

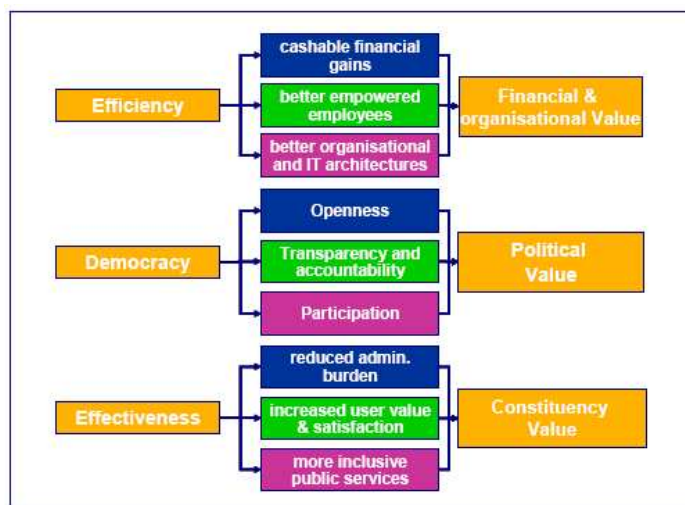
### **3.3. Three areas of impact in terms of outcomes**

Based on an analysis of existing impact assessment models for eGovernment, the eGEP model proposes to group outcomes into three "impact groups":

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

These are the three dimensions (see Figure 6) that eGEP arrives at after reviewing a large number of impact assessment models, concluding that any well-founded method

aiming at evaluating the public value of investments in ICT should include.



**Figure 6. The three impact groups of the eGEP Measurement Model (eGEP Measurement Model, 2006).**

In order to assess impact in terms of outcome it is important to measure a number of indicators reflecting the main elements of the three impact groups identified. In its Measurement Framework, eGEP explains some of the difficulties of measuring; output can be measured but outcome is much harder to measure because partly intangible and partly indirect and not easy to attribute to a single factor such as a certain eGovernment trajectory. When moving from output to end outcome, objective measurement becomes increasingly difficult since the number of external factors contributing to produce the end outcome becomes larger.

Using five 'signposts' of important aspects,<sup>35</sup> derived from policy documents eGEP proposes a number of indicators for benchmarking, that are feasible in terms of effort to measure and comparability, and also in terms of consensus between MS that these are the things that should count in terms of impact. There will always be policy shaped measurement choices that will vary from one country to another and that eGEP Measurement Framework does not address in order to remain at a more general and flexible level. This choice implies that further operationalisation of the eGEP Measurement Framework and indicators will be needed by Member States and/or single public agencies in order to adapt the indicators to their strategic objectives.

The three 'impact groups' of the eGEP impact assessment model reflect the three-fold mission that any public agency or programme should pursue according to eGEP:

- User as tax-payer: the search for efficiency gains through dynamic, productivity-driven and value for money internal operations and service provision;
- User as citizen and voter: the enhancement of democracy through open,

<sup>35</sup> These five signposts are: (1) No Citizen Left Behind – Inclusion by Design; (2) Using ICT to Make a Reality of Effective and Efficient Government; (3) Delivering High Impact Services around Customer Needs, (4) Widely Available, Trusted Access to Public Services Across the EU, Through Mutually Recognised Electronic Identification; (5) Strengthening participation and democratic decision-making .

transparent, accountable, flexible, and participatory administration and policymaking;

- User as consumer: the search for quality services that are inter-active, user-centred, inclusive, and maximise fulfilment and security;

### 3.4. Measurement of outcomes

The eGEP Measurement Framework points out that eGovernment measurement cannot be limited to a strictly quantifiable impact and should include both impact that is directly cashable or that can be rendered in monetary terms as opportunity values, and impact that is more intangible and cannot be rendered in monetary terms. The eGEP framework tries to strike an optimal balance for each of the three value drivers, including both quantitative and qualitative groups of impact and corresponding metrics.<sup>36</sup>

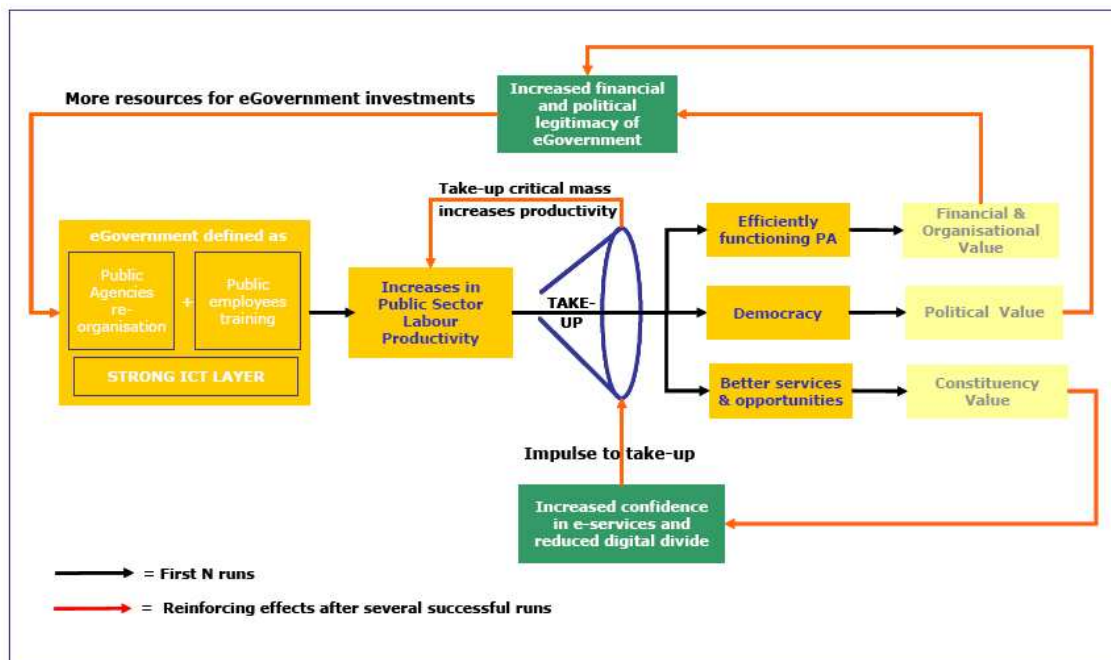


Figure 7. Outline of the eGEP Measurement Model (eGEP Measurement Model, 2006)

The eGep model is based on a comparative analysis of a number of other impact assessment models such as MAREVA and WiBe which were discussed above, and it is specifically designed for the European Commission to use for impact assessment of eGovernment. The impact of PEGS can be assessed following the eGEP methodology using the three categories of impact. eGEP is meant to be adapted and specified depending on its exact application (type of project, context, etc), and in principle this can be done for PEGS in the same way as for other eGovernment project. However, the eGEP economic model has important weaknesses that need to be addressed, and both the

<sup>36</sup> Indicators for benchmarking these five signposts were selected while using three criteria: (1) maximising the capacity of the indicator to measure the relevant dimensions; (2) minimising the costs of gathering data backing the indicators; (3) maximising Comparability. By focusing primarily on relative improvements, expressed in percentage terms, different measures are normalized. In this way the two kind of measurements can be then aggregated into an overall scale that can be used to assess the overall value of a given eGovernment service/project or programme.

economic model and the cost model need to be extended, in order to be used for PEGS.

As was discussed in chapter 2, an important part of the value of PEGS lies in the second order outcomes they can help achieve. Second-order impact 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, services. PEGS can diminish existing barriers to the effectiveness of these policies; the additional effectiveness of these policies because of PEGS should to some extent be counted as (indirect) impact effects of PEGS. 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 decision-making in the area of PEGS development.

### **3.5. PEGS and administrative burden reduction**

An important message of this report is that it is crucial to assess the impact of PEGS in terms of outcomes rather than outputs. To illustrate this, the potential impact of PEGS in the area of administrative burden reduction is briefly discussed here.

The costs for businesses for filling forms and reporting according to obligatory regulations are high, several percentage points of GDP.<sup>37</sup> Reducing unnecessary obligations could therefore save costs and increase productivity and competitiveness. In January 2007, the Commission launched the Action Programme on reducing administrative burdens in the European Union for measuring administrative costs arising from legislation in the EU and reducing administrative burdens by 25% by 2012, jointly with Member States (covering Community legislation as well as national regulatory measures).<sup>38</sup> It is estimated that a reduction of the administrative burden by a quarter could lead to an increase of approximately 1.4 % of EU GDP or around € 150 billion in the medium term (COM(2007) 23 final).

PEGS are a form of eGovernment, and eGovernment consists of digitizing and streamlining information processes, thereby reducing administrative burden. PEGS enable and facilitate cross-border and European level activities of citizens and businesses, and are aimed at diminishing the administrative barriers between Member States. As became clear in the case-study analysis in Diederer et al. (2008), there are many ways in which PEGS might achieve this aim. While the establishment of PEGS may initially increase incidental administrative burden (during the development of a PEGS), but will decrease structural administrative burden. In fact, developing a PEGS can partly be used as a means to rationalize and simplify existing administrative processes of MS and

---

<sup>37</sup> E.g. Tang and Verweij (2004) estimated that the costs of administrative burden in the Netherlands amounts to 16.4 billion euro in 2002, about 3.6 % of the Dutch gross domestic product (GDP). A significant part of the administrative burden, over 40% of the total, is the direct result of international, mainly European legislation. They estimate that for the whole European Union an administrative burden exists of 340 billion euro in 2002, and that reducing the administrative burden with 25% leads to a 1.7% increase in real GDP for the European Union. The long-term effect is higher than the initial impact, since the reduction induces extra capital accumulation and spillovers.

<sup>38</sup> This programme is part of the EU's Better Regulation policy, which aims at simplifying and improving existing regulation, to better design new regulation.

can become an important tool for policy-makers working on administrative burden reduction. If development of PEGS in the area of cross-border administrative transactions would account for only 1% of the 25% reduction aimed at in the Action Programme, then still investment in these PEGS would result in 1/25 of 150 billion: a respectable 6 billion euro.

Chevallerau (2005) points out that most government ROI and business case methodologies still focus on direct returns for government bodies and do not measure the benefits of e-government investments for citizens and businesses. The impact of e-government on the reduction of administrative burdens and costs for citizens and businesses is not easy to evaluate. The lack of adequate metrics and measurement tools makes it difficult to make meaningful calculations of direct costs savings for public services users. Chevallerau (2005) observes that the main and most tangible benefit of e-government for users is the time it saves them to comply with government regulations and complete transactions. This time saving will be all the more significant when government e-services – and supporting processes – are user-centred and customer-focused, and when they offer end-to-end transactions that walk businesses and citizens through each phase of the compliance process. For example, the results of a 2004 survey<sup>39</sup> of European citizens and businesses show that saving and increased flexibility are the most commonly perceived benefits of e-government; citizens and businesses save an average of over one hour per service transaction thanks to e-government services.

For reasons of illustration, we now give a highly schematic example; suppose that a study would show that PEGS in the area of social security save mobile citizens and business 2 hours per transaction (cross-border transactions tend to be more complicated and time-consuming thus more time can be saved); that there are 20 million citizens with cross-border activity having to do 10 cross-border administrative transactions yearly, this would mean 400 million hours of time saved. If a person earns an average of 10 euro an hour and would put the time gained to productive use, the result would be 4 billion euros. The savings of businesses will, if anything, be much higher.

This is a highly schematic example and the numbers have no real base, but the point is clear: in order to understand the impact of PEGS, and thus to make the business case for PEGS, it is necessary to assess impact at the level of outcomes, however difficult this is. Investing in PEGS development will initially only cost public administrations money. After some time, the public administrations will see some returns of investment, but in themselves not sufficient to justify the investment. The real returns on investment lie at the level of the economy and society. Only if these are made visible, public administrations can decide to dedicate budget to PEGS; not because it saves them time and money, but because it generates public value. If necessary, it is possible to calculate how much more tax money will flow to public administrations due to the positive impact of the economy. Suppose the investment in PEGS in the fictitious example consisted of

---

<sup>39</sup> "Top of the Web: User Satisfaction and Usage Survey of eGovernment services", December 2004 [http://europa.eu.int/information\\_society/activities/egovernment\\_research/doc/top\\_of\\_the\\_web\\_report\\_2004.pdf](http://europa.eu.int/information_society/activities/egovernment_research/doc/top_of_the_web_report_2004.pdf)

50 million euros, coming from the budgets of the PAs of MS involved, and suppose 30% of the 4 billion euro extra wages of the fictitious example (thus 120 million) flows back to governments of these MS in the form of taxes, then this could be seen as a very good investment. Again, this is a crude, highly schematic example to make a more general point.

Of course the calculation of the value of outcomes such as "time saved" is much more complicated than merely multiplying the hours saved by some average hourly wage rate. Economics offers a number of models and techniques to deal with this. It is useful to briefly look at how the Commission arrived at the estimate of 1.4% of GDP that reduction of administrative burden would result in, because it offers some insight about how scientific analysis can be used for impact assessment of more complex forms of impact.

A number of different calculations using different scientific models have been undertaken to estimate the economic impact of the reduction of administrative burden. Basically the idea is that reduced administrative burden frees up time for other, productive, activities; people can do their jobs instead of filling in forms. Thus the opportunity costs of the time currently spent on unnecessary administrative work are calculated, and some other effects are taken into account (e.g. capital formation, multipliers).

Gelauff and Lejour (2006) of the Dutch Central Planning Bureau (CPB) arrived at an estimate of 1.4%.<sup>40</sup> They assume that the administrative burden is mainly made up of wages, which means that reducing it would translate into an increase in labour efficiency. The impact on national GDP is determined by its initial size and by the share of labour costs in total GDP at factor costs (value added). The latter varies considerably amongst Member States.

In calculations by the Commission, if administrative burdens are gradually reduced over a given period, the initial increase in GDP will be 1.1%. A process of capital accumulation process then takes place, which adds a further 0.2% to the level of GDP. Thus, in Commission calculations, GDP will be 1.3% higher in 2016 than it would be without the 25% reduction.

As SEC (2007) 84 explains, in the calculations of the CPB (Gelauff and Lejour 2006), a Computational General Equilibrium (CGE) model called World Scan was used. CGEs are based on economic theory which assumes a Walrasian representation of the economy. They use real economic data from a particular year (e.g. data from input-output tables) and estimate the outcome of a change in the economy by a simulation. CGEs do not produce forecasts. Forecasts can be produced by the use of econometric models. The Commission in its own calculations has used the QUEST model for a forecast type analysis of a 25% reduction, confirming the results obtained from the World Scan model,

---

<sup>40</sup> The predicted increases in GDP are increases in the level of GDP. This means that once the reduction is achieved, the overall GDP figure for the EU 25 will be up to 1.4% higher (using the CPB calculations) than if the reduction had not taken place. This gain is permanent insofar as if the burden remains at the lower (75%) level, GDP will remain higher. However, the reduction does not affect the growth rate of GDP, i.e. the dynamics of GDP growth.

suggesting that the positive impact on the level of GDP is in the range of 0.8-1.8%.<sup>41</sup>

The models used by Gelauff and Lejour (2006) and the Commission (2007) both look at the aggregate level of GDP. It is useful also to look at a lower level of aggregation, such as the level of sectors. Research by the Danish Ministry of Economic and Business Affairs on the likely benefits of administrative burden reduction used a static general equilibrium model<sup>42</sup> to calculate the likely output effects of the individual sectors (rather than at the aggregate level, the economy as a whole). This was done by calculating 'multipliers' by which output would increase if the administrative burden were reduced.<sup>43</sup> The difference in the multiplier effect between the various industries is due to difference in the relative importance or contribution of labour in the production process, and affected by the amount of the produce that is exported and who the buyers are.

COM (2007) 23 concludes that calculations using models from different 'families' of economic models suggest that the opportunity cost of not reducing the administrative burden by 25% likely is around 1.4% in the level of GDP – an investment very worthwhile (depending on the level of GDP it lies somewhere around 150 billion or more).<sup>44</sup> Such calculations can be extremely effective for agenda-setting and budget space for policy, and quite similar types of calculations could be made for PEGS in the area of administrative burden reduction. This report thus strongly recommends assigning a study of high-level scientific quality to assess the impact of the broader outcomes of developing PEGS in a number of areas, including the area of administrative burden reduction.

The discussion above in principle still concerns only first order outcomes. In the next section, examples are given of second order outcomes.

### **3.6. PEGS and the single market**

It is useful to expand a bit on the economic impact of cross-border and pan-European eGovernment via the internal market. In a recent economic assessment of the

---

<sup>41</sup> Two scenarios were used in the QUEST calculations. The model treats the amount of time spent on meeting information obligations as a fixed cost. If less time is needed for complying with reporting requirements fixed costs decrease. However, unlike the Word Scan model in which such a reduction translates into a higher marginal product of labour (MPL), in the QUEST model the MPL does not change. In the first scenario demand for labour thus declines but profits, investment and consumption increase. The net employment effect is negative but GDP increases by 0.8%. Scenario two more realistically allows for competition effects which increase the demand for labour. As profits increase from the first round effects it can be reasonably expected that more firms enter the market until pre AB reduction levels of profit are re-established. New firms entering the market demand labour which leads to a decline in unemployment and an increase in real wages. Overall, employment, wages and GDP increase, with the latter up by up to 1.8%. Taken from SEC (2007) 84.

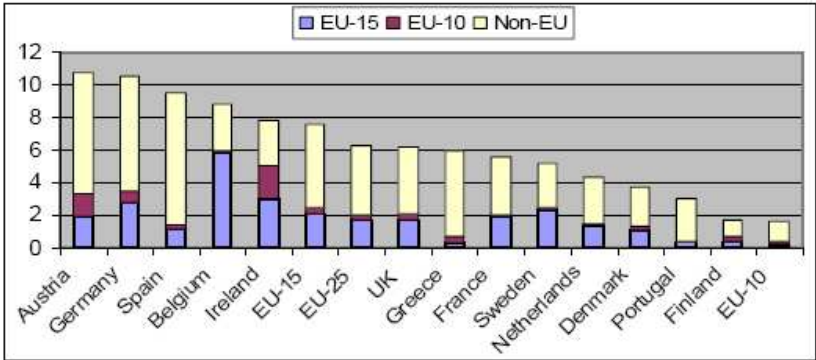
<sup>42</sup> called the Copenhagen Economics Trade Model (CETM)

<sup>43</sup> The multiplier effect refers to the phenomenon that an initial change in aggregate demand can cause a further change in aggregate output for the economy; income of one person spent on consumption acts as income for others. The multiplier in this study was calculated as the change in output divided by the size of the administrative burden reduction.

<sup>44</sup> Often, policy does not only have benefits but also costs. In this case, in theory there should only be benefits. Since administrative burden reduction by definition concerns eliminating unnecessary or obsolete requirements, there is in principle no negative (social, environmental, etc) effect. In fact, since administrative burden reduction can lead to greater clarity regarding those requirements that are not obsolete and it may even have a positive impact on compliance with environmental and social legislation.

development of the internal market by the Directorate-General for Economic and Financial Affairs (Ilzkovitz et al. 2007), it became clear that the internal market is not achieving its full potential. To an important extent this is due to practical and regulatory barriers hampering cross-border activity.<sup>45</sup> Barriers in services are more prevalent than in manufacturing. Services account for 70% of employment and value added but only for 20% of intra-EU trade, indicating their low tradability within the EU.<sup>46</sup> Also cross-border knowledge flows through for example innovative products and services are hampered; about 60% of the innovative companies tend to launch their new products on national markets while only 25% do it in other Member States. Due to their intangibility services tend to be affected by more complex regulatory barriers than trade. Unlike goods, they often require business processes and the presence of the provider in both Member States: in that of the service provider and in that of the delivery. This double presence can result in the duplication of regulatory requirements and burdens (national social security schemes for the staff, different administrative and tax procedures, etc.).

The free movement of labour between Member States of the European Community is possible since 1968. However, overall labour mobility in Europe has remained rather low. In the EU-15, only 0.1% of the working-age population change their country of residence in a given year. In comparison, in the US, about 3% of the working-age population moves to a different State every year. The share of nationals from other Member States does not exceed 20 per cent of the total foreign working-age population and in general, a minority is from the EU10 Member States (see Figure 8).



**Figure 8. Share of foreign nationals in percentage of resident working-age population, 2005. Ilkovitz et al. (2005), p. 23.**

In line with the observation in 2.6, it is important to take the stakeholders’ perspective into account, in order to have an idea whether eGovernment across borders could indeed be a factor to increase mobility, a closer look at the (potentially mobile) citizens at stake. Citizen awareness of new ICT application and possibilities is high in general,

<sup>45</sup> Ilzkovitz et al. (2007): “There are various reasons why the Internal Market has not lived up to its full potential. Clearly the Internal Market was an enormous challenge right from the start. Freeing up the movement of goods, services, capital and persons across Europe cannot be achieved from one day to the next. Nevertheless, it is somewhat disappointing that fifteen years after the so-called “completion of the Single Market”, multiple barriers continue to hinder cross-border activities within the EU.” (Ilzkovitz et al. 2007, p. 14).

<sup>46</sup> As some of these sectors, such as telecommunications, transport, energy and financial services, provide inputs to a large number of other economic activities their performance has implications for the competitiveness of the European economy as a whole.

demonstrated by the high rate at which new ICT artefacts penetrate markets. Most citizens are experienced and can be expected to embrace PEGS when made available to them in a user-friendly form. An exception is perhaps the group of elderly mobile citizens (migrating after retirement to Member States in the South such as Spain or Portugal, where the climate is better) may be less ICT-experienced, but have time to invest in developing these skills.

This implies that uptake is probably not going to be the major issue, once the services are available. The primary issue is the demand articulation for PEGS – this seems to be low. On the whole the PEGS constituency of mobile EU citizens is diverse, fragmented, and relatively undefined,<sup>47</sup> and does not represent a clear and relevant political force that could create a positive momentum for PEGS development.

However, overall current mobility rates of workers in the EU remain relatively low,<sup>48</sup> despite the implementation of a range 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% 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 30 years. In terms of cross-border commuting Belgium has the highest rate, with 1.7% of its working residents working in neighbouring countries. For example, in 1999 on average only 0.2% of the EU-15 working population commutes between Member States.<sup>49</sup>

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*"<sup>50</sup>. 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.<sup>51</sup>

---

<sup>47</sup> There are pensioners seeking to buy real estate, and receive health care 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; etc.

<sup>48</sup> Data cited in: Van Houtum, H. and van der Velde, M. (2004) *The power of cross-border labour immobility*, Tijdschrift voor Economische en Sociale Geografie Vol. 95, No. 1, pp. 100–107.

<sup>49</sup> Eurostat, 2007 and European Commission, Mobility and Migration Update, 2001/0082, Employment and Social Affairs DG, Unit A1, in:

<[http://ec.europa.eu/employment\\_social/workersmobility\\_2006/index.cfm?id\\_page\\_category=FF](http://ec.europa.eu/employment_social/workersmobility_2006/index.cfm?id_page_category=FF)>

<sup>50</sup> <http://ec.europa.eu/eures/main.jsp?catId=56&acro=eures&lang=en>

<sup>51</sup> "People and businesses doing activities involving administration in two or more EU countries – setting up a business, getting married, registering a child's birth or the death of a relative – often face burdensome administrative barriers. Due to a lack of interoperability, e-government services that all member states should have set up by the end of 2004 to facilitate this kind of activity do not function across borders. If they did function they would be useful in bridging geographical distances and processing the times of administrative requests." In a Communication published on 23 February 2006, the Commission identified a number of different elements which should be harmonised to make different countries' e-government services work smoothly together. Making all of this happen is a long and complicated process, which the Commission hopes to be able to co-ordinate between member states (Euractiv, 2006). <http://www.euractiv.com/en/infosociety/commission-targets-cross-border-administrative-burden/article-152919>

More importantly, because the current demand is small, there is very little demand articulation: little pressure to find ways to overcome administrative borders. The demand of potential mobile citizens, who are currently deterred from mobility because of the many time-consuming administrative problems mobility involves, is not expressed and not taken into account. This means there is to some extent a chicken-egg problem. It means that PEGS should in first instance be supply-driven: they should be developed even if there is only small demand for it at present. This does not conflict with the statement that PEGS should be needs-based, since it concerns the needs of the future mobile citizens. The 'mind-shift' that policy-makers have to make is that administrative structures are not reactive to the needs of citizens but are a factor in themselves determining the (future) needs of citizens. The fact of the matter is, administrations are they are now are barriers to certain citizen behaviour (mobility) even if that behaviour is thought to be desirable; and is not catering to the needs of the potential mobile citizens – citizens who are thought to be a highly important, dynamic part of the economy, their mobility being in the interest also of non-mobile citizens – there by effectively forsaking their duty to all citizens and neglecting an important policy option to influence economically and socially relevant behaviour of citizens.

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<sup>52</sup> (see Text box 1). 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.

**Text box 1. Eurobarometer review of citizens' perceptions towards mobility (2006)**

- Despite being attached to their region of origin, 1/3 of EU citizens have moved from their home region and are happy to have done so
- EU citizens strongly believe in the right to free movement
- EU citizens know that geographical mobility can improve their job prospects
- Europeans value employment stability but, in some Member States, job mobility has proven positive and has become well-accepted
- Mobility should not put workers' sense of security at risk
- Both stability and mobility are important: stability helps workers build on their experience and changing jobs improves their adaptability

---

<sup>52</sup> *Europeans and mobility: first results of an EU-wide survey*, Eurobarometer survey on geographic and labour market mobility (2006)

The practise of cross-border commuting constitutes an alternative to mobility, and for that reason, may attract individuals that would have not 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.<sup>53</sup> 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.<sup>54</sup>

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.<sup>55</sup> All these factors may be grouped in the three main clusters determining decisions to commute between living and working places:

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

PEGS are expected to support and stimulate mobility in Europe, reduce administrative burdens and create opportunities for cross border activity requiring interactions with public agencies. Whereas many of the socio-cultural factors cannot be addressed, (barriers to the functioning of) the labour market and other structural factors can be positively influenced through PEGS. Ilzkovitz et al. (2007) point out that, next to factors such as language and culture, an important discouraging factor for individuals consists of 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

---

<sup>53</sup> Vandenbrande, T. (ed.), L. Coppin, P. van der Hallen, P. E. and D. Fourage, A. Fasang, S. Geerdes, K. Schömann, J. Center, *Mobility in Europe, Analysis of the 2005 Eurobarometer survey on geographical and labour market mobility*, Luxembourg: Office for Official Publications of the European Communities, 2006.

<sup>54</sup> Ibid.

<sup>55</sup> Vandenbrande, T. (ed.), L. Coppin, P. van der Hallen, P. E. and D. Fourage, A. Fasang, S. Geerdes, K. Schömann, J. Center, *Mobility in Europe, Analysis of the 2005 Eurobarometer survey on geographical and labour market mobility*, Luxembourg: Office for Official Publications of the European Communities, 2006.

how to operate its own social security system, the benefits and conditions.<sup>56</sup> As was described in Diederer et al. (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 realizing the Internal Market.<sup>57</sup>

An estimate of the current impact of the Internal Market, even when realized very partially and much less than hoped for, is nevertheless impressive. As a result of the progress made over the period 1992-2006 in achieving an enlarged Internal Market of 25 Member States, GDP and employment levels have increased significantly. The estimated 'gains' from the Internal Market amount to 2.2% of EU value added and 1.4% of total employment (or 2.75 million jobs). Ilzkovitz et al. (2007) argue that these gains could be doubled with the removal of most of the remaining Internal Market barriers, and administrative barriers are not the least among these. Suppose for example that development of PEGS would lower these barriers significantly and thereby further the integration of the internal market by 10%, increasing mobility on the labour market and better adjustment of supply and demand on this labour market; this 10 % more integration of the internal market would in theory generate 275,000 jobs. Suppose these jobs are filled by people that otherwise would have been on social security for their income, costing on average 20,000 euro per year, this would then result in a savings of 5.5 billion euro.

Obviously, this is a very crude example. In reality the dynamics of the labour market and social security are very complex and the actual effect would depend on a number of other factors which need to be in place for the effect to be realized; for example labour market regulation, to name only one. What this shows is that the second order effects of PEGS are potentially large, but only if PEGS are part of a broader package of policy. The impact of PEGS in terms of outcomes can never be assessed in isolation or in general, but will always have to take place as part of a package, and be specific in terms of the context, of the PEGS. An example of how to proceed can be found in Appendix 3, in which the impact of PEGS in the area of health care is discussed.

---

<sup>56</sup> The absence of an EU multilateral tax treaty is a major hurdle to capital and labour mobility. Currently, cross-border taxation issues are dealt with by ways of bilateral tax treaties (if existing) between Member States. The rules differ from treaty to treaty, creating confusion and uncertainty. Furthermore, cases involving more than two Member States imply triangular situations and may potentially lead to differences in rules and/or interpretations between tax authorities. This is for example the case of workers who are hired in one Member State but are posted in other Member States during the year. There are frequent situations where some workers do not spend more than half a year in any country, creating confusion on their tax (and social security) situation.

<sup>57</sup> The cases described in WP2D2 show that eGovernment can provide solutions for the high transaction costs related to cross-border activity. An example lies in the domain of non-judicial problem-solving: Since its creation in 2002, the EU's SOLVIT network has been requested to solve 1 800 concrete problems encountered by people living, working, studying or doing business in another EU country as a result of misapplication of EU law. Cases reported through SOLVIT relate essentially to the recognition of qualifications (21%), market access for products (16%), social security (14%), taxation (11%), motor vehicle registration (7%), market access for services (6%), residence permits (5%) and employment rights (4%). 78% of problems have been solved through SOLVIT.

This is an example of the important indirect effects PEGS can have. Another more detailed example of second order effects of PEGS in the area of health is presented in the Appendix.

### **3.7. Externalities and “subsidiarity failure”**

Externalities are costs or benefits arising from an activity which affect somebody other than the people engaged in the activity and which are not reflected fully in prices, or more generally put, which do not play a role in the cost-benefit analysis of the actors deciding on the activity. A negative externality occurs when an individual or organisation making a decision does not have to pay the full cost of the decision. If a good has a negative externality, then the cost to society is greater than the cost consumer is paying for it.<sup>58</sup> A positive externality exists when an individual or organisation making a decision does not receive the full benefit of the decision. The benefit to the individual or firm is less than the benefit to society.<sup>59</sup> Because these costs and benefits do not form part of the calculations of the people deciding whether to go ahead with an activity they result in market failure; if the externality is beneficial, the market will provide too little; if it is a cost, the market will supply too much.

eGovernment concerns public services, so the term ‘market failure’ may seem inappropriate. Nevertheless, when it comes to PEGS something similar occurs, which we might call ‘subsidiarity failure’. When decision-making takes place at the MS level, the positive externalities of PEGS at the level of the European economy and society are not taken into account. Since MS public administrations are the main actors in the development of PEGS (given the OMC), these externalities and the resulting under-supply of PEGS are very real. In the case of market failure there is a role of the government to stimulate a higher supply, for example via subsidies. In the case of PEGS, the ‘market failure’ as a result of positive externalities of PEGS calls for a role of the European Commission.

The public administrations of Member States will often be the main actors, but they are by no means the only actors that play a role. Private actors (businesses, NGOs) potentially also have an important role in providing (parts of) cross-border and pan-European eGovernment services. This is clear in sectors that have a public character but are not part of the core of public administration, such as the health sector. Health insurance companies and health service providers are the main actors in the health care sector, and they also underinvest in cross-border and pan-European digital services, due to the same reason: positive externalities which are not taken into account, and, in the case of private actors, which cannot be appropriated. Whereas public sector organizations can in the end expect to see the indirect benefits of investment in PEGS

---

<sup>58</sup> An example of a negative externality is air pollution caused by a factory; this can lead to health problems and resulting costs for people living in the area of the factory, however the factory does not take these costs into account in its production decisions (what, how, how much).

<sup>59</sup> For example, immunization prevents an individual from getting a disease, but in addition has the positive effect of the individual not spreading the disease to others; or, keeping your house well maintained helps your house's value but also helps the value of your neighbours' homes.

coming back in the form of tax income, or in the form of costs saved elsewhere in the public system (e.g. less unemployment benefits payment at the MS level due to better functioning European labour market that PEGS helped create), private actors cannot capture these positive externalities.

At the same time, since private actors have to take cost savings into account, there will tend to be more and quicker investment in PEGS activity with private sector involvement; even if they cannot accrue all the benefits, often it is nevertheless a good business decision to participate in PEGS development. Health insurance companies who can shorten waiting lists by sending patients across the border will be quite willing to do so, because the shorter the waiting the less chance of complications and the lower the health costs tend to be. Thus, while there is market failure and underinvestment also in the case of private sector involvement in PEGS development, the Commission has to look very careful at what kind of incentive is needed where and in what way. Putting up a big bag of money that (public and/or private) actors can get when they participate in PEGS development may seem justified given the large positive externalities, but can have perverse effects, and can crowd out investment of these public and private actors, and through this it can also erode the sense of ownership and the incentive to be efficient and effective. The Commission will need to apply sophisticated ways of operating in order to solve the market failure with regard to PEGS, with a clear eye not only for positive externalities (justifying spending money) but also for incentive structures (requiring smart engineering of actors).

## **4. Expenditure and cost assessment**

### **4.1. 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 the other side of the 'equation' in the assessment of eGovernment to inform decision-making 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 with 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. Cost information is essential for determining the efficiency of an activity, in other words, determining the extent to which input leads to output (the left side of Figure 3 and Figure 4); and obviously the costs should also be taken into account when assessing the outcomes, in other words the effectiveness. In addition, as the eGEP Expenditure study

observes, a thorough understanding of the full costs of an eGovernment service is an important *managerial* instrument for controlling projects in terms of their planned direction and producing unintended outcomes.

Assessment of costs is not only needed for finding net impact, but it also can be used as a measure of activity in a certain area. If one country spends 100 and another 150 one can conclude (after correcting for things such differences between countries in terms of wages and other input factors) that one country is more active in that area than the other. Likewise, if in one year 100 is spent and in the next 120, after correcting for things like inflation one can conclude that there has been an increase in activity. 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 in which MS is investing how much and in what ways in PEGS. Measuring PEGS expenditure over a number of years can help to figure out whether policy aimed at stimulating PEGS development has been effective, and to see at what points 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 9, a schematic presentation of the eGEP cost categories is given.

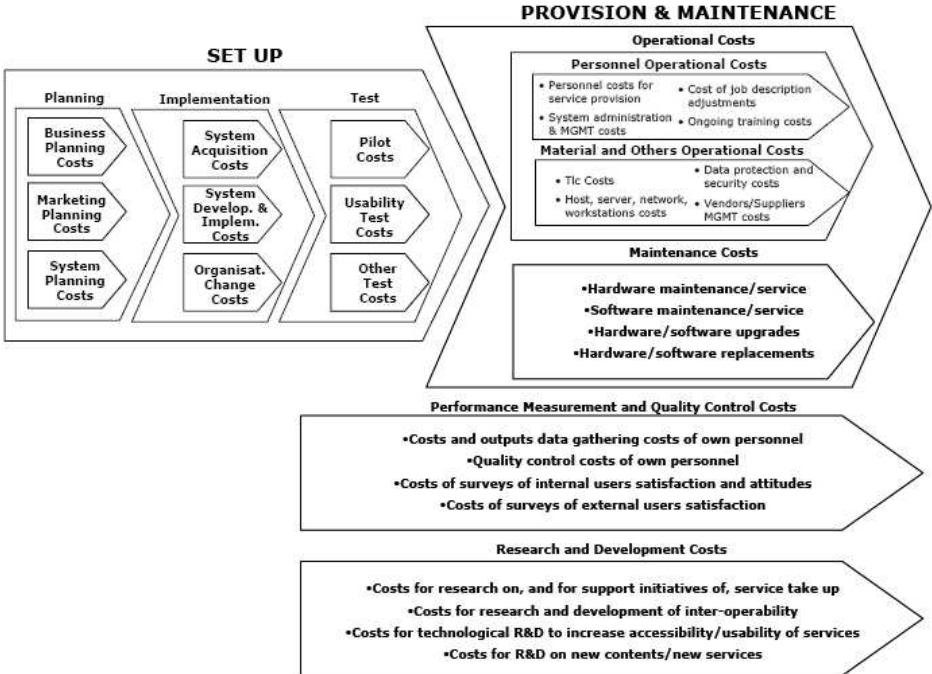


Figure 9. Cost model of the eGEP Expenditure Study (2006)

## 4.2. Benchmarking expenditure on PEGS

The eGEP expenditure study presents the result of the quantitative assessment of ICT and eGovernment Expenditure by public administrations. Total (including central, regional and local layers) public administration ICT expenditure in 2004 for EU25 was estimated at about € 36.5 billion.<sup>60</sup> The EU15 subtotal is about € 34.9 billion. Total public administration eGovernment expenditure in 2004 for EU25 is estimated at about € 11.9 billion. The EU15 subtotal is about € 11.5 billion<sup>61</sup> representing 33% of ICT expenditure<sup>62</sup>

There are estimates for different categories within this aggregate expenditure on eGovernment, such as expenditure on the local, regional and national level eGovernment expenditure. However, there are no estimates for the inter- and supra-national level (cross-border and pan-European eGovernment). The expenditure on existing cross-border and pan-European eGovernment initiatives (if any) are part of the overall expenditure on eGovernment by Member States, plus the spending of the European Commission who co-funds projects such as EHICC and SOLVIT.

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 come from the ePractice data-base. Diederer et al. (2008) mention that out of the 924 cases at that particular moment when looking at the (rapidly growing) 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 appears 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 side, about 2% 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 sight, 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 quite sure that it is much less than 2%.

We need this information to get insight in 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-

---

<sup>60</sup> Within the EU-15, the largest market is, in order, UK, Germany, France, Italy and Spain. If measured in terms of per capita and/or as a % of GDP, ICT expenditure is highest in the Scandinavian/Nordic countries (Denmark, Finland and Sweden), with the UK catching up with this cluster, while a second group (France, Germany, Netherlands, Austria, Belgium) lags behind, and Italy and Spain even more so.

<sup>61</sup> Within the EU-15 the largest market is again, in order, UK, Germany, France. If measured in terms of per capita and/or as a % of GDP, also eGovernment expenditure is highest in the Scandinavian/Nordic countries (Denmark, Finland and Sweden), with the UK catching up with this cluster.

<sup>62</sup> The eGEP study compares this number to the EITO 2002 figure of € 6.6 billion (22% of ICT expenditure), but points out that the two figures are not entirely comparable as eGEP estimate is based upon a wider definition of eGovernment than that used in EITO 2002 (mainly limited to the front end dimension). When comparing the eGEP estimate of the overall public administration spending on ICT with the EITO 2002 figure of € 29.3 billion, there is a 19.1% growth rate between 2002 and 2004.

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 policy making.

### 4.3. Intangible costs

Costs are often equalled to expenditure. However, this is misleading. Expenditure generally relates to concrete identifiable expenses, while costs comprise 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, improving the skills of human resources, innovation in supply chain and customer relationship management, are crucial complementary inputs to fully realize and leverage the potential of IT investments. In fact, these “intangible costs” of the re-designing 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 10 times as large as the direct investments in hardware formally recorded and capitalized 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. 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.

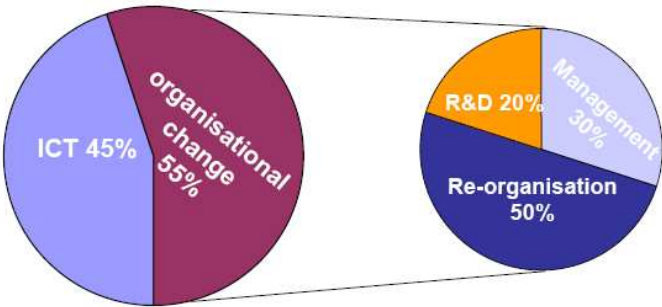


Figure 10. The ‘rule of thumb’ for cost-breakdown, eGep Expenditure study, p. 28.

In the case of cross-border eGovernment, the ratio between tangible and intangible costs, or between ICT costs and organizational change, may be higher than the respective 55% of the rule of thumb of the eGep cost model. The costs of in some way connecting organizational processes of different public sector organizations with different legal frameworks, different languages and different cultural habits they can be expected 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

organizational changes and may often turn out to be most cost-effective. Thus, when assessing proposals for eGovernment projects with a cross-border dimension, especially these 'intangibles' should be looked at carefully.

## 5. Conclusions

In this report, a number of elements are discussed that should feature in any impact assessment of cross-border and pan-European eGovernment services (PEGS). It is important to understand the different functions of impact assessment at different phases of the policy cycle. Important at this moment in the area of PEGS, is the function of impact assessment to increase awareness of the full impact that PEGS can have, and to make sure that in the process of decision-making about PEGS development, this is recognized and taken into account. 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.

Currently, there is not much investment in the area of PEGS. Since authority over the public sector is located fully at the national level, Member States are the main actors, and European level concerns and benefits must be addressed through bottom-up processes of cooperation, through the Open Method of Coordination (OMC). However, there is a severe case of "subsidiarity failure" in the case of PEGS. The benefits of PEGS are to a large extent at the supranational level, and through this level these benefits will reach the Member States in an indirect, often un-recognized way (for example in the form of a better functioning labour market and increased economic growth). In other words, there are important positive externalities to PEGS development, but MS do not recognize the second order positive effects of PEGS, they will tend to under-invest in their development. MS public administrations are not sufficiently aware that the way their administration is set up can be used as a tool for helping to produce desirable effects, such as mobility; they ignore the (future) unexpressed needs of the large group of potentially mobile citizens which at present is not mobile partly due to administrative barriers, and they ignore the costs that citizens that are mobile in spite of these high administrative transaction costs are making to the benefit of a more functional Europe and thus of a more prosperous Member State.

Second order impact, through enabling additional impact of other policy in the area of European integration, can be very large. However, second order impact is often difficult to determine and to isolate, due to the many other factors that play a role in the realizing 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 recognized and made visible, real informed decision-making on PEGS can take place. In order to get the picture of the full impact of PEGS, the focus should not be on outputs but on outcomes, both first order and second order outcomes. This requires a more sophisticated approach to assessment of the costs and benefits of PEGS, building on scientific theory and models. This report gives a number of specifications for proper impact assessment of PEGS and discusses how impact assessment can be made more suitable for capturing the specific type of impact of PEGS.



## References

Bhatia, Deepak T. (2006) Measuring the impact of e-government, Sectoral and E-government Applications Practice Lead, Global ICT department (GICT), World Bank, Washington DC.

Bhatnagar, Subhash (2007) Impact Assessment Study of eGovernment Projects: Methodology and Some Preliminary Results, Information Solutions Group (Informatics Program), World Bank, Washington DC

Brand, Helmut ,Alfons Holleder, Ulrike Wolf, Angela Brand (2008) Cross-border health activities in the Euregios: Good practice for better health. Health Policy 86 (2008) 245–254.

Brouwer, Werner, Job van Exel, Bert Hermans and Arjen Stoop (2003) Should I stay or should I go? Waiting lists and cross-border care in the Netherlands, Health Policy 63 (2003) 289-298.

Brynjolfsson, E. "The IT Productivity Gap", Optimize Magazine, Issue 22, July 2003  
Chevallerau François-Xavier (2005) The impact of e-government on competitiveness, growth and jobs. IDABC eGovernment Observatory Background Research Paper, February 2005.

Cave, J. and S. Simmons (2007) Domain Mapping and Impacts, EUREGOV project, [http://www.euregov.eu/deliverables/reports/eGov\\_WP1\\_D1\\_domain\\_mapping.pdf](http://www.euregov.eu/deliverables/reports/eGov_WP1_D1_domain_mapping.pdf)

Chevallerau, F.X. (2005) The impact of e-government and competitiveness, growth and jobs. IDABC eGovernment Observatory – Background Research Paper. <http://www.epractice.eu/resource/795>

Codagnone, C. and Boccardelli, P. (2006). Measurement Framework Final Version, Delivered within the eGEP Project for the European Commission, DG Information Society, Unit H2, retrieved 10 August 2008 from [http://82.187.13.175/eGEP/Static/Contents/final/D.2.4\\_Measurement\\_Framework\\_final\\_version.pdf](http://82.187.13.175/eGEP/Static/Contents/final/D.2.4_Measurement_Framework_final_version.pdf)

COM (2008) 3282 Final Explanatory Memorandum Scope of the Recommendation. Commission Recommendation of 2nd July 2008 on cross-border interoperability of electronic health record systems.

COM(2007) 23 final. Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions. Action Programme for Reducing Administrative Burdens in the European Union Impact Assessment {COM(2007) 23 final}

COM(2008) 414 final 2008/0142 (COD) Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the application of patients' rights in cross-border healthcare (presented by the Commission) {SEC(2008) 2163} {SEC(2008) 2164} {SEC(2008) 2183} Brussels, 2.7.2008

COM(2008)3282 final Explanatory Memorandum Scope of the Recommendation COMMISSION RECOMMENDATION of 2nd July 2008 on cross-border interoperability of electronic health record systems.

Dekkers, M., F. Polman, R. te Velde, M. de Vries (2006) MEPSIR: Measuring European Public Sector. Information Resources. Final Report of Study on Exploitation of public sector information – benchmarking of EU framework conditions. June 2006. [http://www.epsiplus.net/reports/mepsir\\_measuring\\_european\\_public\\_sector\\_resources\\_report](http://www.epsiplus.net/reports/mepsir_measuring_european_public_sector_resources_report)

Diederer, P., R. Glott, K. Haaland and S. Quast (2008) Evolution of Pan-European eGovernment services: Case Studies, EUREGOV project, <http://www.euregov.eu/deliverables/reports/WP2-D2.pdf>

Eurobarometer (2007) Cross-border health services in the EU Conducted by The Gallup Organization, Hungary upon the request of the Health and Consumer Protection Directorate- General (DG SANCO), Health Strategy Unit, Flash EB Series #210

European Commission (2000). The new programming period 2000-2006: methodological working papers. Working Paper 3, "Indicators for monitoring and evaluation: an indicative methodology", DG Regional Policy, European Commission, Brussels.

European Commission (2005). The impact of eGovernment on competitiveness, growth and jobs. IDABC eGovernment Observatory, Background Research Paper, February 2005.

European Commission (2008) Opening the door to better health care across Europe. Proposal for a Directive of the European Parliament and of the Council on the application of patients' rights in cross-border healthcare Presented by the European Commission on 2 July 2008

European Commission (2008) Opening the door to better healthcare across Europe. Proposal for a Directive of the European Parliament and of the Council on the application of patients' rights in cross-border healthcare Presented by the European Commission on 2 July 2008

*Europeans and mobility: first results of an EU-wide survey*, Eurobarometer survey on geographic and labour market mobility (2006)

Eurostat, 2007 and European Commission, Mobility and Migration Update, 2001/0082, Employment and Social Affairs DG, Unit A1, in:

[http://ec.europa.eu/employment\\_social/workersmobility\\_2006/index.cfm?id\\_page\\_category=FF](http://ec.europa.eu/employment_social/workersmobility_2006/index.cfm?id_page_category=FF)>

FEAPMO (2003) How to Use the Performance Reference Model (PRM), Version 1. The Federal Enterprise Architecture Program Management Office. September 2003

Gelauff, G.M.M. and A.M. Lejour (2005). Five Lisbon highlights: The economic impact of reaching these targets. CPB Document 104. CPB, The Hague.

Helpman, E. (ed) (1998), *General Purpose Technologies and Economic Growth*, Cambridge, MIT Press.

Ilzkovitz, Fabienne, Adriaan Dierx, Viktoria Kovacs and Nuno Sousa (2007) Steps towards a deeper economic integration: the Internal Market in the 21st century. A contribution to the Single Market Review, European Commission, Directorate-General for Economic and Financial Affairs, Economic Papers N° 271, January 2007.

KBST (2004) *Wirtschaftlichkeitsbetrachtungen in der Bundesverwaltung, insbesondere beim Einsatz der IT (WiBe) or Economic Efficiency Assessments in the German Federal Administration, in Particular with Regard to the Use of Information Technology – Version 4.0 – 2004*. Federal Government Co-ordinating and Advisory Agency for Information Technology in the Federal Administration, KBSt Publication Series Volume 68, August 2004

Kelly, Gavin, Geoff Mulgan and Stephen Muers (2002) Creating Public Value. An analytical framework for public service reform, Cabinet Office.

Land, Kenneth C. (1982) Ex ante and Ex Post assessment of the social consequences of public projects and policies. *Contemporary Sociology*, Vol. 11, No.5, Sept 1982), pp. 512-514.

Millard, J and Horlings, E (2008). Current eGovernment trends, future drivers, and lessons from earlier periods of technological change. Interim Report of the eGovernment 2020 Vision Study for the European Commission, DG Information Society and Media, eGovernment and CIP Operations Unit, May 2008.

Millard, J; Shahin, J et al (2006). Towards the eGovernment vision for EU in 2010: research policy challenges. For the Institute of Prospective Technological Studies, Seville, Spain, European Commission, DG JRC.

Roca, Jordi (2002) The IPAT formula and its limitations, *Ecological Economics* 42 (2002) 1-2.

OECD (2003), *ICT and Economic Growth: Evidences from OECD countries, industries and firms*, OECD, Paris.

SEC(2007) 84, Commission Staff Working Document. Accompanying document to the Communication from the Commission to the Council, the European Parliament, the

European Economic and Social Committee and the Committee of the Regions. Action Programme for Reducing Administrative Burdens in the European Union Impact Assessment {COM(2007) 23 final}{SEC(2007) 85} Brussels, 24.1.2007

SEC(2008) 2163 COMMISSION STAFF WORKING DOCUMENT Accompanying document to the Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the application of patients' rights in cross-border healthcare IMPACT ASSESSMENT. {COM(2008) 414 final} {SEC(2008) 2164} Brussels, 2.7.2008

SEC(2008) 2163 Commission Staff Working Document. Accompanying document to the Proposal for a Directive of the European Parliament and of the Council on the application of patient's rights in cross-border healthcare Impact Assessment. {COM(2008) 414 final} {SEC(2008) 2164} Brussels, 2.7.2008

Van Houtum, H. and van der Velde, M. (2004) The power of cross-border labour immobility, Tijdschrift voor Economische en Sociale Geografie Vol. 95, No. 1, pp. 100–107.

Vandenbrande, T. (ed.), L. Coppin, P. van der Hallen, P. E. and D. Fourage, A. Fasang, S. Geerdes, K. Schömann, J. Center, Mobility in Europe, Analysis of the 2005 Eurobarometer survey on geographical and labour market mobility, Luxembourg: Office for Official Publications of the European Communities, 2006.

Weehuizen, R. and C. Van Oranje (2007) Pan-European eGovernment Services (PEGS) in perspective: function, forms, actors, areas, pathways and indicators (June 2007), EUREGOV project, [http://www.euregov.eu/deliverables/reports/WP3\\_Indicators.pdf](http://www.euregov.eu/deliverables/reports/WP3_Indicators.pdf)

World Bank (2007) Public Value of IT investments, World Bank, Washington DC.

## Appendix 1: Adaptations for the eGEP model

In this appendix, the eGEP model for impact assessment is discussed in terms of its potential usefulness for assessing the impact of PEGS. 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 during the discussion below.

### The eGEP model

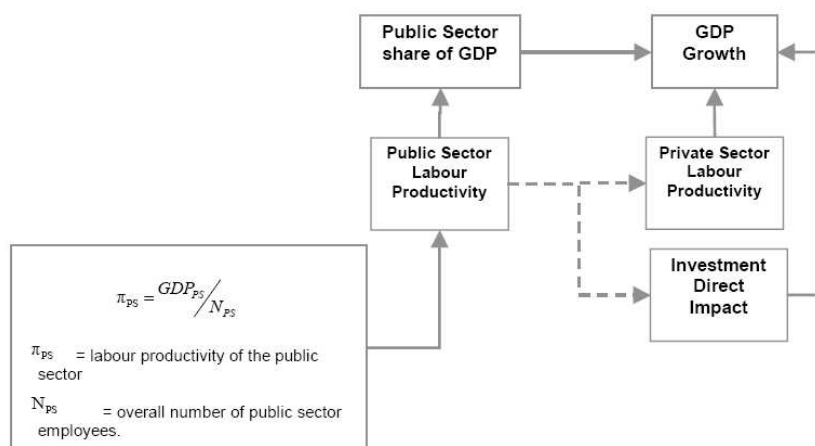
Stimulating eGovernment is an area in which the European Commission has become increasingly active, as a major funding agency for research, good practice exchange and concrete projects in this area. Impact assessment has become an important instrument as part of the Better Regulation programme. There 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 e-Government 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: efficiency (financial and internal organisational value), effectiveness (constituency value) and 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.

In the Economic Model eGovernment has its main effect in terms of output via its effect on labour productivity, which then in turn increases the output and thereby helps achieve the outcomes in the three impact areas. The eGEP economic model puts that eGovernment increases the labour productivity of public sector organizations, 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 (these are described in more detail in the section of this report when discussing 'first order outcomes'). 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).<sup>63</sup>

---

<sup>63</sup> "The basic tenet of our model is that eGovernment activities (national programmes, specific projects, etc.)



**Figure 11. The economic impact of eGovernment according to the eGEP model. Source: eGEP Economic Model (2006) p. 10.**

In its economic model (as depicted in Figure 11), eGEP argues that the share of the public sector to GDP ( $GDP_{ps}$ ) and the number of people employed in the public sector can be taken to be equal to the labour productivity of the public.<sup>64</sup> This may be a problematic, since  $GDP_{ps}$  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, 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 helps to get more insight regarding 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-

---

result in an improvement in labour productivity of the public sector and, as a consequence, contribute to a number of intermediate results (better services, cost savings, etc.), and to GDP growth. The contribution of the public sector to GDP can be commonly estimated as equal to the labour productivity of the public sector multiplied by the total number of public sector employees." (eGEP Economic Model, p.6).

<sup>64</sup> The eGEP project states about its basic hypothesis: "eGovernment, as a process of organisational change and public employee re-training resting on a strong ICT layer, contributes to innovation and change in the public sector. Functioning as a catalyser of modernisation, eGovernment should thus enable public administrations to pursue, through the provision of online services, the objectives of improving their internal functioning, of enhancing democracy, of increasing the quality of services and opportunities offered to citizens and businesses. In the medium term such a modernisation drive should produce consolidated productivity gains eventually reverberating indirectly on macro systemic impact such as GDP growth. This is the basic hypothesis developed in the eGEP Economic Model of eGovernment impact." (eGEP Measurement Framework, 2006, p. 11)

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 distinguishes three channels through which eGovernment has economic effects:

1. *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.
2. *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.<sup>65</sup> It should again be remarked here 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 critical problem that should be addressed and dealt with in improved next versions of eGEP (the assumption here is that eGEP is a first version for a European IA model and will be revised).
3. *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.

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.<sup>66</sup> It is difficult to estimate how much 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 realization of its effective returns

---

<sup>65</sup> Often it is assumed that more GDP equals more welfare and utility. It is however well-known that for example a huge oil spill leads to an increase of GDP because of all the economic activity it generates (in order to clean it up), but it is hard to consider this part of GDP growth to be a good thing. More specifically concerning the public sector, more output of the public sector is not necessarily a good sign; catching more thieves for example may in fact indicate rising crime rather than a more effective public sector. The eGEP Economic Model does not distinguish between "good for GDP" and "good for the economy", arguing that "eGovernment contributes to GDP growth since it is part of aggregate demand, and its potential impact could further extend to multiplier and accelerator phenomena."

<sup>66</sup> The most recent example of the contribution of cross-border and pan-European eGovernment can be found in the Service Directive, which can only be implemented anywhere close to its objectives with the extensive use of cross-border and pan-European eGovernment (see WP3D1 for a discussion of this).

indicate 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 realized in the area of Public Sector Information (PSI);<sup>67</sup> leveraging the development of this potentially enormous market is an economic impact that should be taken into account.<sup>68</sup> Another trajectory where complementarities and leverage effects exist is for example eProcurement.

## Additional effects

In addition to the three “channels” above through which eGovernment had economic impact, the model distinguishes five effects through which eGovernment generates increased public sector productivity. Below they are briefly described, partly reformulated and with some additions, and they are discussed in terms of their relevance for the economic impact of cross-border eGovernment.

### *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

---

<sup>67</sup> Public Sector Information (PSI) are documents, databases and other information (meteorological information, digital maps, traffic data, etc.) produced, collected, stored, etc. by public sector bodies. New information and communication technologies make it possible to collect, store, combine, analyse, and disseminate information in a much more efficient, effective, user friendly and cheaper way. The combination of high quality PSI and new information and communication technologies creates a multitude of opportunities in the area of exploitation of PSI. The Council and the European Parliament have adopted a Directive on the re-use of public sector information, built around two key pillars of the internal market: transparency and fair competition. It sets minimum rules for the re-use of PSI throughout the European Union and encourages Member States to go beyond these minimum rules and to adopt open data policies, allowing a broad use of documents held by public sector bodies. In spite of its potential, much of Europe’s PSI is still not extensively re-used, Cross-border and pan-European eGovernment services will increase the re-use of PSI across borders, thus saving costs; vice versa, the increase of cross-border and pan-European eGovernment services will make PSI re-use more financially attractive since there will be more demand for it, and this may help to make the necessary investments for enabling PSI re-use. See [http://ec.europa.eu/information\\_society/policy/psi/index\\_en.htm](http://ec.europa.eu/information_society/policy/psi/index_en.htm).

<sup>68</sup> The MEPSIR study (Dekkers et al. 2006) estimated the overall market size for PSI in the EU ranges between €10 to €48 billion, with a mean value around EUR 27 billion. This amounts to 0.25% of the total aggregated GDP for the EU (€10.730 billion). A previous study made for the Commission in 2000 by PIRA International Ltd. estimated the economic value of PSI in Europe at an amount of EUR 68 billion.

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 very 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 factors such as fixed costs and 'lumpiness' of costs due to for example 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 the 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 in the least because of the 'S-curve' which is characteristic for the penetration of new services and 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.

#### *Market enlargement ("Smith effect")*

A related effect is market enlargement. The eGep model discusses the effects of market enlargement, the 'Smith effect.' Division of labour enables specialization 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 specialization and thus higher labour productivity is possible.<sup>69</sup> 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 specialization, or rather more generally, more flexibility in terms of the size of the market, supply and demand can be better attuned and optimized. In the public sector, there is no real market but clearly there are economies of scale that can be realized, 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 if the increase of 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 figure out 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 transactions costs can be reduced by the use of ICT.

#### *Economies of scope*

The eGep impact assessment model does not explicitly refer to economies of scope, but

---

<sup>69</sup> The eGep model points out that economies of scale may be utilized by any size firm expanding its scale of operation. The common ones are purchasing (bulk buying of materials through long-term contracts), managerial (increasing the specialization of managers), financial (obtaining lower-interest charges when borrowing from banks and having access to a greater range of financial instruments), and marketing (spreading the cost of advertising over a greater range of output in media markets).

this aspect will briefly be 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 refer to efficiencies associated with increasing the scale of production of one product, economies of scope refer to efficiencies associated with increasing or decreasing the scope of for example marketing and distribution, of more than one (different) products. 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 get 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 getting your drivers license and another for getting 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 better be 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, re-locate people to a combined, bigger office. For cross-border eGovernment economies of scope can be particularly important, since it concerns services that are important for specific groups of citizens and organizations (e.g. citizens studying, working or retiring in another MS, firms doing 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.

#### *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 co-ordination between different departments and divisions becomes more difficult. A related effect is inertia; as organizations grow and more organizations are connected, it tends to be harder to implement changes, due to the increase of interests, perspectives, 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.<sup>70</sup> The larger the scale, the longer the path between decision-makers and the place where these decisions have their impact, and the more chance of distortion of information in the feedback to decision-makers. This means that active explicit monitoring is required which is costly. The response time will be slower, and the decision-maker may feel less of the consequences of his decisions (especially if the consequences are in another country), and this lack of consequences can lead to poor decisions. This can cause an upward (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 (e.g. think about privacy laws). 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.

#### *Substitution effect ("Ricardo Effect")*

The eGEP model describes this effect in some detail. In the private context, "Ricardo's 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.

#### *Back-office Re-organisation Effect.*

---

<sup>70</sup> The larger an organization, the larger percentage of the workforce may be 'management' in order to deal with the communication and coordination mentioned above, and the lower the percentage of line workers'. Managers are necessary to manage a large, complex organisation, but they reduce direct productivity since they are not directly producing output. Since higher level managers get higher level pay, their costs will unfavourably influence the input-output ratio of an organization.

The eGEP model draws an analogy with the private sector. Firms will undertake a re-organisation 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, from the point of view of the technical estimation of this effect, for the Public Sector, an approximate calculation will be required for the computation of the costs re-organisation.

*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 increases in productivity, but only after the time lag needed to put these ancillary aspects in place.

*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 does not impact only the delivery channel, but also the time of delivery. An increase in the delivery of some kinds of public services through e-GSP (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 e-services) 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 processes are used in every-day 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.

## Appendix 2: IA models WiBe and MAREVA

The eGep model claims to have taken the most relevant parts of existing impact assessment frameworks suitable for assessing the impact of eGovernment investment. Nevertheless, it is useful to briefly describe two other models that are currently in use in two large Member States, to give an idea of the variety of impact assessment models used. Before eGEP, and currently still used in instead of eGEP European Member States have developed impact assessment models in order to capture relevant policy information for policy development and decision-making concerning reforms of the public sector, specifically for eGovernment. The models share many similarities. In this section, two models are briefly discussed as examples, the MAREVA model (France) and the WiBe model (Germany). These existing impact models are developed and used to assess specifically the impact of eGovernment investments. Generally the impact assessment models are designed to be adapted for concrete specific projects; thus after establishing the specifications for what is expected of these projects, they can be tailor-made and used for the assessment of PEGS. The impact assessment methodologies discussed in this section broadly focus on the same dimensions. They offer two levels of impact assessment: first, in terms of how projects provide a business case justification for expenditure and whether they meet the targets set for them, and second, in terms of how projects meet the goals of the agencies concerned and, in turn, how that helps achieve wider government strategies.

MAREVA is a methodology to assess the impact of public sector transformation projects, developed in France.<sup>71</sup> It helps administrations in prioritizing initiatives, managing them (evaluating alternatives, commitment of project leaders on concrete objectives) and building knowledge for further projects to optimize their value. MAREVA was launched in 2005 by the French eGovernment Agency (ADAE) and has been rolled out in about 100 eGovernment initiatives in 10 French ministries and in several other public organizations, including Quebec government. MAREVA assesses financial impacts of projects on the public sector and citizens. It is intended to help public administrations to use a more-balanced assessment of costs, value and risk as a way to better prioritize and manage project portfolios.

MAREVA targets any administration wishing to better manage its transformation projects portfolio. MAREVA is used as a tool for analysis, decision-making and communication, for key actors of governmental transformation projects. It targets decision makers, project leaders and information system departments.

The MAREVA model contributes to serve the purpose of shifting public administrations towards a result-based management of budgets, as it helps to provide a more-balanced assessment of costs and benefits, value and risk as a way to better prioritize and manage project portfolios. MAREVA is an approach in which the value of a project is defined by integrating ROI but also by public sector's specificities such as productivity issues,

---

<sup>71</sup> <http://www.epractice.eu/cases/MAREVA>, <http://www.synergies-publiques.fr/>.

impacts on citizens and public servants, organization's complexity, necessity; it can be used to evaluate and compare many different projects (infrastructure projects, internal transformation projects, e-services); it is a tool to facilitate discussion between project team members (functional and IT), decision-makers and contractors; and it is a way to commit teams to concrete objectives enabling to better manage the project (early identification of project risks/pitfalls enabling early decisions) and to engage them on common objectives. The methodology enables to follow-up the value of a project at each stage of its life cycle: beforehand, to contribute to the decision-making process, during the project to better manage it (resources justification, choice between alternatives, corrective actions plan) and afterwards, to contribute to the experience gained.

The tools are reportedly easy to use, even without training. From the beginning, the MAREVA model was conceived to be shared, it is designed in a way that enables adaptation to different contexts. MAREVA has been deployed on 2 Excel tools and is going to be a web-based tool with additional functionalities and easy roll-out and use. MAREVA is Open Office tool, with license-free access. All documents needed for use are available on Internet, every public actor can use it freely. The model can be used for both ex post and ex ante assessment.

Essential when developing and using MAREVA, and more in general, when developing an impact assessment methodology, is to assess the context and adapt the methodology where necessary. Even though it is desirable to be able to compare things across areas or policy-domains, it is equally or perhaps even more important to capture specifics of a certain area or policy domain. It is important to test the impact assessment method with pilots, and to prepare and deploy a training program and a communication plan. In the MAREVA approach, decision makers in specific domains should be involved in the development of impact assessment methodology in order to increase its effectiveness in capturing that which matters, and to make it useful in terms of communication.

The WiBe Economic Efficiency Assessment methodology is developed in Germany; it has been used since 1992 and serves as a basis for methodological and uniform assessments by the federal administration.<sup>72</sup> WiBe distinguishes four aspects of the economic efficiency of IT projects:

1. *Costs and benefits* which can be quantified in monetary terms;
2. *Urgency* of the measure;
3. *Qualitative and strategic importance* of the IT project.
4. *External effects*, which enables the effects of measures on "external customers" to be qualitatively recorded and evaluated.

To calculate the economic efficiency in monetary terms, WiBe 4.0 uses the capital value method that also takes into account the time at which costs, earnings and savings occur. To this end, the amount that arose at a specific time is "discounted" for the base year of the calculation. Costs incurred later and savings are thus included in the calculation with

---

<sup>72</sup> <http://www.bit.bund.de>; KBST (2004);

a lower capital value, prior investments with a correspondingly higher amount. If appropriate, risk surcharges can also be calculated. With the capital value method, a measure is regarded as economically efficient if a positive capital value is achieved over the calculation period (normally five years for IT projects). If the capital value is positive, there is basically no need for any further assessment of the qualitative economic efficiency. If it is negative, it is necessary for the monetary calculation to be supplemented by an extended economic efficiency assessment under the other criteria mentioned above.

For e-government measures, an assessment of the external effects should be carried out in every case. The qualitative economic efficiency assessment is carried out in WiBe 4.0 as a benefit analysis. For each quality criterion, a ten point scale is defined in which the points represent different degrees of benefit. A measure is considered economically efficient under WiBe 4.0 if - after weighting and standardisation of the scales - it achieves at least 50 of 100 points. The software and instructions for the use of WiBe are free downloadable.

## Appendix 3. Second order impact example: PEGS in health care

In order to further illustrate the need to take indirect and second order impact into account in the impact assessment of PEGS, the role of PEGS in the area of health is briefly discussed.

### *Background*

Each Member State has its health care system, with its own characteristics, strengths and weaknesses. Sometimes the demand for health care in a certain health care area is greater than the supply in a MS; the result then is waiting lists, and loss of productivity and well-being because of prolonged illness and incapacity. This while the health care system in another MS may have sufficient capacity to take in more patients than the MS itself has. In addition, sometimes there are specialized treatments in one MS that are not offered in other MS and vice versa. Also, some MS health care providers have a problem with finding sufficient qualified personnel, while in other MS there are health professionals looking for a job. All in all, there appear to be many advantages of providing a cross-border or European dimension to health care. PEGS in the area of health care can fulfil an important role in realizing these. As was argued above in this report, to arrive at an idea about the outcomes of PEGS in this area, we need to look at (1) the broad, domain-specific policy context in which the PEGS would play a role, (2) the (potential) demand for PEGS in this, and (3)

### *What is the policy package?*

Understandably, this is an important policy objective for DG Health. In the Proposal for a Directive of the Commission of 2 July 2008, titled *Opening the door to better health care across Europe*, it is argued that “the European healthcare systems face considerable challenges (aging, inequalities in health, sub-optimal access) which to some extent can be met by initiatives at European level through the development of synergies, cooperation and coordination [...] Recently, the legal basis or even necessity for this has been established. The European Court of Justice (ECJ) clarified that even though Member States are responsible for organising and delivering health services, the free circulation of goods, services and persons in the internal market also applies to health products and healthcare services.” The Commission is currently in the process of making a proposal for a Directive on the application of patients’ rights in cross-border healthcare to contribute to the efforts of the Member States to improve health systems in the EU and open the door to better healthcare for patients across Europe.<sup>73</sup>

While responsibility for clinical oversight in principle lies with the country of treatment. However, cooperation with the relevant authorities in the patient’s home country is

---

<sup>73</sup> The Commission was asked by the European Parliament and the European Council to *not* include health services in the Services Directive was the original plan, but rather to develop a separate directive given the special nature of health services.

important, if only for continuity of care and collecting and integrating all medical information. In the stakeholder consultation for the Directive on cross-border health care provision, it was suggested to put in place alternative dispute resolution systems for cross-border care, perhaps building on existing networks such as SOLVIT (an existing PEGS) Another suggestion concerned cross-border pharmacy services, for which the option is explored to develop something like ePrescriptions. Information and communication technology solutions in general were identified as a key area for the future by many contributors. Other suggestions highlighted the scope for practical support on areas including European reference networks; an observatory for comparative data and indicators; health technology assessment; better sharing of healthcare innovations. (COM (2008) 414, p. p.4-5)

#### *What is the current situation?*

Based on estimates concerning patient mobility, the Commission has estimated that cross-border healthcare represents around 1% of public expenditure on healthcare COM (2008) 414. This estimate was tested through the consultation exercise, and was broadly confirmed by the responses from Member States and other contributors, with similar proportions both of expenditure and numbers of patients moving. The total GDP of the European Union is € 12,149 billion<sup>18</sup>. Of this, 7.6% (€ 967 billion) of GDP is being spent on public healthcare<sup>19</sup>. As 1% of public healthcare expenditure is spent on cross-border care, this equals approximately € 9.7 billion.

However, respondents to the consultation underlined that cross-border healthcare varies, and can be significantly larger in certain circumstances. Demand will tend to be higher in border regions, smaller Member States (e.g. in Luxembourg, up to 7% of the healthcare budget has been spent on cross-border care in recent years), demand will be higher when it concerns rare diseases, when it concerns areas attracting large amounts of tourists, and would depend on for example the extent of co-payments in funding (this would increase cross-border health care use since barriers such as insurance regulation for cross-border care would be less important).

#### *To what extent is there an (unmet) demand?*

A number of studies show that the extent of cross-border healthcare has grown in recent years, and is likely to continue to grow in the future (COM (2008) 414, p.11). However, there is a huge gap between supply of and demand for healthcare in different Member States. The Commission calculated that the average percentage of people per Member State with unmet need, each Member State weighted on the basis of the amount of inhabitants, is 8.5%. However, experience to date shows that even amongst patients who have a clear unmet need, and are aware of the possibility to go abroad for treatment, fewer than 10% of them actually go abroad to receive care.

#### *To what extent is information and communication a bottleneck?*

Even in cases where there is long term experience of cooperation between countries, it turns out to be difficult to ensure the quality and safety of cross-border care. Countries have different treatment protocols, different divisions of responsibilities and different

quality control systems. Quality and safety control is often integrated into financing and planning mechanisms. As cross-border care often takes place outside of those mechanisms, quality and safety control is at risk in the cross-border context. Information and communication technology could be a powerful tool to reduce this risk, and more in general to deal with the diversity by providing connecting services through which interoperability of practices can be achieved without harmonization.

COM (2008) 414 observes that for high-quality, safe and efficient cross-border healthcare, people must have access to information that enables them to make informed choices about cross-border healthcare, and that the necessary transfer of information to ensure continuity of care between different treating professionals and organisations is ensured for cross-border healthcare, and that mechanisms are in place to ensure appropriate remedies and compensation for harm arising from cross-border healthcare. In all of these, PEGS could fulfil a key role.

In addition, COM (2008) 414 observes "soft action" will be an important means of proceeding in this area, and an important means of soft action would be a mechanism to bring Member States together to share ideas and best practice, building on the work of the High Level Group on health services and medical care, which is currently working on issues such as European reference networks, patient safety, cross-border healthcare purchasing and provision, health systems impact assessment or wider issues related to mobility of health professionals.

As to "legal action", a directive on health care would put in place a general requirement that Member States must provide information to their own citizens about their rights to healthcare abroad (what their entitlements are and how to access them), and that patients should have access to relevant information from providers to allow them to make informed choices (e.g. on availability, prices, outcomes), where this information is available domestically (Com (2008) 414, p. 25). These general requirements would be accompanied by additional measures, including establishing of national points of contact on cross-border healthcare; comprehensive information on cross-border healthcare being made available at the EU Health Portal; raising awareness about the existing EU framework on data protection and sharing of confidential data – all of these fall under the definition of PEGS.

PEGS have a key role in realizing cross-order and European health care use. Interoperability is of course a key issue. The 2004 Community eHealth Action Plan defined interoperability of electronic health records as one of the priorities for Member States in the roadmap annexed to the Action Plan. The Commission Recommendation on cross-border interoperability of electronic health record systems is intended to support the premise that connecting people, systems and services is vital for the provision of good healthcare in Europe insofar as it is necessary to enable the free flow of patients as well as eHealth products and services, and hence may contribute significantly to the establishment and functioning of the internal market.

Recent developments in information and communications technology (ICT) systems and services in different Member States have resulted in a proliferation of incompatible ICT

formats and standards in healthcare institutions. The resulting lack of interoperability (the ability to 'talk to each other') between health ICT systems in different regions and Member States causes problems for travelling persons and the health professionals who might treat them<sup>4</sup>. This lack of interoperability is a particular issue for the use of electronic health record systems (EHR systems), which are used to collect digital information about an individual's medical treatments over a certain period of time, perhaps even a lifetime. Fully interoperable EHR systems should make access to patients' information easier, as well as enhance the quality and safety of patient care throughout the Community by providing patients and health professionals with relevant and up-to-date information while ensuring protection of personal data and confidentiality

In 2008, a follow-up Recommendation (COM (2008) 3282) on cross-border interoperability of electronic health record systems has been drafted, supporting "the premise that connecting people, systems and services is vital for the provision of good healthcare in Europe insofar as it is necessary to enable the free flow of patients as well as eHealth products and services, and hence may contribute significantly to the establishment and functioning of the internal market."

SEC (2008) 2163 states: "[S]tudies point mainly to the *lack of information transfer* from the Belgian treating doctors to the Dutch GPs and to the providers responsible for the aftercare. Ensuring quality and safety in healthcare depends not just on the skills and qualifications of an individual professional. Rather, it depends on the functioning of an entire system: the individual professional; the team of professionals dealing with the particular patient; the overall providing organisation; and the applicable regulatory framework. It is precisely at the borders between each of these elements that risks increase, and thus cross-border healthcare (as healthcare involving borders between all of the systemic elements responsible for ensuring healthcare) raises greater risks than healthcare within a single Member State." (p. 14)

"There is also a *lack of information* to allow patients or their physicians to make informed choices about the possibilities and appropriateness of cross-border healthcare. There is no simple mechanism for seeking information in the language of the patient about different treatment or provision options, their cost and availability in practice, or their outcomes and success rates for healthcare in other Member States. Even when such information can be found, the lack of comparability makes informed decision-making difficult at best, and thus hinders making appropriate choices. (p.15)

#### *Is there a role for the Commission?*

SEC (2008) 2163 observes: "It is primarily the responsibility of the individual Member States to organize their healthcare systems in the way that best suits their country and citizens. Nevertheless, sometimes the healthcare that citizens need can best be provided in another Member State, due to its proximity, its specialised nature, or the lack of capacity to provide that care in their own country. In accordance with the principle of subsidiarity, the Community should only act in this area if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States and can

therefore, by reason of the scale or effects of the proposed action, be better achieved by the Community. (p.16).

*How much impact can be achieved?*

SEC (2008) 2163 states that the main economic impacts of this proposal come in the areas of:

- additional costs of cross-border healthcare treatment for public funds;
- additional benefits from cross-border healthcare
- overall cost of compliance
- specific administrative burden

We briefly describe some of the elements mentioned in SEC (2008) 2163, for illustrative purposes.

The first economic impact is the additional costs to Member States of cross-border healthcare and in particular, the additional costs arising from treatment being provided in another Member State. In economic terms, the cost of the difference between spending funds at an earlier or later point in time can be represented by the interest applicable to the funds in question. To get a general impression of these costs, a simple model can be used, combining:

- the estimated number of people for whom it is potentially quicker to seek treatment abroad,
- the likely average cost if they do so,
- an estimated average time difference in comparison to domestic treatment
- and thus the additional cost represented by the discount rate applied to the amounts and times in question.

According to SEC (2008) 2163, it can be roughly estimated that on average 1.6 percent of the European population is currently on a waiting list, which is equivalent to approximately 7.8 million EU citizens. However, evidence about take-up of cross-border healthcare suggests that in practice, most people will still prefer to have healthcare at home. (p.34). Most 10% of people waiting will seek cross-border care in practice on this basis. Although data about comparisons of costs between Member States and patterns of cross-border healthcare are largely lacking, in order to estimate average costs for treatment abroad, we can use recent research comparisons of costs for different forms of treatment across the European Union.

Of course, being treated more quickly abroad does not simply bring costs, but also benefits through treatment being provided more quickly. In order to put a quantified value on such benefits for cost-utility analysis, health improvements are typically measured in quality-adjusted life-years (QALYs). The amount of time spent in a health state is weighted by the utility score given to that health state. If a patient is treated quicker abroad, he/she will be able to get to a healthier status more quickly. For example, it may be that a cross-border patient is treated three months earlier than at home – this can be expressed in terms of the lost of productivity due to illness that has

been reduced (an economic value), or in the broader sense in terms of QALYs. Estimates for the value of a QALY vary widely, and of course any such average figure cannot fully reflect the variations in development and cost of living throughout the European Union. A relatively conservative estimate is €40,000, but this is only an indicative figure to enable some rough modelling of the potential benefits of cross-border healthcare.

Apart from the direct costs and benefits of treatment provided in another Member State, there are also the associated costs for administrations in implementing the necessary systems to administer such cross-border care, such as additional systems for paying for such care, estimating how much the care in question would have cost had it been provided domestically, and ensuring appropriate monitoring of care and continuity between domestic providers and providers in other Member States.

In order to comply with the existing jurisprudence of the European Court of Justice on the application of free movement rights in order to have access to healthcare abroad, Member States will have to incur costs no matter what; the question is not whether to invest in PEGS in the area of cross-border health care, but rather how to do it in an effective way. SEC (2008) 2163 states that data about the size and nature of such compliance costs for health systems is largely lacking. Moreover, the size and nature of costs will vary according to the different organisations of health system used within the different Member States. Any estimation of such compliance costs is thus necessarily approximate. Subject to these qualifications, however, and based on the experience of existing cross-border cooperation projects, SEC (2008) 2163 estimates that the total additional compliance cost due to health care being obtained in a different EU country is 5% of the total cost of the care involved.

In the context of impact assessment, administrative burden has a specific definition, being the costs incurred in meeting legal obligations to provide information. As with overall compliance costs, data about the size and nature of this administrative burden for health systems is largely lacking; and again, the size and nature of these costs will vary according to the different organisations of health system used within the different Member States. The standard cost model has been used to calculate the administrative burden although, due to lack of robust data, in a simplified manner. In order to provide some approximation of these costs, SEC (2008) 2163 has taken a model of how Member States could develop information mechanisms such as websites, brochures and information centres to inform citizens about cross-border care, drawing on comparisons with existing initiatives and projects providing information to citizens under the public health programme.

Some estimate of the likely scale of enquiry from citizens for information is needed; for this, SEC (2008) 2163 takes the results of the Eurobarometer in terms of the number of citizens receiving cross-border healthcare, and assume that at least twice as many people will make information enquiries as actually go abroad, giving a total of 8% of the population as the likely scale of people seeking information. If for example we assume that these 8% of the population (40 million citizens) seek further information, requiring a transaction time of approximately 8 minutes of staff time to answer, costing

approximately € 20 per hour, the total costs for the Union as a whole will be around € 100 million per year. This is of course a highly theoretical and simplified model, simply intended to give some kind of impression of the overall scale of the administrative burden of Community action in this area, and the directions of change under each option. (p.38)

There are also wider macro-economic impacts to be considered. Through enabling cooperation and comparison, action in the field of cross-border healthcare will lead to more efficient provision of healthcare and will improve the overall quality and resource usage of healthcare systems as whole. As the healthcare sector is an important provider of employment and of innovation, its contribution to overall macro-economic development is substantial, and thus these improvements can be expected to help contribute to the sustainability of health systems and overall economic growth and development.

Healthcare systems have a specific impact on the economy, irrespective of the ways in which the system affects health. As one of the largest service industries, the health sector represents one of the most important economic sectors in the EU. Currently its output is estimated to account for about 7.7 % of GDP in the EU, larger than the roughly 5 % accounted for by the financial services sector or the retail trade sector. And around 9% of all workers in the EU-25 are employed in the health and social work sector. Trends in productivity and efficiency in the health sector therefore have a large impact on these performance measures in economies as a whole. Moreover, the performance of the health sector will affect the competitiveness of the overall economy via its effect on labour costs, labour market flexibility and the allocation of resources at the macroeconomic level. Inequalities in healthcare are also a key dimension of regional disparities, both in terms of the inputs provided to them and the outcomes they produce. Improving the efficiency and effectiveness of health systems is therefore a vital contribution to improving the overall economic growth, competitiveness and cohesion of the Union as a whole. (p.22)

In addition to these direct impacts related to the direct objectives of the initiative, Community action on cross-border healthcare would also have a wider impact on the overall goals of the health systems of the Member States, and to the growth, competitiveness and cohesion of the Union as a whole. Although it is not possible to quantify this contribution, the types of impacts and the likely relative magnitude of impact between the different options is briefly indicated.

Far from undermining national provision, in the long term cross-border healthcare can therefore provide concrete comparisons and demonstration of better practices that help to improve domestic care, not reduce it. Having the alternative of contracting abroad not only means that demand for health care is better satisfied as supply is increased, it also serves as a strategy to warn national providers that they could lose patients and contracts as purchasers turn to providers in other countries. The very possibility of going cross-border puts pressure on national providers to improve their performance and/or lower their prices. (p.44)

The Commission does not only have an enabling and facilitating role, but also an initiating and executive role. For example, on 30 September 2008, the European Commissioner for Health, Ms Androulla Vassiliou launched the 'Europe for Patients' campaign in Brussels. The campaign highlights the different health policy initiatives the Commission intends to adopt in the coming months. A Europe for Patients webpage has been set up on the EU Health Portal in 22 languages. It will become an information hub where information on the Europe for Patients initiatives will be regularly updated. Related national and EU-level documents, articles and events will also be posted on the new website.

*To what extent can this impact be attributed to PEGS?*

This is the question which impact assessment in the area of PEGS needs to answer, not only in the specific case of health care, but more in general, for PEGS in all domains. In order to answer this question, a scientific study may be necessary, in which the opportunity costs could be calculated: the costs of not developing and implementing PEGS. Such a study requires sophisticated analysis using a number of economic models.