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

Pan-European eGovernment Services (PEGS) in perspective: function, forms, actors, areas, pathways and indicators.

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**CONTENTS**

## Preface

This document is part of the EUReGOV project on 'Innovative adaptive pan-European eGovernment services for citizens', commissioned by the Directorate-General Information Society of the European Commission. In the EUReGOV project, tools for policy analysis are developed in order to support policy making in the area of cross-border and pan-European eGovernment.

A first version of this report has been discussed at an internal expert workshop on April 26 2007. The discussion of this workshop has led to important additional insights about how to approach the issue of PEGS, in terms of definition, specification and measurement. These insights have been processed into this current adjusted version of the report. A next round of validation took place in June 2007, involving a number of content experts and MS experts.

The authors are aware of ongoing discussions and developments in the field of pan-European eGovernment services development and delivery; as well as proposed changes in the benchmarking methodology. Some of these developments have emerged during the validation process and have been addressed where possible within the iterative method followed for this paper. However, not all of these can be sensibly taken on board at this late stage.

**Summary**

This report deals with pan-European eGovernment Services (PEGS). Presently, most eGovernment services are provided at the national or sub-national (regional, local) level. There are several ways in which to add a cross-border dimension; ranging from relatively simple such as making a service available in another language than the national Member State level, to more complex ways such as information sharing between public administrations of different Member States, or even a European level provision of a service in which parts of the public administrations of all Member States participate as 'back office' to this service. The term 'pan-European eGovernment services' (PEGS) may seem to imply that only the latter example (service provision at the European level) would classify as a PEGS. However, it would be not useful to understand PEGS in such a limited way. PEGS are important because they add a European dimension to eGovernment services, and it is this European dimension and the progress towards it that matter.

PEGS come in different forms, are developed by different actors and in different areas, and have different development trajectories. To capture this heterogeneity and emerging properties a broader, more generic definition of PEGS and a better understanding of the function of PEGS are needed. This report explains what considerations should be taken into account when developing policy for PEGS, and draws some implications for tools for policy analysis such as indicators.

The report provides (1) a discussion of the policy basis for developing PEGS, (2) a definition of PEGS in which different forms, actors and areas are distinguished, (3) a discussion of specific areas in which (further) PEGS development can be expected (e.g. areas related to mobility and the Service Directive), and (4) a proposal for a few simple indicators reflecting the state of play in the area of PEGS development..

## 1. Introduction

An important benefit of being part of Europe for the citizens of European Member States (MS) is the freedom of movement. In principle EU citizens are free to live, work, study and retire in whichever EU Member State they want. This option of mobility is valuable in itself, but it is also essential for the realization of a number of important European policy goals which carry great benefits for MS and their citizens. For example, mobility of citizens is crucial for further realizing the internal market, in which the markets for products, services and labour can rearrange themselves within Europe in an economically and socially closer to optimal way.

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

To develop a concrete vision and effective policy in this area, it is important to know to what extent eGovernment services currently have a cross-border or even pan-European dimension at this moment, and what this dimension looks like. This information will provide an overview of how different actors in the EU (local, regional, national, European) are performing in terms of PEGS development, which in turn can help to increase insight into drivers and barriers, and thereby into what kind of policy would be effective to support PEGS development.

The report will discuss the policy basis for the development of PEGS (chapter 2); it will identify different forms and ways of PEGS development, in which different actors, areas and incentives are relevant, and propose a definition of PEGS reflecting this heterogeneity (chapter 3), and it will propose a few simple indicators that can be used for benchmarking the readiness of MS to develop PEGS, in terms of awareness and intention (chapter 4).

## 2. Policy basis

The importance to develop eGovernment services with a cross-border or European dimension has been recognized in a number of policy documents[1] and programs[2] over the past years, most recently in the Ministerial Declarations of Manchester 2005 and the i2020 eGovernment Action Plan of 2006.

### 2.1. Ministerial Declarations of 2003 and 2005

In the 2003 Ministerial Declaration of Como,[3] it was declared that the Ministers of the Member States "recognised the need of close cooperation between European Commission and the European Countries in order to define pan-European standards and to identify and implement effective pan-European online services" (p.2). Pan-European eGovernment Services "should cement further the four freedoms of the single market enabling citizens and enterprises from one EU Member State to settle, work or trade in another Member State" (p.2).

In Ministerial Declaration of Manchester in 2005[4] it was stated that: "Over the period 2006-2010 emphasis will be put on high-impact services designed around citizens' and businesses' needs which support progress towards the Lisbon goal. These services might include services related to pan-European citizen mobility, improved job search services across Europe, access to personal information such as patient records, education, pensions, culture and leisure and enterprise mobility such as company registration and VAT refunding" (p.4-5).

The Ministers declared that they "invite the European Commission to develop, in close cooperation with the Member States and taking into account national contexts, a set of common, clear and specific indicators to measure the outcomes in relation to the goals of this Declaration, as far as is possible, and to provide detailed data from across the Member States in time for the fourth Ministerial eGovernment Conference" and "invite the European Commission to monitor progress against the abovementioned set of indicators in close cooperation with the Member States" (p.6).

### 2.2. The i2020 eGovernment Action Plan of 2006

The policy declaration of the Ministers of the EU Member States formed the basis for the i2010 eGovernment Action Plan.[5] In this plan it is stated: "As the European Union continues to enlarge and embrace greater diversity, new needs and demands are arising such as for seamless public services across borders, essential to increase citizens' opportunities for mobility and for business in Europe. eGovernment can help governments to meet these challenges and demands" (p.3).

"With this Action Plan the Commission seeks to: accelerate the delivery of tangible benefits for all citizens and businesses; ensure that eGovernment at national level do not

[1] Such as the eEurope Action Plan 2005 (http://ec.europa.eu/information_society/eeurope/2005/index_en.htm)
[2] Such as IDABC.
[3] Ministerial Declaration, Como 7-8 July, see http://ec.europa.eu/information_society/policy/psi/docs/pdfs/ministerial_declaration.pdf
[4] Ministerial Declaration, approved unanimously on 24 November 2005, Manchester, United Kingdom. http://www.egov2005conference.gov.uk/documents/proceedings/pdf/051124declaration.pdf
[5] COM(2006) 173 final, *i2010 eGovernment Action Plan: Accelerating eGovernment in Europe for the Benefit of All*, Brussels, 25.04.2006. http://ec.europa.eu/idabc/servlets/Doc?id=25286

lead to new barriers on the single market due to fragmentation and lack of interoperability; extend the benefits of eGovernment at EU level by allowing economies of scale in Member States' initiatives and cooperating on common European challenges; ensure cooperation of all stakeholders in the EU in designing and delivering eGovernment." (p.3-4).

The i2010 Action plan emphasizes the importance of the cross-border and pan-European dimension of eGovernment services: "[A] number of services delivered across borders make a significant difference to citizens, businesses and administrations and can act as flagships for European eGovernment" (p.7). "Over the period 2006-2010 the Commission will in cooperation with Member States explore high impact services with a pan-European dimension that contribute most to the achievement of the Lisbon Agenda. Specific attention will be paid to citizen mobility services, such as improved job search services across Europe, social security services relating to patient records and electronic health prescriptions, benefits and pensions across Europe, and educational services relating to studying abroad" (p.8). The aim is to respect the different national approaches and solutions without creating a barrier to using public services across borders (p.9).

### 2.3. The role of the Commission

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

The policy documents above provide the policy basis legitimating and guiding the actions of the European Commission in the area of stimulating the pan-European dimension of eGovernment. The principle of subsidiarity is central in the area of policy for the public sector; the Member States are the key actors in this. However the Commission is expected to play a facilitating role in development of PEGS. Providing information about the state of play with the help of indicators, measurement frameworks and benchmarking is an important element of this facilitating role. It is in this vein that the present proposal for indicators capturing different emerging PEGS dimensions must be understood

### 2.4. The role of Member States

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

The Member States have confirmed the importance of developing PEGS in the 2003 and 2005 Ministerial Declarations in principle, in practice it does not always seem to be a high priority. Member States generally focus on developing eGovernment at the local/regional and national level. In a report written for the preparation for the update of the European Interoperability Framework 2.0, it was investigated how MS feel about PEGS development. [6]

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

In this report it is observed: "Member States are internally focused and have a low priority for pan-European e Government Services (PEGS). At the same time several demonstrate advanced thinking and operations. Directorates General have different views on PEGS resulting in suboptimal cross DG synergies. The industry is interested in PEGS development and exploitation. However, it has not yet found its true public service value propositions." (p.ii)

In addition, it is reported that: "Gartner conducted seven Member State visits. During these visits it appeared that pan- European e-government is not a key priority on the management agenda of the Member States. All visited states focus on delivering e-government services locally. The e government infrastructures developed by Member States are all aiming for the provision of national public services" (p.12). "Gartner interviewed 22 persons involved in e-government/interoperability initiatives. The interviews confirmed that there is currently no explicit sense of urgency to deliver PEGS" (p.14).

"The Member States like to keep their autonomy on various levels and prefer a federated approach" (p.11). "The development of services is seen as a bottom-up approach. For the development of concrete propositions for pan-European e-government services a strong cooperation is expected with other Member States" (p.13).[7]

The role of the MS is crucial for the development of PEGS. For PEGS to be developed MS should see their added value (in certain areas, with a certain scale and scope) and determine which would make sense, and which are important for optimal resource allocation (more on this in section 3.2). At the same time, the advantages of PEGS to MS and their citizens may only become clear once a critical mass of mutual multilateral cross-border service provision is developed. PEGS have the character of a network and the positive network effects are generally occurring not immediately and linearly, but rather upward sloping and above a certain threshold it this is reached. Thus it is important to actively communicate the importance of PEGS and the dynamics of their development, and to make clear what their added value will be in order to get PEGS development at a higher, more appropriate place of the MS eGovernment agendas.

### 2.5. The role of non-public actors

Although PEGS are public services, the development and provision of PEGS is not necessarily exclusively a public sector affair. On the contrary, increasingly the public sector makes use of other parties in society (businesses, civil society organizations) to realize public goals. The reason for this is that in many cases this is more (cost-) effective allowing higher quality of public service provision with a better return on spending public resources, and in addition that the possibilities for involving other parties in meaningful ways without too many transactions costs have increased, especially in fields of the public sector where information and communication technologies play a central role. There is a development towards a more 'networked government' in many ways. The recent report of Millard[8] gives an insightful account on what a networked government looks like and could look like in the area of eGovernment.

"The functions of government are increasingly taking place across different agencies and in collaboration with the private and civil sectors. In order to fulfil its mandate and roles, the public sector now often partners with, and sometimes outsources to, other stakeholders in the private and civil sectors, including at community level. Such cross sectoral collaboration clearly also has significant implications for the roles and activities

[7] Preparation for Update European Interoperability Framework 2.0 – Final Report, Gartner 14-02-2007
[8] Millard, Warren, Leitner, Shahin (2006): Towards the eGovernment Vision for the EU in 2010: Research policy challenges (IPTS)

which government retains, how these are organised and how the public sector is structured as a result, including in the back office."[9]

Information and communication technology holds great possibilities for networking the activities of the pubic sector (1) within public administrations of Member States, connecting different administrations at different levels and different policy areas, thereby integrating policy chains greatly increasing the quality of public services, (2) between public administrations of Member States at different levels and in different policy areas effectively enabling the development of PEGS, and (3) between public administrations and other actors in society such as businesses (which may be able to achieve better cost-benefit ratios for certain parts of public service provision) and civil society organizations (which may have better access to target groups of citizens and may be able operate more flexible and effectively)

Millard observes: "The expectation is that ICT would have a profound and transforming impact on stakeholder collaboration. ICT is, in essence, a networking technology, which both enables decentralised governance activities as well as facilitates coordination and adaptation to the specific needs of users, localities and interests. However, to date, rather limited progress has taken place, although there are some areas, such as service outsourcing, which are becoming quite significant. This leaves open the question as to how ICT should best be used in the future to maximise governance, using all relevant societal resources wherever these are found, whilst ensuring that the public service ethic which underpins European social values is upheld."

This is an issue which addresses the future mandate and competence of the public sector in a fundamental way.[10] In the area development of PEGS, the current and potential future role of non-public parties needs to be investigated in order to make best use of the new possibilities for partnership that technology offers. In some ways involving non-public partners will make PEGS development easier, but in other ways it can make it even more complex because it increases the challenge of dealing issues of authority, competences and (democratic) control which already are complex and challenging in the case of PEGS development (see also 2.4 and 3.1 in this report).

[9] Millard further elaborates: "Three inter-related technology clusters are of relevance here, each of which seems to underpin its own specific set of developments of high relevance to the hotspot. These are technologies which support, in turn: a) networking within the public sector and with other stakeholders, b) back-office and inter-organisational reorganisation as a result of such stakeholder networking, and c) bottom-up and user-driven development which focuses on the user as a potentially powerful new stakeholder." […] "The notion of shared services and applications is an important aspect of joined-up networked government, both for the different sectors involved as well as for users. This includes the establishment of middle offices, shared service centres, localised front-end services built on shared back end architectures, and implies a modular (building block) approach where investments and resources can be pooled and shared. In principle, service design, production and delivery is seen as a value chain linking all stakeholders, often in terms of formalised partnerships, including outsourcing. A large number of different partnership models are employed, such as commercial, not-for-profit, delegation, joint ventures, or complete outsourcing to private commercial partner(s) or consortia."

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

## 3. PEGS in perspective

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

### 3.1. Some initial considerations about pan-European scale eGovernment

A major goal of eGovernment is to increase the efficiency and effectiveness of public service provision, so that citizens can be better served with lower costs. European citizens increasingly are mobile, living and working in other Member States. This is mobility of citizens is actively stimulated by policy at the level of MS and the EU itself, because it is expected to contribute to a closer to optimal economic and social arrangement of Europe, which is to the benefit of all. Mobility is thus becoming a normal feature of citizens, and should become embedded into public service provision. However, presently public service provision is by and large regionally and nationally organized, following a geographical logic which historically made sense but currently is becoming less adequate. A European dimension of public service provision is needed; however it is not immediately obvious in what way(s) this should be achieved.

A full-fledged European level public administration can in principle facilitate European mobility, but is generally considered to be neither feasible nor desirable. The diversity of public administrations of different Member States is a fact and will largely remain, and there are some good reasons for this. To begin with, the historically grown institutional variety is valuable and often optimal in many ways, specific institutions matching well with specific (economic, social, cultural, geographical) characteristics of a specific Member State and its regions. Secondly, the optimal level of service provision will generally not be the European level. The principle of subsidiarity states that matters of governance ought to be handled by the smallest (or, the lowest) competent authority; a central authority should have a subsidiary function, performing only those tasks which cannot be performed effectively at a national or local level. Thirdly, the democratic accountability of governing bodies towards their citizens is still largely organized at the local, regional and especially national level of MS. Thus the optimal level of public administration generally will also be at that level, not only from the perspective of effectiveness but also from the perspective of democratic legitimacy.

When developing a European dimension of public service provision, these considerations should be taken into account. The challenge is to recognize and maintain the value of the diversity of MS public administrations, respecting the principle of subsidiarity and the importance of democratic legitimacy, while at the same time reducing the costs deriving from this diversity. E-government has unique qualities to achieve just that, by drastically reducing the constraints of geographical distance on public service provision, and by enabling relatively low-cost interoperability between heterogeneous actors (public administrations at the local, regional and national level) with different institutional set-ups. Stimulating the development of a cross-border dimension of public service provision in general, and stimulating pan-European eGovernment services (PEGS) for citizens in

particular, has thus been declared a priority by the responsible Ministers of the EU Member States.[11]

Pan-European eGovernment Services (PEGS) in the strict sense of the term are digitally provided public services which are provided at a pan-European scale. An exploratory quick-scan of existing PEGS in the Good Practice framework of the European Commission (EC) (reference) conducted under the EUReGOV project indicated that there are (very) few full-fledged PEGS beyond services provided by or facilitated by the EC (largely information services). This is not surprising; it is an area that is still very much in development, and although there may not be many PEGS currently in the strict, narrow sense of the word, there are a growing number of services provided by a variety of actors at different levels (local, regional, national) that have a cross-border dimension, effectively contributing to the development of a European scale public administrative space. The development of a pan-European dimension of public service provision does not necessarily imply that all services should be available at a fully pan-European scale, provided by all Member States to all EU citizens. On the contrary, often this will not be desirable; the cross-border dimension of public service provision should be need-based, and there are large groups of citizens that are not mobile, while the citizens that are mobile show quite distinct (geographical) patterns of mobility and quite particular needs.

The reason to develop a European dimension to public service provision is to reduce unproductive administrative barriers that are costly to MS and their mobile citizens and hamper desired cross-border activity between Member States. PEGS are important but by no means the exclusive carriers of this process of pan-Europeanization of public service provision. The development of a cross-border dimension of any kind and degree (e.g. bilateral, multi-lateral, intercity, interregional) eGovernment service with a cross-border dimension contributes to this.

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

### 3.2. The definition of PEGS

A definition for Pan-European eGovernment Services (PEGS) was given in article 3b of the Decision 2004/387/EC of the European Parliament and of the Council on 21st of April 2004: "Pan-European eGovernment services' mean cross-border public sector information and interactive services, either sectoral or horizontal, i.e. of cross-sectoral nature, provided by European public administrations to European public administrations, businesses, including their associations, and citizens, including their associations, by means of interoperable trans-European telematic networks.".

The definition above, and related definitions of and references to PEGS in other policy documents state that PEGS do not necessarily have to be provided by a pan-European

[11] See section 2 for the documented policy basis of this.

provider. For example, the IDABC report states: "PEGS have been defined as cross-border public sector services supplied by either national public administrations or EU public administrations."[12] Thus, eGovernment services can be provided by national or EU level public administrations in order to qualify as PEGS.

The EIF 2.0 report (2007) gives the following definition on page 56: a pan-European service is "public service which involves actors from two or more EU Member States."

Are PEGS simply public services with a cross-border dimension? The IDABC (2003) report on PEGS proposes that this is a necessary but not sufficient condition: "Since a PEGS must in principle be accessible for the whole of Europe or a substantial part of it, it is a cross-border public sector service. But since not all cross-border public sector services have a need for exchange of information via interoperable networks, not all cross-border public sector services are PEGS" (p.6)[13]. A proposed difference between PEGS and the more general category of cross-border public sector services is that "the latter is under the full control of the national public administrations in Member States, whereas the former requires cooperation and interaction with other Member States and/or EU administrations" (p.6).

PEGS main distinguishing feature is that they contribute in some way to the pan-Europan dimension of public service provision. If a Member State makes its services available to its own citizens living elsewhere in another Member State, or to citizens of other Member States (even if only by providing public information in different languages), this will effectively contribute to the pan-Europeanization of public services – even when the Member State acts completely unilaterally, not cooperating or interaction with other Member States an/or EU administrations. Cross-border public services provided unilaterally by a Member State government without significant cooperation and interaction with other MS governments and without the use of dedicated "interoperable trans-European telematic networks" can nevertheless contribute to the further realization of a European public space, and can increase the probability of interaction and cooperation with other MS in a next phase. For assessing the progress towards more pan-European eGovernment, information about such unilateral MS public eServices facilitating cross-border activities is relevant. It should be included in the definition of PEGS so as to capture the full range of steps towards pan-Europeanization.

Mobility of citizens in Europe living and/or working in another MS than their own is often concentrated at the borders of MS, in 'Euregions'. Next to the national government, regions or cities can be relevant actors for providing eGovernment services with a cross-border component to citizens. Since this also contributes to pan-Europeanization, these actors should also be included in the definition. The 2007 EIF 2.0 report also points out the importance of a more open, flexible approach including a variety of actors, emphasizing that the European Interoperability Framework (EIF) should "enable local and parallel development, deployment and use of pan- European public services by a multitude of central, regional and local constituencies, both public and private. This releases the true innovative power of the European Union." (p. 58)

We are interested not in PEGS in the narrow sense, but in PEGS as a means to increase the pan-European dimension of eGovernment. This means that we are interested not in pan-European eGovernment but in the process towards it, the 'pan-Europeanization' of

[12] For example, the CapGemini report in the preparatory phase of IDABC proposes the following definition: "PEGS have been defined as cross-border public sector services supplied by *either* national public administrations *or EU public administrations*, provided to European businesses and citizens by means of interoperable trans-European telematic networks between public administrations. One of the main characteristics of a PEGS is the exchange of information between public administrations in different Member States" (p.8). *Study on stakeholder requirements for pan- European eGovernment Services*. Final report. Ranking and description of PEGS,Version 1.3, CapGemini (2004).

[13] CapGemini (2003) *Study on stakeholder requirements for pan- European eGovernment Services*. End of Phase 1 Report, version 1.1.

eGovernment. This process has different forms and phases, and we want to gain more insights in these and have policy information about these. That is what we should capture in the definition. The definition should not only be broad enough, but also be relatively simple to use, in order to be useful not only conceptually but also practically.

Given the considerations discussed above, the following definition is proposed:

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

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

The definition needs further specification at several points.

The term 'significantly' refers to the impact of a service on pan-Europeanization of public administration, which in turn depends on how much it contributes to the realization of a number of policy objectives that are the reason why a certain degree of pan-Europeanization of public service provision is desirable (see 3.3)

PEGS can be provided by a number of actors: public administrations at the local, regional, national, multinational and supranational (European) level. PEGS can be targeted at different target groups of citizens, for example knowledge workers. Given the aim for an optimal (rather than maximal) pan-European dimension, these actors should have sufficient incentives to stimulate PEGS development and the target groups should be sufficiently benefiting from PEGS development; there should be favourable cost-benefit ratios for the actors given the nature of the service and the target group.

PEGS contribute to the pan-European dimension of public administration when they facilitate cross-border activity in the EU in the broad sense of the word, anything that enables and facilitates (further) mobility of citizens and businesses. As will be discussed later, the focus should be on PEGS with high impact (HI-PEGS), and HI-PGEGS are PEGS that contribute in particular to certain prioritized policy trajectories aimed at increasing cross-border activity in the EU, such as the Service Directive.

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

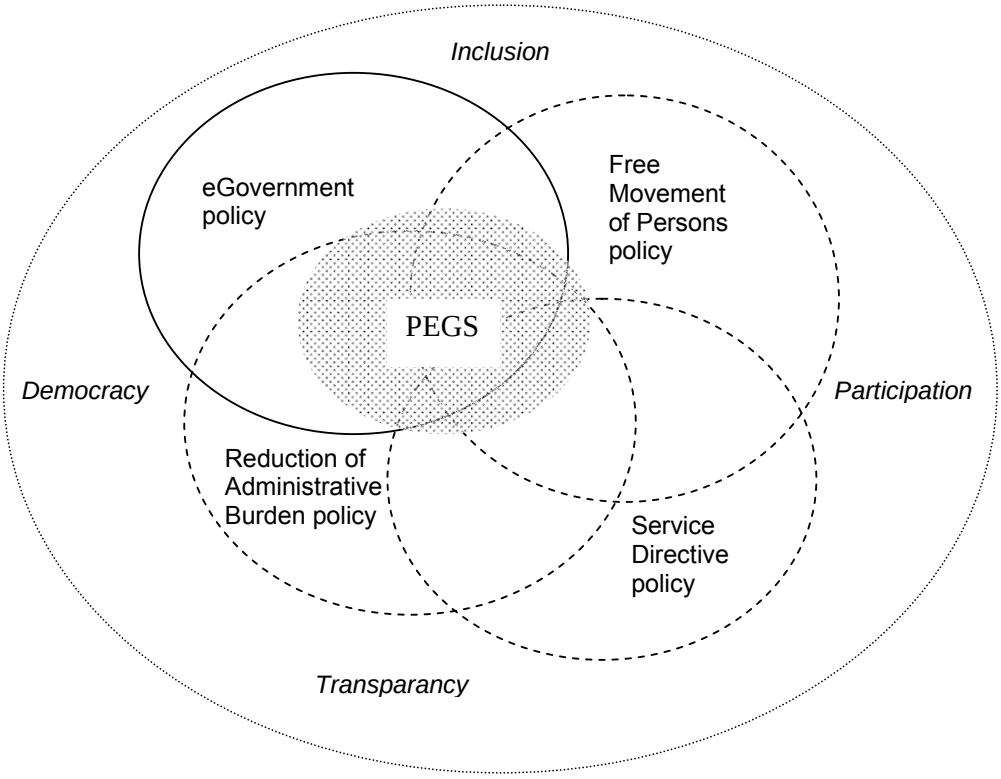
The definition above is a general definition of PEGS. In this project, the focus is on PEGS for citizens (G2C); thus eGovernment services for businesses (G2B) are not taken into account. EGovernment services provided by public administrations to each other (G2G) are in themselves not taken into account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

### 3.3. Key policy areas for PEGS

The aim of PEGS is to realize an optimal (rather than maximal) pan-European dimension of public administration. Given this aim of optimality and given that resources are limited, policy for PEGS should prioritize. Prioritization of PEGS development in terms of

necessity and impact, can be done by requiring that PEGS contribute to specific key policy areas of Europe and its Member States which are guaranteed to be of high impact and for the realization of which eGovernment with a cross-border dimension is essential.

There are three related policy areas especially relevant for providing incentives for PEGS development and guaranteeing impact of PEGS development, because PEGS are deemed a necessary component to realize the objectives agreed on in these policy areas by MS. PEGS in these areas will fulfil the conditions of having a threshold value of sufficient incentives and of high impact, and thus the degree of relevance of potential PEGS for these areas can be used for prioritizing PEGS development. Literature review and an internal expert workshop on April 26 2007 showed that there are three policy areas in which the incentives for PEGS development are strongest: (1) Freedom of Movement of persons, (2) the Service Directive, and (3) Reduction of administrative Burden. These related high profile policy areas will be briefly discussed below, with a focus on the importance of cross-border provision of eGovernment service for each of them.




**Policy context of PEGS**

*3.3.1. Free Movement of Persons*

Freedom of movement of persons within the EU is one of the four freedoms (movement of goods, services, persons and capital) which were core aims of the European Union already at its beginning many decades ago. In the Treaty of Rome establishing the European Economic Community (EEC) in 1957. Article 2 of the EEC Treaty specifies that "The Community shall have as its task, by establishing a common market and progressively approximating the economic policies of member states, to promote throughout the community a harmonious development of economic activities, a continuous and balanced expansion, an increase in stability, an accelerated raising of the

standard of living and closer relations between the states belonging to it." This common market is founded and depends on the "four freedoms": the free movement of persons, services, goods and capital. The central ideal is that a common internal market will bring many economic and social benefits to Member States, but will only be realized by the free flow of economic factors. Member States are obliged to actively remove barriers towards the flow of these factors of production, and thus to remove barriers towards mobility of persons. Administrative barriers are among the most important ones in this respect.

Notable in the context of freedom of movement of persons is Article 12 of the EC Treaty which prohibits discrimination on the basis of nationality. Broadly defined, the freedom of movement of persons enables citizens of one Member State to travel to others, alone or with their families, to work there (permanently or temporarily), to visit places as tourists or simply to live there. The idea behind EU legislation in this field is that citizens from other Member States should be treated equally with domestic ones – they should not be discriminated against. The main provision of the freedom of movement of persons is Article 39 (ex 48) of the EC Treaty that prohibits restrictions on the basis of nationality. This is complimented by some other important provisions, such as Regulation 1612/68 on the rights of workers and the recent Directive 2004/38 on citizenship. Workers have the right to move to a different Member State, to look for work and be employed under the same conditions as nationals of that State and benefit from the same social and tax advantages.

Despite considerable advances, EU citizens still face problems when they move to another Member State. Common difficulties concern notably the lack of information about the extent of their rights and lengthy administrative procedures in obtaining residence documents. The Directive 2004/38/EC adopted by the Parliament and Council on 29 April 2004, on a Commission's proposal (COM (2001) 257 in JOC 270 E of 25 09 2001) was meant to overcome these difficulties. Among the main objectives of the Directive are to simplify the conditions and administrative formalities associated with the exercise of the right of free movement and residence in the Member States.

The obligation to enable the free movement of persons in the EU in order to gain the benefits of the internal market is not the only reason for Member States to aim for a cross-border dimension for their eGovernment services. Public administrations are increasingly aiming to become more citizen-centric. Given the increasing mobility of citizens, adding a cross-border dimension to public services fulfils an important growing need of citizens. Public service provision is in practice not tied to the citizen and his activities but to a geographical space. As the activities of citizens increasingly bring him or her outside of his or her national geographical space, the accessibility and quality of public service provision becomes less adequate. Mobile citizens are in that respect at a disadvantage compared to non-mobile citizens. The costs of living or working in another Member State and of being part of more than one national public administration are substantial for citizens. This is at odds with the principles of equality and universal access – basic principles for a public sector.

In addition, there are other non-economic reasons for PEGS development to facilitate mobility of citizens. As the horizon and activity patterns of many citizens of EU Member States become increasingly European, the possibility to participate in public affairs beyond the borders of a Member State becomes increasingly important; it contributes to core European goals such as participation, democracy and inclusion. Developing the pan-European dimension of eGovernment can help to realize this.

### *3.3.2. The Service Directive*

Currently there are concrete obligations that require cross-border eGovernment services for citizens deriving from one of the other 'freedoms', the free flow of services, related to the implementation of the Service Directive which MS have obliged themselves to for 2009. The objective of the Services Directive is to achieve a genuine Internal Market in services by removing legal and administrative barriers to the development of service activities between Member States."[14] E-Government is expected an important role in facilitating the conditions for implementation of the Service Directive.[15]

In implementing the EU Services Directive , the 27 Member States of the European Union are requested to achieve the aim of administrative simplification through provisions governing, amongst others, the electronic processing of transactions by means of a single contact partner by 28 December 2009.

A number of articles of the Service Directive are relevant from the perspective of pan-European eGovernment for citizens.
Article (8) excludes public services from the Directive: "It is appropriate that the provisions of this Directive concerning the freedom of establishment and the free movement of services should apply only to the extent that the activities in question are open to competition, so that they do not oblige Member States either to liberalise services of general economic interest or to privatise public entities which provide such services or to abolish existing monopolies for other activities or certain distribution services."

In order to facilitate what is needed for realizing the objectives of the Service Directive, administrative barriers for businesses from other Member States but also for citizens have to be reduced. Services offered by business from other Members States will often imply the involvement of employees from other Member States.
Article 42-45, and in particular article 46 described what needs to be done in terms of reduction of administrative burden in general, and for the administrative burden related to cross-border activity more in particular. In article 46, there is explicit mentioning of the role of eGovernment in achieving this.
Article (46) In order to facilitate access to service activities and the exercise thereof in the internal market, it is necessary to establish an objective, common to all Member States, of administrative simplification and to lay down provisions concerning, inter alia, the right to information, procedures by *electronic means* and the establishment of a framework for authorisation schemes.
In Article 48 the "one-stop-shop" is mentioned: "In order to further simplify administrative procedures, it is appropriate to ensure that each provider has a single point through which he can complete all procedures and formalities (hereinafter referred to as "points of single contact")"

There are many obligations for MS to provide information to businesses and citizens, and the most cost-effective way of doing this is by eGovernment. For example in article 50 and 51:
Article (50): "It is necessary for providers and recipients of services to have easy access to certain types of information. It should be for each Member State to determine, within the framework of this Directive, the way in which providers and recipients are provided with information. In particular, the obligation on Member States to ensure that relevant information is easily accessible to providers and recipients and that it can be accessed by the public without obstacle could be fulfilled by making this information accessible

[14] http://ec.europa.eu/internal_market/services/services-dir/index_en.htm
[15] For example, the pan-European eGovernment service for business is mentioned in this context. "[I]t can often be difficult to get precise information on the regulatory framework, the competent authorities and the procedures which need to be complied with in other Member States. That can make things even harder. The Commission has recently launched its SOLVIT network, with the aim of making it easier for businesses to make full use of their Internal Market rights (IP/02/1110)."
http://europa.eu/rapid/pressReleasesAction.do?reference=IP/02/1180&format=HTML&aged=0&language=EN&guiLanguage=en

through a website. Any information given should be provided in a clear and unambiguous manner."
Article (51) states: "The information provided to providers and recipients of services should include, in particular, information on procedures and formalities, contact details of the competent authorities, conditions for access to public registers and data bases and information concerning available remedies and the contact details of associations and organisations from which providers or recipients can obtain practical assistance. [...]

Article 52 points to the relevance of cross-border provision of eGovernment services: "The setting up, in the reasonably near future, of *electronic means* of completing procedures and formalities will be vital for administrative simplification in the field of service activities, for the benefit of providers, recipients and competent authorities. […] The fact that it must be possible to complete those procedures and formalities at a distance means, in particular, that Member States must ensure that they may be completed across borders."[16]

Article 92 refers to the recipients of services, often citizens in their role of consumers: "Restrictions on the free movement of services, contrary to this Directive, may arise not only from measures applied to providers, but also from the many barriers to the use of services by recipients, especially consumers. This Directive mentions, by way of illustration, certain types of restriction applied to a recipient wishing to use a service performed by a provider established in another Member State. This also includes cases where recipients of a service are under an obligation to obtain authorisation from or to make a declaration to their competent authorities in order to receive a service from a provider established in another Member State. This does not concern general authorisation schemes which also apply to the use of a service supplied by a provider established in the same Member State."

Article 105 has a general statement on the importance of G2G cooperation: "Administrative cooperation is essential to make the internal market in services function properly.". Article 107-109 points at the obligation for mutual assistance of MS in area of checking, inspecting, and informing.

There are many other places where implications of the obligation to really make national markets open for services from other Member States are put forward, in terms of administrative information provision and authorization. For example, in SEC(2003) 900, *Report on the application of internal market rules to health services*: "Thus, only a few Member States have recognised the right to reimbursement for certain non-hospital services, even in the absence of prior authorisation as laid down by the Court. In all the other Member States, the reimbursement of the costs of healthcare (whether hospital or non-hospital) provided in another Member State is covered by a system of administrative authorisation. The conditions for granting such authorisation, the procedure and the time taken, mean that a fundamental freedom guaranteed by the Treaty might well be rendered ineffective. Judging from the figures provided by the Member States, patient mobility is currently negligible."[17]

The obligations of Member States resulting from the legal commitment to facilitate the internal market, to enable freedom of movement of persons, to facilitate the implementation of the Service Directive and to reduce administrative burden in general and the administrative burden associated with cross-border activity in particular creates strong incentives to develop PEGS and to cooperate with other MS in this, in the areas that are of direct relevance for these obligations. It is important to point out that the

[16] The article continues to point out that "The obligation as to results does not cover procedures or formalities which by their very nature are impossible to complete at a distance. Furthermore, this does not interfere with Member States' legislation on the use of languages."
[17] http://ec.europa.eu/internal_market/services/docs/services-dir/background/2003-report-health-care_en.pdf

incentives do not only have the character of obligations but definitely also consist of favorable cost-benefit ratios in these areas.

### *3.3.3. Administrative burden reduction*

Administrative costs are important since businesses and citizens across the EU are required to spend considerable amounts of time filling in forms and reporting on a wide range of issues, resulting in significant direct costs and opportunity costs. In response to the June 2006 European Council conclusions and within the competitiveness framework of the re-launched Lisbon agenda, in 2007 the Commission is launching a major Action Programme to measure administrative costs and reduce administrative burdens generated by existing legislation in the EU. The Commission paper sets out a possible road map for achieving a cut of 25% in administrative burden, based on a partnership between the EU Institutions and the Member States.

The plan will build on the previous experience developed by four Member States (UK, NL, DK and CZ) that have already set reduction targets after completing large baseline measurements. There are presently only four Member States which have fully measured administrative costs. However, an assessment based on an extrapolation of Dutch data suggests that administrative costs may amount to circa 3.5% of GDP in the EU.[18] In 2004 the CPB, the Dutch Bureau for Economic Policy Analysis, estimated that reducing the administrative costs by 25% would eventually lead to an increase in EU GDP of 1.6%. Recent work carried out by the Commission services, building up on CPB estimates, indicates that a 25% administrative cost reduction may yield significant benefits of up to 1.5%- or some €150 billion- in the level of GDP.

In COM(2007) 23 final, the Action Programme for Reducing Administrative Burdens in the European Union[19], presented on January 24 2007, a reduction target of 25 % is proposed, to be achieved jointly by the EU and Member States by 20121. The overall 25 % reduction target is a joint objective, which can only be attained on the basis of a shared responsibility and a common endeavour by the Member States and the European Institutions.

"This Action Programme is not about deregulation. Nor does it aim to change policy objectives set out in the existing Community legislation or the level of ambition in existing legislative texts. Rather it represents an important effort to streamline and make less burdensome the way in which policy objectives are implemented – one important measure of the quality of regulation at every level. Unnecessary and disproportionate administrative burdens can have a real economic impact. They are also seen as an irritant and a distraction for business and are often identified as a priority target for simplification. The Commission is committed to assist in suppressing these unnecessary burdens at all levels and underlines that this is a shared responsibility of the Member States and the European Institutions."

The emphasis of the Programme is on reducing unnecessary administrative burdens in specific priority areas. Alongside the reduction target and priority areas, the Action Programme includes a list of fast track actions

Among the "common principles for reducing administrative burdens" (p.12), the need for streamlining administrative procedures is mentioned in the Action Plan, in which the ideal of a "on-stop-shop" comes forward: "review whether the same information obligation is

[18] Kox (2005): Intra-EU differences in regulation-caused administrative burden for companies. CPB Memorandum 136. CPB, The Hague.
[19] http://eur-lex.europa.eu/LexUriServ/site/en/com/2007/com2007_0023en01.pdf

not requested several times through different channels and eliminate overlaps" (p.12). Not surprisingly, eGovernment is mentioned explicitly: "require electronic and web-based reporting where paper based information gathering is presently required, using intelligent portals where possible" (p.12)

The policy trajectory for reducing administrative burden has its emphasis on reducing the burden for businesses, but clearly mentions the importance for reducing the burden for citizens at several places. This importance can not be underestimated. Research estimates that millions of hours time of citizens (and thus billions of euros in terms of direct costs and opportunity costs) can be saved by eGovernment in general. For example, in 2005, it was found that "online income tax declarations already save 7 million hours. If generally available and widely used in all Member States, the savings could rise to more than 100 million hours for citizens each year. On average, citizens and businesses save over one hour per service transaction" in: IP/05/41. "Electronic invoicing in Denmark saves taxpayers €150 million and businesses €50 million a year. If introduced all over the EU, annual savings could add up to over €50 billion," see COM(2006) 173 final, (p.3). Gains such as these can be expected to be even higher when it concerns mobile citizens (in terms of gain per citizen) because eGovernment takes away the geographical dimension which is for them even more relevant than for citizens within their own Member State. As the number of mobile citizens grows, the gains of developing a cross-border dimension of public service provision will also grow.

### 3.4. Key actors and key enablers for PEGS development

In addition to identifying key policy areas to which PEGS should contribute, it is important to identify key actors who can be expected to develop PEGS, and key enablers needed for PEGS development to really take off, in order to e able to direct policy making in the area of PEGS as effectively as possible. These key actors and key enables will be briefly described below.

#### *3.4.1. Key actors*

It is important that policy for PEGS targets not only the most important and most promising areas, but also leverages the activities of actors with the most incentives to (further) develop PEGS. For a number of actors, there are sufficiently positive cost-benefit ratios to expect PEGS development, and policy for PEGS could make the difference and could lead to concrete results on the short term with cascading effects for further PEGS development.

Based on literature review and the discussion in the internal workshop of April 26 2007, the following actors were identified as scoring high in terms of incentives to provide PEGS:

(a) big cities with a mobile, international population
(b) small countries with an open international economy
(c) Euregions with lots cross-border activity
(d) Public sector organizations in MS aimed at certain professional groups, such as knowledge workers, academics, employees of international organizations
(e) The European Commission itself.

#### *3.4.2. Key enablers*

Implementing key enablers is a pre-requisite to achieving the goals of the Ministerial Declaration of 2005 on eGovernment milestones in general, and on PEGS in particular. In the i2020 eGovernment Action Plan of 2006, two key enablers are put forward: interoperability, and electronic identity management:

- *European Interoperability*.
  Interoperability is a generic key enabler. Interoperable essential infrastructure services (e.g. for secure communications between administrations or cross-border access to registers), common specifications, interoperability guidelines and re-usable software are all requirements for high impact eGovernment in general, including PEGS. Interoperability is needed to enable that services and procedures can be handled electronically across various administrative levels and national borders in a secure and interoperable manner. This requires sufficient communication infrastructure and bandwidth but also interoperability between different public administrations, both vertically (local-regional-national-European) and horizontally (between MS). This interoperability should be technical, semantic and organizational. Whereby the technical interoperability may be achieved through adhering to global best practices; the semantic and organizational interoperability should leverage the achievements of vertical domain expert groups. Implementation of the European Interoperability Framework by MS is thus an important step and an indication of the stated objective to cooperate and develop linked up services with other EU MS. An updated European Interoperability Framework has been presented, which will be used to help MS to develop interoperable eGovernment services based on standards, open specifications and open interfaces.[20]

- *European Interoperable electronic identity management.*
  This is needed for providing secure borderless authentication which is crucial for further development in eGovernment services especially with a cross-border dimension, as a basis and to safeguard for access to various public services. Electronic identification for public services is intended to ease access and offer personalised and smarter services. Many EU countries are already implementing eIDM, meeting national service needs, cultural traditions and personal data protection preferences. The aim is to respect the different national approaches and solutions without creating a barrier to using public services across borders. eIDM is important to ensure that European citizens and businesses will be able to benefit from secure and convenient electronic means, by identifying themselves to public services in their own or in any other Member State.[21] The Commission will consider if regulatory measures are needed for the development of electronic identification and authentication for public services.

### 3.5. Forms of PEGS development

There are by and large three different ways in which eGovernment services can contribute to the pan-European dimension of public service delivery.

[20] E.g. see see Communication on Interoperability COM(2006) 45

[21] E-signatures provide a technology that can be used in the eIDM process. The Commission will in its follow up to the e-Signatures Directive actively foster mutual recognition and interoperability of electronic signatures to overcome barriers to the Single Market. In addition, electronic documents authentication will be essential for many services, e.g. public procurement contracts, remote medical prescriptions or educational certificates. Between 2006 and 2010 the Commission will set up, with the Member States, a reference framework for authenticated electronic documents across the EU and will develop and implement a work programme for closer cooperation on management and authentication of and easier cross-border access to electronic records and archives in public administrations. See i2020 Action Plan p. 9.

### *3.5.1. Supranational/European PEGS.*

The first, most obvious form is European level service provision by a European level actor. The main initiating actor is supranational (often European) actor, in cooperation with (actors within) Member States. Generally it is a top-down initiative, though the European level actor generally acts as an intermediary and in terms of authority is not placed above constituent organisations (public administration organisations in MS), so in that sense it is not top-down. For example, the European Commission itself and other European level public actors such as the European Science Foundation offer online services to target groups; these services are informational (mostly), interactional and transactional (scarcely). In addition, a European level actor can create a European portal through which the public administrations of Member States are easier to find and navigate, to make the more accessible for residents from other Member States. A European portal can consists merely of an information function, but it can also be interactional and even transactional. Examples are SOLVIT[22] and EURES.[23]

### *3.5.2. Intranational, national and multinational PEGS.*

The second form of PEGS consists of services with a cross-border dimension which develop bottom-up from public administration organisations within Member states (local, regional, national) deciding to provide services to their citizens living in other Member states and to citizens from other Member States. This can be done in active cooperation with public administration organisations from other Member States (multinational). The main actors are Member States (or local/regional public administrations within MS). These services generally grow from clear need-based services in a certain geographical region and/or certain service area, accumulating more (parts of) services and more Member States during development. Not all MS will join immediately, and the MS that do will not join for all areas immediately. A gradual pathway towards PEGS provides the possibility for a flexible growth strategy of a European public space, with an optimal cost-benefit ratio (which will change over time as more citizens will become mobile and egov service provision will get easier and cheaper due to the better quality and interoperability

[22] SOLVIT is an on-line problem solving network in which EU Member States work together to solve without legal proceedings problems caused by the misapplication of Internal Market law by public authorities. There is a SOLVIT centre in every European Union Member State (as well as in Norway, Iceland and Liechtenstein). SOLVIT Centres can help with handling complaints from both citizens and businesses. They are part of the national administration and are committed to providing real solutions to problems within ten weeks. Using SOLVIT is free of charge. SOLVIT has been working since July 2002. The European Commission coordinates the network, which is operated by the Member States, the European Commission provides the database facilities and, when needed, helps to speed up the resolution of problems. http://ec.europa.eu/solvit/

[23] EURES is an advanced digital Job Mobility Portal with a human network behind it of more than 700 EURES advisers that are in daily contact with jobseeker and employers across Europe. The purpose of EURES is to provide information, advice and recruitment/placement (job-matching) services for the benefit of workers and employers as well as any citizen wishing to benefit from the principle of the free movement of persons. In European cross-border regions, EURES has an important role to play in providing information about and helping to solve all sorts of problems related to cross-border commuting that workers and employers may experience. Set up in 1993, EURES is a co-operation network between the European Commission and the Public Employment Services of the EEA Member States. http://ec.europa.eu/eures/

of national level egov services). Examples are the Belgian Social Security System[24] and RISER.[25]

### *3.5.3. Convergence through good practice diffusion.*

Good practice diffusion leads to a certain convergence of practices and there by a degree of standardization and interoperability between countries. This contributes to the pan-European dimension of public service provision. The more similar practices are in Member States, the more easily accessible they will often be for citizens from different Member States because it resembles their own administrative system. In addition, being a 'good practice' implies that the service is highly user-centric and has included interoperability in its design. MS will have incentives to implement good practices that work elsewhere in their own country because it will help serve their national goals, and through this they will increase (European) interoperability and homogeneity of public services across Member States, and thereby effectively the pan-European dimension of eGovernment.

### *3.5.4. Optional parallel European administrative space*

In addition to these three options, there is a fourth option worth mentioning, even though it is not likely to occur in the near future. It could be interesting to look at the option of creating a European level public space parallel to the MS national public space. This public space is optional; it can be joined by citizens and MS for certain areas. This makes for a flexible solution in which it is easier to get clear when it is worth it to have an eGovernment service at the PE level and when not. Also it provides a clear actor, thus overcoming the inertia of public systems of MS where so much already has to be done in terms of change and reform, and where PEGS will understandably not be a priority. The actor, the EC, has a clear incentive and the cost benefits will be clearer by having specific self-selecting target groups of mobile citizens and self-selecting parts of provision by MS. This would contribute on an important policy trajectory, the further development of European citizenship (e.g. see COM(2004)695 final, Fourth Report on Citizenship of the Union).[26]

The possibility of an optional parallel European Administrative Space, an extra layer which is optional to join for citizens and MS public administrations to join, which works like a flexible front-office for those citizens that need it, with "back-office" consisting

[24] The Crossroads Bank for Social Security and the National Office for Social Security together have initiated a project to improve collaboration and digital data exchange between more than 2000 social security institutions in Belgium. The network encompasses private companies an PAs. The aim of the project was to combine back office integration and an ePortal solution in an effective way in order to provide improved services to citizens, companies and public institutions. The portal contains numerous integrated services, over 4,000 pages of information and 40 operational transactions. The service is provided in French, Dutch, and German and is offered to nationals, Belgian citizens who work abroad but are still related to the Belgian social security system, and to citizens of other countries who work in Belgium. https://www.socialsecurity.be/

[25] The objective of RISER (Registry Information Service on European Residents) is to establish an internet-based platform offering official address information from population registers in Europe. RISER allows companies across Europe to obtain official address information for Germany, Austria and Ireland. By logging on and registering with the web portal www.riser.eu.com, businesses can verify the addresses of potential and current customers in these countries, as the portal provides access to EU member states' individual civil registry databases. RISER Service is developed in three phases – RISER, RISERac and RISERid; all phases are supported by e-Ten. The first (RISER) phase aim was to determining whether the RISER Service can be realised in legal, organisational and technical terms, and whether there is a European market for RISER Service. In first phase the RISER Service was realised in following EU countries: Austria, Germany and Ireland. The second (RISERac) phase aim is to extend RISER Service to new EU member states: Hungary, Poland and Estonia. In the third phase RISER will be deployed in Europe. The so called RISERid project aims at initially rolling out the RISER Service to four more EU Member states based on the result of the market validation projects RISER and RISERac. The overall objective of RISER is to connect a total of 17 EU Member States to the service.

[26] http://eur-lex.europa.eu/LexUriServ/site/en/com/2004/com2004_0695en01.pdf

connecting to MS public administrations that agree to be part of it – allowing a growth strategy. This layer of service provision is not necessarily for all (only certain groups really need it), but open to all; as groups of citizens needing it expand the coverage will increase).

## 4. Indicators for PEGS development

### 4.1. Some considerations regarding indicators

In order for policymakers to design policy for stimulating the development of PEGS, information is needed about the state of play in the area of PEGS. In order to get some basic information on the pan-European dimension of eGovernment in Europe, indicators are needed that capture the relevant features of PEGS development as described in the sections above.

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

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

To capture the different elements which together give information about the pan-European dimension of eGovernment service provision, a composite indicator is needed. A composite indicator is a mathematical combination (or aggregation, as it is termed) of a set of indicators. Composite indicators are based on sub-indicators that have no common meaningful unit of measurement and there is no obvious way of weighting these sub-indicators. A composite indicator is formed when individual indicators are compiled into a single index on the basis of an underlying model. The composite indicator should ideally measure multi-dimensional concepts which cannot be captured by a single indicator alone, *e.g.*, competitiveness, industrialisation, sustainability, single market integration, knowledge-based society, etc. (OECD Handbook 2005).

The main pros and cons of using composite indicators are the following (Saisana and Tarantola, 2002):

| Pros | Cons |
|---|---|
| • Can summarise complex or multi-dimensional issues in view of supporting decision-makers.<br>• Are easier to interpret than trying to find a trend in many separate indicators.<br>• Facilitate the task of ranking countries on complex issues in a benchmarking exercise.<br>• Can assess progress of countries over time on complex issues.<br>• Reduce the size of a set of indicators or include more information within the existing size limit.<br>• Place issues of country performance and | • May send misleading policy messages if they are poorly constructed or misinterpreted.<br>• May invite simplistic policy conclusions.<br>• May be misused, e.g., to support a desired policy, if the construction process is not transparent and lacks sound statistical or conceptual principles.<br>• The selection of indicators and weights could be the target of political challenge.<br>• May disguise serious failings in some dimensions and increase the difficulty of identifying proper remedial action. |

| | |
|---|---|
| progress at the centre of the policy arena.<br>• Facilitate communication with general public (i.e. citizens, media, etc.) and promote accountability | • . May lead to inappropriate policies if dimensions of performance that are difficult to measure are ignored. |

### 4.2. Current benchmarking of eGovernment

In order to monitor the progress of eGovernment in EU Member States, an annual benchmarking study is done, measuring the sophistication of online availability of public services in Member States. An indicator(s) for pan-European eGovernment should be designed in such a way that it can in principle be included in the existing benchmarking study. To see what this means, in this section the structure and organisation of the existing benchmarking study is briefly discussed.

In 2002 it was decided that the eEurope 2005 Action Plan should be operationalised by developing a limited number of policy indicators which are easy to read and understand and are linked to the policy actions of eEurope 2005, in order to get an idea of the state of play of the progress of Europe in the development of services and applications making use of broadband infrastructure. It was explicitly stated that the number of indicators should be limited, to make it easier to draw attention to results in this area.[27] The indicators should be used for benchmarking within the EU and between the EU and the rest of the world. In first instance, the Commission proposed 14 policy indicators and 22 supplementary indicators along with their sources and frequency of collection. One of the policy indicators concerned e-government.[28]

#### *4.2.1. Service areas, service clusters and service providers*

The e-government policy indicator was defined to reflect the number of basic public services fully available on-line, for 20 basic services.[29] For *e*Government benchmarking, two indicators were taken as basis: the percentage of basic public services available online, and the use of online public services by the public.

The annual benchmarking study which is undertaken since a couple of years[30] focuses on the online availability and sophistication of 20 public services (12 for citizens, 8 for businesses).[31] The benchmarking study does not measure actual use of these services[32] or the impact, e.g. on cost- or time-savings.[33]

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[27] COM(2002) 655 final, *eEurope 2005: Benchmarking Indicators*, Brussels, 21.11.2002

[28] The other policy indicators proposed were related to citizens' access to and use of the Internet, enterprises' access to and use of ICTs, Internet access costs, e-learning, e-health, buying and selling on-line, e-business readiness, Internet users' experience and usage regarding ICT-security, broadband penetration.

[29] Supplementary statistical indicators consisted of (1) the percentage of individuals using the Internet for interacting with public authorities broken down by purpose; and (2) the percentage of enterprises using the Internet for interacting with public authorities broken down by purpose. Additional supplementary indicators to be the subject of pilot studies with a view to examination of their feasibility at the mid-term review or earlier if possible were: number of available basic public on-line services with integrated digital back office processes; public procurement processes that are fully carried out online (electronically integrated) in % (by value) of overall public procurement; percentage of public authorities using open source software

[30] This benchmarking study has been executed by CapGemini over the past years. For the latest report, see *Online Availability of Public Services: How Is Europe Progressing?* Web Based Survey on Electronic Public Services Report of the 6th Measurement, June 2006
http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/online_availability_2006.pdf

[31] http://ec.europa.eu/idabc/servlets/Doc?id=18402

[32] There is some research on this. For example the household survey done by Eurostat and the national statistical institutes (NSI) shows continued growth in use of public sites. The proportion of the population obtaining information from public web sites grew from 16.8% in 2002 to 25.2% in 2004, a growth of 50% in 2 years. The household survey found similar increases in the proportions taking part in more sophisticated interactions with public services: a 61% increase in those downloading forms and a 67% increase in those

The list of public services for citizens contains 12 service areas:

1. Income taxes: declaration, notification of assessment
2. Job search services by labour offices
3. Social security contributions (3 out of the following 4: unemployment benefits, child allowances, Medical costs (reimbursement or direct settlement), student grants.
4. Personal documents (passport and driver's licence)
5. Car registration (new, used and imported cars)
6. Application for building permission
7. Declaration to the police (e.g. in case of theft)
8. Public libraries (availability of catalogues, search tools)
9. Certificates (birth, marriage): request and delivery
10. Enrolment in higher education / university
11. Announcement of moving (change of address)
12. Health related services (e.g. interactive advice on the availability of services in different hospitals; appointments for hospitals.)

The list for businesses consists of 8 service areas:

1. Social Contribution for Employees
2. Corporate Tax
3. VAT
4. Registration of a New Company
5. Submission of Data to the Statistical Office
6. Custom Declaration
7. Environment-related Permits
8. Public Procurement

The different categories of service providers taken into account are:

- National governmental units
- Regional governmental units
- Cities and municipalities
- Specific multiple service providers:
  - Public libraries
  - Hospitals
  - Universities/Institutes of higher education
  - Police offices.
  - Public insurance companies

submitting filled forms electronically (time series data only available for EU15). A Eurostat/NSI enterprise survey showed even more intensive use of public sites by enterprises with now 15% of EU25 companies carrying out full electronic case handling with public authorities. Empirical findings on user take-up (drivers, barriers, recommendations) for eGovernment services can be found at the eUSER project http://www.euser-eu.org/

[33] There has been some research on this. For example, the 2004 eGovernment-impact survey showed that online income tax declarations already save 7 million hours. If generally available and widely used in all Member States, the savings could rise to more than 100 million hours for citizens each year. Online VAT declarations save about €10 per declaration. If maximum take-up were achieved, this could translate into savings of some € 0.5 billion for businesses across the EU each year. On average, citizens and businesses save over one hour per service transaction. 77% of users said that they would recommend the on-line services already used by them to others.

To get a better view on the evolution of services, we have combined different services into four clusters:

- *Income-generating cluster*: services where finance flows from citizens and businesses to the government (mainly taxes and social contribution)
- *Registration cluster*: services related to recording object- or personrelated data as a result of administrative obligations
- *Returns cluster*: public services given to citizens and businesses in return for taxes and contributions
- *Permits and licenses cluster*: documents provided by governmental bodies giving permission to build a house, to run a business etc.

### *4.2.2. Indicator for sophistication of online availability*

In order to measure the *e*Europe 2002 indicator 'online availability of public service', a four-stage framework has been defined measuring the 'sophistication' of the provision of eGovernment services:

- *Stage 1- Information:* The information necessary to start the procedure to obtain this public service is available on-line.

- *Stage 2- One-way Interaction:* The publicly accessible website offers the possibility to obtain in a non-electronic way (by downloading forms) the paper form to start the procedure to obtain this service. An electronic form to order a non-electronic form is also considered as stage 2.

- *Stage 3- Two-way Interaction:* The publicly accessible website offers the possibility of an electronic intake with an official electronic form to start the procedure to obtain this service. This implies that there must be a form of authentication of the person (physical or juridical) requesting the services in order to reach stage 3.

- *Stage 4- Full electronic case handling:* The publicly accessible website offers the possibility to completely treat the public service via the website, including decision and delivery. No other formal procedure is necessary for the applicant via "paperwork".

Besides these 4 stages a *stage 0* was introduced to capture two possible research outcomes:

- Total absence of any publicly accessible website managed by the service provider
- The public service provider has a publicly accessible website, but this one does not offer any relevant information, interaction, two-way interaction or transaction possibilities at all concerning the analysed service.

In the eEurope 2002 Action Plan the policy indicator for e-government was the "percentage of basic public service available online". In the eEurope 2005 Action Plan this indicator was reviewed and simplified. The new definition is the "number of basic public services fully available on-line". In order to measure the new eEurope 2005 indicator, an additional scoring framework was added; stage 1 now is "No full availability online, Stage

2 is "Full availability online."[34] Until 2002 this study was conducted on a bi-annual basis; in the eEurope 2005 Action Plan the measurement is organized on an annual basis.[35]

In the latest version of the benchmarking methodology another stage was proposed: 'Targetisation'. This stage describes smart, fully electronic procedures where no physical action is needed from the applicant, which is expressed by measuring the degree of pro-active and automatic service delivery.[36] The new methodology also introduces the concept of service provision through intermediaries (p. 7). The application of these concepts still need to be tested in practice and thus will not formally be part of this study.

### *4.2.3. Sampling and weighting*

In the benchmarking study a network of government experts from the Directorate General for Information Society and Media in each of the 28 countries is consulted. For the 6th measurement, the responsible contact persons for each Member State have been invited to use a TeamRoom to interact with the eGovernment Research Team. Each Member State was allocated with a personalised web page were all information regarding the survey for their countries were provided.

As a fully exhaustive survey of the complete lists of all the multiple service providers was not feasible due to logistics, In the benchmarking study a statistical methodology was elaborated to draw a representative sample in cases where the number of units was too large.
This methodology combines different statistical methods, depending on the size and character of the service providers: stratification, systematic sampling with unequal probability, and random sampling

A combination of stratification and systematic sampling was used for those service providers organised on a specific regional base:

- Municipalities
- Regional authorities
- Local police offices
- Libraries

For the existing indicator measuring 'online availability', the different stages are translated into percentages. The percentages correspond with the level of sophistication, but which percentage is attributed to which level depends also on the extent to which it is possible to carry out a service electronically, thus on the maximum achievable level. The reason for this is that not all four stages mentioned above may be relevant for all types of public services. For each service the highest relevant stage is therefore indicated. The basic premise in the method for calculating the 'online percentage' of a service is whether or not a service reaches a given stage. A service that is offered as a full transaction can, for example, achieve a maximum of four points (each stage corresponds to 1 point). The score can therefore be between 0 and 4 points (0 indicating that none of the stages is achieved). The calculation consists of comparing the sum of the scores on all services and stages with the sum of the maximum possible scores.

[34] Stage 1 contains the stages 0 to 3 of the 'sophistication' framework, stage 2 contains the stage 4 of the 'sophistication' framework. In order to ensure continuity in the interpretation of results, the results are in addition still also given in terms of the original 5 stages.
[35] An updated methodology report has been presented and discussed with the EC and MS in spring 2007: Cap Gemini (2007); Web-based benchmark on electronic public services; Seventh measurement
[36] Cap Gemini (2007); Web-based benchmark on electronic public services; Seventh measurement (p. 6)

In this way, the degree to which the agreed set of public services is available can be calculated as a percentage. In this weighting, account is *not* be taken of the relative importance of the various services in terms of the number of customers using the service. In case the score is related to multiple service providers, the calculated percentage is an aggregate of the average scores of the websites and will be positioned on the scale between the start limits of the ranges.[37]

## 4.3. Indicators for benchmarking PEGS

### *4.3.1. General considerations*

The PEGS indicator(s) should fit within the current – evolving - method of benchmarking, it should be possible to collect the information alongside the information that is now collected through the website assessment method. A sound theoretical framework is the starting point in constructing (composite) indicators.[38] The framework should clearly define the phenomenon to be measured and its sub-components and select individual indicators that reflect the dimensions of the overall composite. In this report, the different policy considerations, forms, actors, areas regarding PEGS have been discussed. A broad, heterogeneous, dynamic landscape is sketched with different ways to achieve a closer-to-optimal pan-European dimension to public service provision.

In order to (further) develop policy in the area of PEGS development, more information and understanding of mechanisms is needed. The discussion in the workshop on April 26 2007 clearly showed that in this phase, the first priority is to gain a more in-depth understanding of the mechanisms of PEGS development, and for this case-study research is most appropriate. In addition it is clear that some measurement of the state of play in the area of PEGS would be useful, to gain an information basis for policy and to increase awareness of the importance of PEGS development. It is best to start with a few relatively easy to collect items, to get a rough map of what is happening in the area of PEGS in Europe and its Member States. In combination with more in-depth insights gathered in case-studies, in a next phase further data collection can be targeted at more specific areas that show up as most interesting.

### *4.3.2. PEGS indicator at MS level for key enablers*

The area of PEGS is still very much in development and takes different forms, dynamics and pathways. However diverse the landscape of PEGS development may be, a sure thing is that the presence of key enablers is a condition sine qua non. The extent to which Member States can be expected to develop the pan-European dimension to their eGovernment service can thus to some extent be predicted by the necessary (though not sufficient) condition of the presence of key enablers for PEGS. In 3.4.2 the two main key enablers identified in the i2020 Action Plan have been described: European interoperability (as expressed by the application of the European Interoperability Framework EIF[39]) and electronic identity management (of persons, organizations, signatures, documents, by some sort of eIDM system).

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[37]. See for some more detail: http://ec.europa.eu/idabc/servlets/Doc?id=18401

[38] Nardo, M., M. Saisana, A. Saltelli, S. Tarantola (EC/JRC), A. Hoffman and E. Giovannini (OECD), *Handbook on Constructing composite indicators: methodology and user guide*, OECD Statistics Working Paper, STD/DOC(2005)3.

[39] It must also be acknowledged that there may be cross-border or even a PE interoperability at the sector or services level, whereas the EIF would indicative of overall European interoperability.

When gathering information about the status of PEGS development in Member States, a first, essential aspect to measure would thus be he presences of these two key enablers for PEGS; it will give information about the 'readiness' of a MS for PEGS development, which has predictive value for actual PEGS development.

In addition, there is a third factor reflecting readiness and the probability of PEGS development: political will to do so. The Ministers of all Member States have signed the Ministerial Declaration of 2005 in which they recognize the importance of PEGS and commit themselves in a general sense to stimulate their development. It is informative to find out to what extent these intentions have become embedded into national eGovernment Strategies of Member States. Are PEGS and their importance mentioned in these national strategies, and in what way, in a general sense or more specific, describing concrete actions in this area?

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

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

(1) MS policy awareness of and political will to develop PEGS (PAW score) as expressed by their mentioning of it in MS eGovernment strategies;
(2) MS awareness of and application of European interoperability as expressed by their mentioning and use of the European Interoperability Framework in MS eGovernment policy strategy and implementation in national interoperability frameworks or reference architectures (EIF score)
(3) MS awareness of and application of (interoperable, secure) electronic identity management (eIDM), as expressed by their mentioning of and use of (some form of) eIDM in MS eGovernment policy strategy and implementation, and possibly its cross-referencing with other national eIDM systems (eIDM score)

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

For each of the three (PAW, EIF and eIDM) the following scores can be taken:
0 = not mentioned at all
1 = mentioned in a general sense
2 = mentioned in a concrete sense (e.g. plans for implementation)
3 = concretely implemented in a significant way

The first part of the PE-score for a MS is thus a score on Readiness, which looks like:
PE -RE = (PAW +EIF + eIDM)/3

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

PE-RE at MS level = $\lambda$(PAW) + $\rho$(EIF) + $\sigma$(eIDM)
with $\lambda+\rho+\sigma=1$

*4.3.3. PEGS indicator at MS level for accessibility*

Besides finding out to what extent MS have the conditions in place for PEGS development, it would be informative to get some idea about the current state of the pan-European dimension of MS eGovernment services. As was explained in 3.3, a central feature of the pan-European dimension of eGovernment is the accessibility of public eGovernment services of Member States by citizens of other Member States, thus enabling citizen mobility. A first, crucial requirement for this is that a citizen can understand the information and other options provided by a service, and for this provision in a language which citizens from other Member States understand is essential.

The information about whether an eGovernment service is provided in other languages than the Member State language is relatively easy to collect in the present benchmarking. Thus it is proposed to take availability in another language as a proxy for the pan-European dimension of a service. Obviously there are more elements that are important for having actual, real cross-border accessibility, but we are looking for an indicator at the level of actual services which should easy to collect within the framework of the current benchmarking of eGovernment. Thus it is proposed to take the number of available languages of provision of a service as an indicator for cross-border accessibility of a service and as an indicator for a service to having a pan-European dimension.

The PE-score of the interface of a digitally provided service, its website (determining accessibility of the service) equals the number of non-MS languages (L) in which the service is provided:
0 = only the MS language no other
1 = the MS language and 1-3 other languages (often English, French and/or German)
2 = more than 3 other languages
3 = all languages from all MS

Often the information and options for citizens offered by a service in another language is only part of what is offered in the home language of the Member State. Still, if even part of the service is offered in another language, it should count. Thus it is proposed to distinguish three 'weights' for the degree of provision of the service (AP) in one or more other languages:

1 = all information and options are available in other language(s)
¾ = much (but not all) information and options are available in other languages
½ = only limited information is provided in other languages, but sufficient to know what the service is about and whom to contact for more information

If the service provided in other languages than the MS language has a higher degree of sophistication of online availability (the current eGovernment indicator), it should weigh more in terms of contributing to a pan-European dimension of eGovernment. Thus the degree of online availability should be taken into account, by including the score of the service on this in the PEGS composite indicator. The simplified indicator about online availability (OA) currently in use with two stages may be most fit for this:

1 = not fully online
2 = fully online (including interaction and transaction possibility)

The PE score in terms of accessibility for an individual service would then look like this:
Languages (L) x degree of Actual Provision of the service in other language(s) (AP) x degree of Online Availability

PE-AC score at service level = L x AP x OA

The current method of taking a careful sample of services for evaluation and generalizing from this can be used for generalizing this score to the MS level. The current method for dealing with local an regional providers and multiple providers can be used also for including these providers into the MS PE-AC score.

PE-AC score at MS level = MS(LxAPxOA)

#### *4.3.4. Including a weight for impact ( service level)*

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

As was put forward in 3.3, PEGS are first and foremost expected to contribute to three policy areas: (1) free movement of citizens, (2) implementation of the Service Directive and (3) reduction of administrative burden. The reason for this is twofold: (a) these are closely related to the effects of PEGS (enabling cross-border activity while reducing administrative burden associated with it) and (b) these are the policy areas with pressing incentives in place in terms of commitments of Member States and favourable cost-benefit ratios for Member States. In order to give some weight to the PEGS score reflecting impact, it would be desirable to measure what has most impact in terms of these three policy areas. However, that is not easy to do in a simple way. It is proposed to take a proxy by looking at what current mobile citizens find most important, assuming that this reflects the degree to which a certain services would help these citizens to reduce the costs and effort of their mobility, which would be an indication of impact on all three policy areas mentioned above.

A CapGemini study of 2004 has looked particularly at PEGS from a citizen perspective, to find out which kind of services citizens with cross-border activity patterns would want to have provided cross-border, and of these which ones they would value most. A list of desirable PEGS was formed, and the PEGS identified were ranked taking into account the following 5 criteria:[40]

1. *Demand*. Gives an indication of the need for the implementation of a PEGS of the target groups 'mobile' citizens and companies involved in cross-border activities.
2. *Potential user benefits*. Gives an indication of the time and costs saved per target group by the introduction of a PEGS
3. *Efforts needed*. Indicates the efforts for public administrations needed to implement a service at the desired level of service provision.
4. *Feasibility*. Gives insight in the feasibility of the implementation of a PEGS taking into account restricting factors and obstacles that public administrations need to overcome in order to be able to implement a certain PEGS.

[40] The study aimed at identifying the needs for PEGS of two specific target groups, the 'mobile' citizens on the one hand and the companies involved in cross-border activities on the other hand. These needs had been established by means of a bottom-up approach, articulated around qualitative and quantitative research activities. 'Mobile' citizens and (representatives of) businesses. Focus groups, interview and questionnaires were used to get more insight in the needs of mobile citizens.

5. *Political priorities*. Presents the existence of a legal basis for the implementation of a PEGS thereby giving an indication whether Member States can politically prioritise the implementation of a PEGS on a European level

The services are prioritised on a 0% to 100% scale taking into account the criteria: demand and user benefits.

In Table 1 the results of this study of the prioritisation are summarised. The first half of the table shows the required and beneficial PEGS for citizens, the second half of the table shows the PEGS for businesses.

| **Services for citizens** | **Score** | **Level of service provision** | **Level of organisation** | **Legal basis** |
|---|---|---|---|---|
| Pensions | 62% | Semi-transactional | National | Yes |
| Tax declarations & refunding | 59% | Full-transactional | National | Yes |
| Residence Permits | 58% | Semi-transactional | National | Yes |
| Public health insurances | 56% | Semi-transactional | National | Yes |
| Passports | 56% | Semi-transactional | National | No |
| Work Permits | 52% | Semi-transactional | National | Yes |
| Driving License | 52% | Full-transactional | European | Yes |
| Car Registration | 46% | Semi-transactional | National | No |
| Job Search | 41% | Full-transactional | European | Yes |
| Recognition of qualification | 38% | Informational | European | Yes |
| Birth certificates | 36% | Full-transactional | Bilateral | No |
| Unemployment benefits | 33% | Semi-transactional | National | Yes |
| Enrolment at college/university | 31% | Informational | European | Yes |
| Study grants | 31% | Informational | European | Yes |
| Marriage Certificates | 25% | Full-transactional | Bilateral | No |
| Child allowances | 21% | Full-transactional | National | Yes |

These percentages can be seen as indicating (potential) impact, and can be used as a basis for giving weights to the services provided with a PE dimension, in order to enable comparison.

In addition, numbers about actual use by citizens of a service with a PE dimension could be used as a weight factor for establishing an impact factor (if such numbers are available). Also, numbers on actual mobility of target groups of the services with a PE dimension can be used for reflecting (potential) impact of the service.

It is proposed to add to the composite indicator at MS level a weight for impact (I) by multiplying with the percentage of perceived usefulness that is associated with a services from a certain service cluster. In order to reduce the importance of this weight for impact, the range of the percentages (21-62%) may be narrowed, converting the percentages into important (= 1) and less important (= ¾)

PE-AC score at service level = [α (L x AP x OA) + β (R)] x I

PE-AC score at MS level =

The PE-Accessibility score (PE-AC) in combination with the PE-readiness score (PE-RE) described in 4.3.2 together form the PE score in general for a MS. This can be used to get an idea of how different Member States are doing in terms of adding a pan-European dimension to their eGovernment provision, compared to other MS and compared over time.

The composite PE indicator at MS level will then resemble the following:

PE-RE at MS level = λ(PAW) + ρ(EIF) + σ(eIDM)
PE-AC at MS level = MS [α (L x AP x OA) + β (R)] x I

PE overall score at MS level =
PE-RE + PE-AC =
[λ(PAW) + ρ(EIF) + σ(eIDM)] + {MS [α (L x AP x OA) + β (R)] x I}

This score can be normalized in different ways, see section 4.4for more on this.

### *4.3.5. PEGS indicator at the European level*

An important form of PEGS are the services that are provided by European level actors (see 3.5.1), such as the European Commission but also many other organisations (e.g. European Science Foundation, European portals such as SOLVIT and EURES, European Ombudsman). Again language is a relevant element. These European organisations may provide their services in all MS languages, but may also provide them in only English, or in English/French/German. EGovernment services provided by European organisations are by definition 'pan-European', but the extent to which this is a real contribution to the pan-European dimension depends also on the nature of the service, for example whether a service only presents information or also interaction and transaction possibilities.

It is proposed to measure how many pan-European eGovernment services provided by European level actors there are, and for each to determine it score in terms of language provision and its score in terms of sophistication of online availability. For the latter the existing indicator for eGovernment can be used and applied to European level service providers.

nPE = Number of PEGS provided by European level actors

Language (L):
2 = provision in all MS languages
1= provision in only a few languages (1-4)

Online availability (OA):
2= fully available online
1 = not fully available online

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

As in the case of the MS PEGS indicator, it is possible to include the impact score (I)
EU PEGS score = I x (nPE x L x OA)

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

### *4.3.6. PEGS indicator for convergence via good practice diffusion*

The European Commission is actively involved in collecting good practices of eGovernment services and to make these available and known throughout Europe in order to stimulate learning and transfer from good practices to other contexts, other local/regional/national actors in other Member States.

In the framework for PEGS sketched in the sections above, good practice diffusion is seen as a form of convergence of practices, which effectively increases the pan-European dimension of eGovernment (see 3.5.3). A possible PEGS indicator in this vein could be measuring the actual diffusion of practices. If this increases over time, it can be seen as an increase in the pan-European dimension of eGovernment. As with the MS level and EU level PEGS score, it is possible to add an impact score I to reflect the importance of the types of services with a certain degree of diffusion.

### 4.4. Some considerations regarding scaling and ranking

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

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

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

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

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

result in an unbalanced structure of the composite index, unless this is corrected in some way.

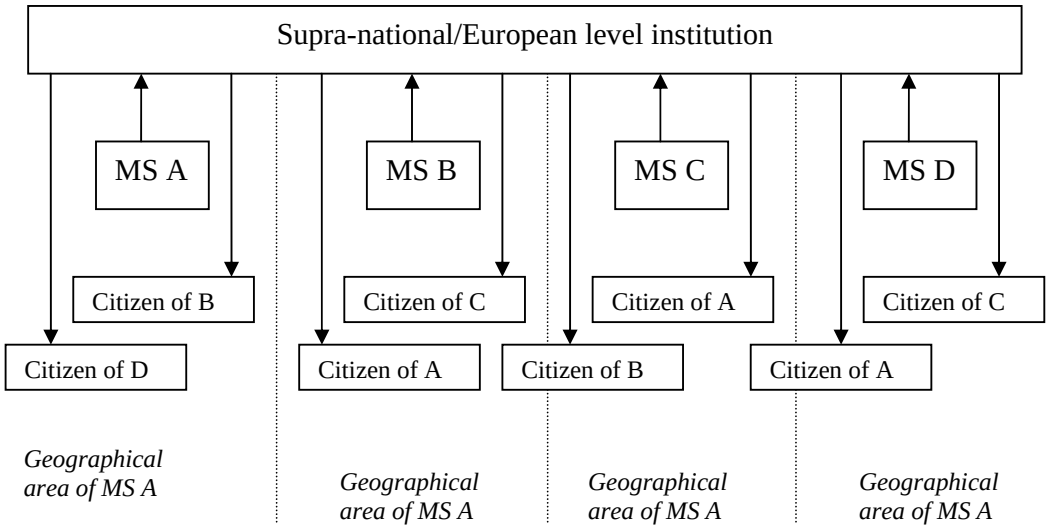
Imagine a service A is really important to people and has a potential user group of 10.000 mobile citizens, and another service B which is considered half as important has a potential user group of 20.000. Service B which is considered half as important should have half the impact of service A; but since its (potential) use is higher than the use of A, the impact score of B should be increased to be more than half of A. How much more, is something that needs to be determined in a next phase, when it has become clear which information is actually available and when it is decided what to include and what not.

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

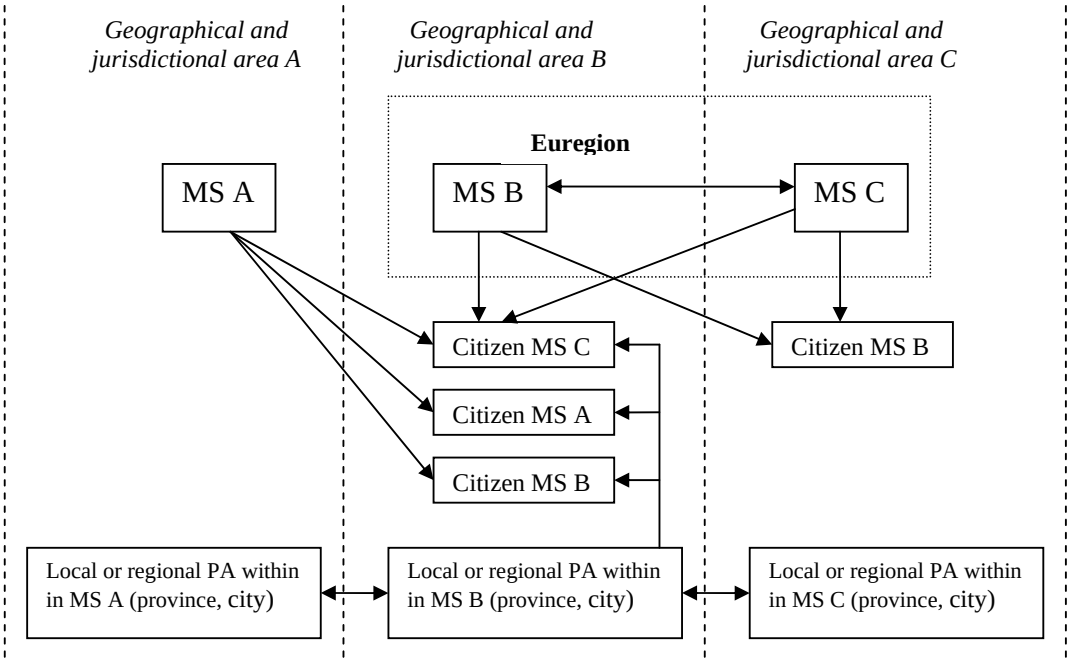
Aggregation methods vary. While the linear aggregation method is useful when all sub-indicators have the same measurement unit, geometric aggregations are better suited if non-comparable sub-indicators are expressed in different ratio-scales.

The indicators chosen are only proxies of what we are after. This means that they are expected to indeed adequately indicate what we are after (level of pan-Europeaness of eGovernment) but that they are obviously not precise in this. The indicators are chosen partly on practical grounds: they build on existing policy trajectories, and they are reasonably easy to collect at a large scale (27 MS). The outcome of the data-collection will be simplified by being translated into categories. The quality of calculations based on empirical data is as good as the precision and quality of the data itself. To do highly sophisticated calculations in order to determine a composite indicator while the data itself is necessarily rough and precision already has got lost to some extent by categorization, is thus not useful. What matters is to achieve sufficient comparability between services and between Member States, in order to make general statements about the state of play in the area of pan-European eGovernment. The scores on each indicator should be normalized in the most appropriate way for that particular indicator.

## Appendix: Forms of pan-Europeanization of eGovernment

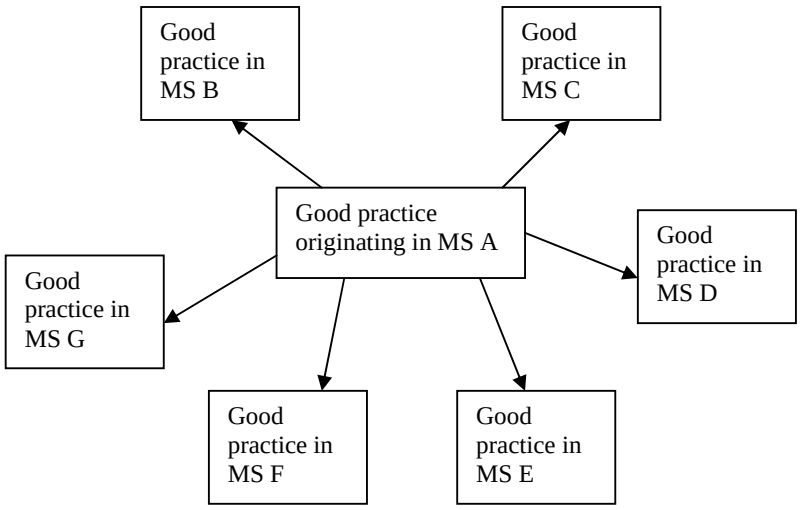



**Supranational/European PEGS**: centralized, provided by an above-national (most often European level) institution; MS interact and cooperate with this institution rather than directly with each other

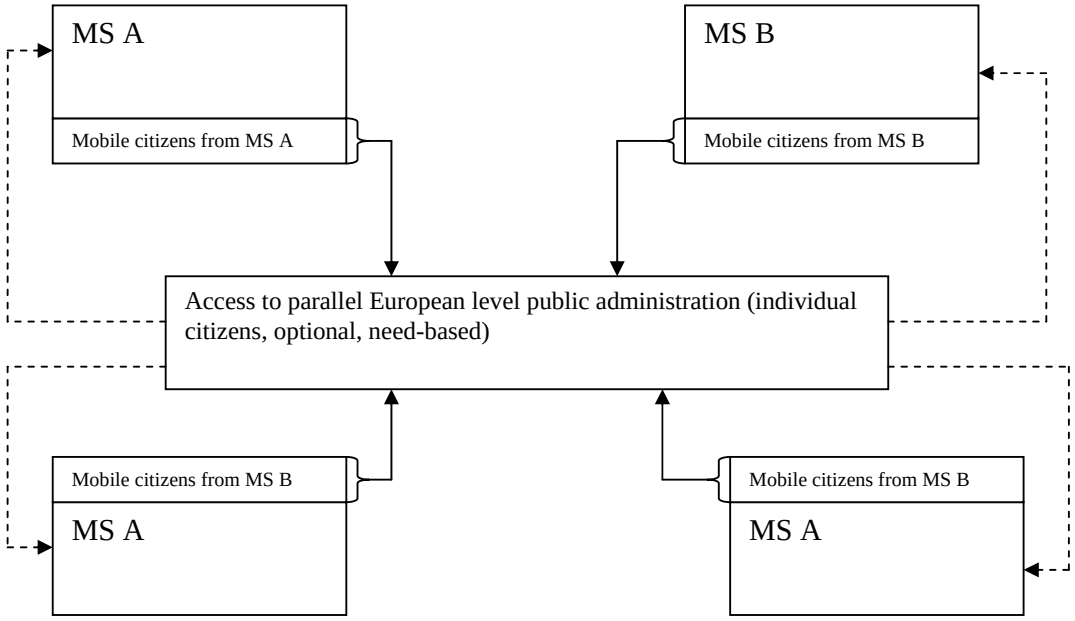



**(Intra-)national PEGS**: unilateral, provided by MS A to citizens of A living elsewhere and to citizens of other MS

**Multinational PEGS**: multilateral, provided in cooperation by MS B and MS C to citizens of B living in C and citizens of C living in B




**Diffusion of Good Practices** leads to a certain degree of homogenization of eGovernment services representing a form of 'administrative convergence', and increases interoperability and cross-border accessibility, thus adding to the PE dimension of eGovernment




Mobile citizens join a parallel European level public administration which in turn coordinates public service provision for mobile citizens in the MS where they are residing