eGovernment Economics Project (eGEP)

Compendium to the Measurement Framework

1 March 2006

Table of contents

Measurement Framework Compendium Presentation

The present compendium tries and synthesises all the supporting work carried out from January till November 2005 in the elaboration of eGEP measurement framework, in terms of data gathering, literature review, analysis and discussion. It contains all the details that for reason of space are left out in the Measurement Framework final report, but which are cited and referenced in such report.

Section 1 reflects the awareness of eGEP work with respect to the importance of countries peculiarities. The logic of measurement rests on the simple fact that what you measure depends on which strategic objectives you pursue. Therefore it is evident that national peculiarities shape the measurement targets for which indicators must be developed and limit the applicability of a general rigid measurement framework suitable for all 25 Member States. The analysis of both EU documents and of the strategic objectives declared in the national eGovernment strategies of Member States (presented in paragraph 1.3 and in Annex A) underlines that there is both convergence and divergence in the objectives and accordingly suggests that there are some opportunities for common EU25 indicators, while each Member State will retain or elaborate other indicators suitable to its strategic priorities. This same conclusion emerges also from the general state of play overview (par. 2.4) and form the comparative analysis of measurement methodologies currently running in a few Member States (see par. 2.5 through 2.7). Naturally, as affirmed in the Measurement Framework Report, the "Manchester Ministerial Declaration" has at least obtained commitment from all Member States for four general objective as signposts for eGovernment 2010.

Section 2 presents an extensive but still synthetic, if compared to the work carried out in support of the Measurement Framework, overview of the state of play. This overview includes first the discussion of the challenges of measuring outputs and outcomes of the Public Sector in general, then a specific discussion of the challenges for eGovernment measurement. It then proceeds with the mentioned general overview of studies and reports and with the comparative analysis of running methodologies and concludes with the lessons learnt from this work.

Section 3 discusses in some details the issue of the sources of data needed for the measurement indicators and devotes a particular attention the topic of measuring users' satisfaction and service quality. Here all the detail supporting the proposal and assessment of indicators contained in the Measurement Framework report are presented.

Finally **Section 4** provides the theoretical underpinning of eGEP Measurement Framework Implementation Methodology.

1. Country Peculiarities and the Logic of Measurement

1.1. Context Matters

A particularly challenging aspect of eGEP MF is the attempt of providing a flexible enough instrument with the potential to be useful and feasible across administrations in Europe. This consideration leads us to briefly outline the importance of context and differences.

In their speech delivered as scientific rapporteurs at the closing plenary of Rotterdam 3QC conference eminent scholars of public administration such as Bouckaert, Loeffler, and Pollitt, among the various lessons and conclusions, stressed also that the context and differences in terms of cultural and administrative traditions matter and that naïve imitation of experiences without considering the peculiarity of national context are bound to fail[1].

---

[1] Bouckaert, G., Loeffler, E. and Pollitt, C., "Taking Stock: The Quality Journey From Lisbon To Rotterdam And Beyond" Speech and Presentation Delivered as Scientific Rapporteurs at the Rotterdam 3QC Conference, September, 2004. The PowerPoint supporting presentation is available at http://www.3qconference.org/download/pagina/3QC_Slides_Scientific_Rapporteurs.ppt (accessed

UE Member States present a very rich diversity of structural and cultural elements that shape their administrative systems traditions. A synthetic and selective list of key dimensions of comparison and differences is presented in Exhibit 1 reported in next page[2].

First of all, in Europe we can find unitary states and federal states and various versions of unitary decentralised states. The level of horizontal coordination within government can range from high to very low in cases of fragmented executives characterised by a great deal of competition and negotiation among ministries and agencies. European welfare states vary quite considerably in the extent of labour market regulation and of benefits guaranteed. Finally, cultural administrative tradition, with an analytical simplification, can be positioned at different points of the continuum between the two ideal-type of so called **Public Interest** and **Rechtsstaat** traditions[3].

Ceteris paribus, unitary states with high level of horizontal coordination and a majoritarian system of executive formation should be in a better position to introduce uniform innovation reforms than decentralised states with low level of horizontal coordination and consensually formed governments, where a lot of negotiation and compromise are needed. On the other hand, in the first ideal type there is a risk of an extreme top-down approach creating a lack of ownership at the lower level where innovation reforms must be implemented. On the contrary in consensualistic systems, if agreement is reached on what to do, there are fewer lower level ownership problems. In federal states there is also the opportunity that particular regions become the place of experimentation and innovation. The actual reality of European public administration is certainly more complex and blurred than the two ideal-types outlined above, nonetheless these differences exist and do matter.

The typology of welfare states and particularly the extent of labour market regulation impact clearly on the ability of government to introduce and actually accomplish reform aimed at making the public sector more efficient also through personnel reduction.

The cultural administrative tradition shapes very much the reform strategies and the limit of what is possible to do. In a *Public interest* model such as the UK, for instance, the Thatcher government, as a result of the agentification process, transferred a large number of personnel from central departments to new agencies without the necessity to introduce a single piece of legislation or regulation. This would have been impossible in *Rechtsstaat* models where, given the central role played by legislations, the first important step in the drive of public administration reforms and modernisation has been de-legification and administrative simplification.
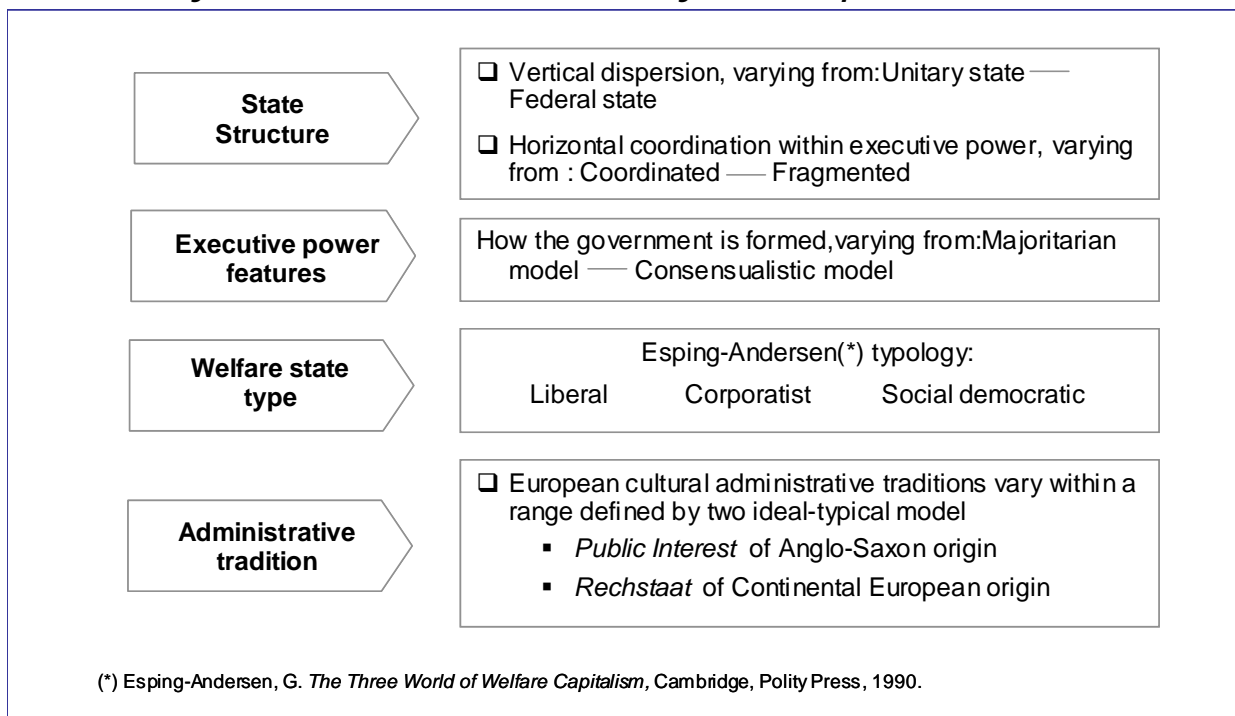

October 2004), and the Word speech at
http://www.3qconference.org/download/pagina/3QC_Speech_Scientific_Rapporteurs.doc (accessed October 24).

[2] The comparative study of administrative systems is by now such a rich field, that is evidently beyond the scope of our work to review it. In this paragraph we have selectively chosen the following two sources: Pollit, C. and G. Bouckaert, *Public Management Reform: A Comparative Analysis*, Oxford, Oxford University Press, 2004 (second edition) where in the first introductory chapters the dimensions reported in Exhibit 1 are analysed; Loughlin, J. "Nation, State and Region in Western Europe." In L. Beckemans, ed., Culture: The Building-Stone of Europe, Brussels: Presses Interuniversitaires, 1994 where four state traditions are identified (Anglo-Saxon, Germanic-organicist, French-Napoleonic, and Scandinavian). For the typology of welfare states we have used the well-known work of Esping-Andersen, which is referenced directly in Exhibit 1.

[3] In **Public Interest** systems, for instance, laws are important but not central, there is no body of administrative laws, civil servants do not have only a legal background but tend to be more generalist, and there is a more individualistic and less risk adverse culture. In **Rechtstaat** systems the *State* is a central actor, it exists a body of administrative laws, laws and regulation area central, the culture is more corporativist and solidaristic.

Such broad administrative and cultural tradition differences are translated also at the level of the various European national eGovernment models that present both areas of convergence and of differences (see *infra*)

Exhibit 1 Key dimensions of administrative system comparison

State Structure	❑ Vertical dispersion, varying from:Unitary state ⎯⎯ Federal state ❑ Horizontal coordination within executive power, varying from : Coordinated ⎯⎯ Fragmented
Executive power features	How the government is formed,varying from:Majoritarian model ⎯⎯ Consensualistic model
Welfare state type	Esping-Andersen(*) typology: Liberal Corporatist Social democratic

Administrative tradition	❑ European cultural administrative traditions vary within a range defined by two ideal-typical model
	  ▪ *Public Interest* of Anglo-Saxon origin
	  ▪ *Rechstaat* of Continental European origin

(*) Esping-Andersen, G. *The Three World of Welfare Capitalism,* Cambridge, Polity Press, 1990.

1.2. Identifying Measurement Targets

While answers may differ in term of specific reasons, in general the question "Why do we want to measure?" easily find a powerful justification[4]. The next crucial question to answer is "what specifically do we want to measure?"

In fact, the first step in building a measurement framework is to define the overall objective(s) of the projects and/or programmes to be measured and its basic components. The first and foremost important condition that a measurement framework must meet is that its indicators are relevant to the mission objectives or end-results pursued.[5] To put it differently "…at their most basic level, mission-aligned measurement framework are intended to clearly define 'enhanced value'."[6] This basic principle, also defined as the Logic Model of Measurement, is illustrated graphically in Exhibit 2 below. The difficulties of using this model reside in selecting the **right goals** and **indicators** and organise them in a consistent way, so that each component finds itself at the appropriate level of abstractions (outputs with outputs, value drivers with value drivers, mission objectives with mission objective, and the same for their respective indicators).

---

[4] For instance, the answer from an international organisation such as the World Bank would be to respond to donors desire to see the results of their financial efforts, whereas EU Member States need to measures results, both for financial accountability and to verify if investments generate improvements for citizens and businesses.

[5] See, for instance, Hatry, H., *Performance Measurement: Getting Results*, Washington, D.C., Urban Institute Press, 1999.

[6] Carl DeMaio (ed.), *Creating A Performance Based Electronic Government*, (Reference # 15 in table 2 below and in Annex A)

Exhibit 2 Measurement logic Model
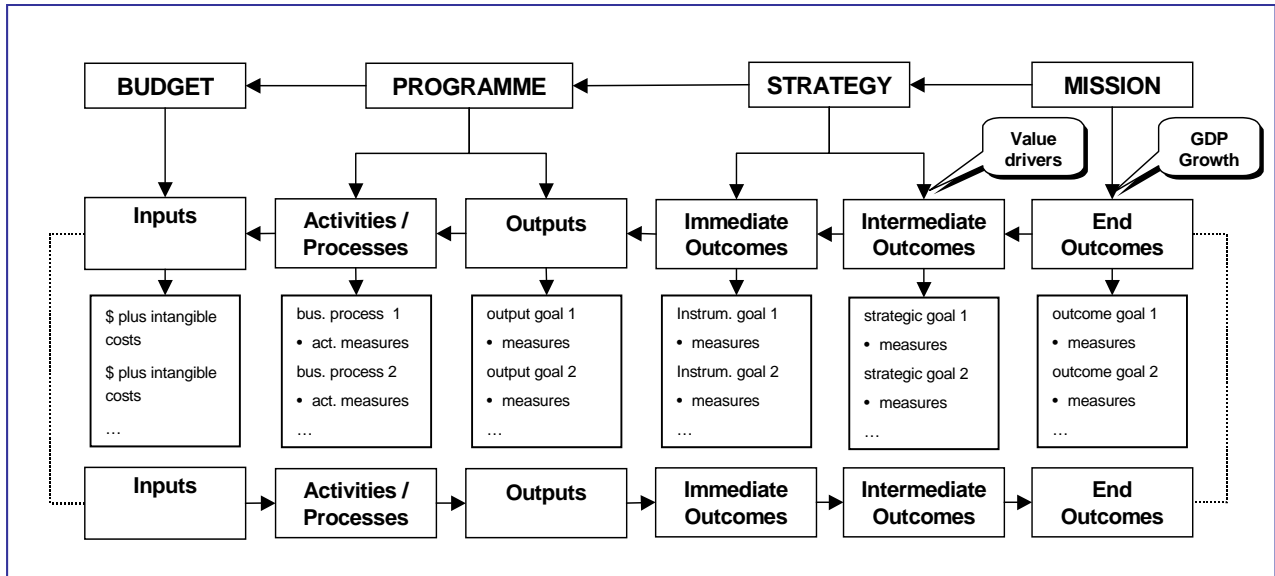
1.3. Hints from European Commission and Member States

With respects to the objectives and the corresponding impacts to be selected as target for measurement can be found, first of all in European Commission *eGovernment Communication*, as well as in other documents referenced in the *Communication*, such as the *Lisbon Strategy* and the *eEurope* action plans (2002 and 2005). Exhibit 3 below outlines the main hints contained in the *Communication*, whereas in Exhibit 4, integrating the *Communication* with other relevant EU policy documents, illustrates an extensive unstructured list of objectives/impacts at different level of abstraction is derived.

Analysing the most recent publicly available eGovernment strategy and more general policy documents for all of 25 EU Member States, we identified a list of declared eGovernment objectives as well as what seems to be, at least form the documents reviewed, the current priority focus of major initiatives. **Table 1** in next page summarises this work using the following notation: the icon 🎯 indicates declared objectives, whereas the icon 🔍 indicates that a particular objective is also the current priority focus of major initiatives. The objectives plotted in the table columns are our conceptual re-organisation from the analysed document in the sense that we aggregated under a number of labels objectives that in our view, although phrased differently, belonged to the same group.

Indeed the indications from the EU documents and from the analysis of Member States eGovernment objectives (Table 1), are fairly exhaustive, but do no provide an overall structure organising the various elements into a general model, such as for instance the Logic Model of Measurement illustrated in Exhibit 2 of paragraph 1.2. The same applies to the reports surveyed in the state of art review presented in paragraph 2.4 (Table 2) and for the comparative analysis of measurement methodologies running in some EU Member States and in countries such as Australia, Canada and the US that are analysed in paragraph 2.5 (see table 3 and all the tables reported in paragraph 2.6). In general such analysis uncovers both convergence and divergence in the objectives from which measurement targets should be derived.

Exhibit 3 Extracts from eGovernment Communication (COM(2003)567)

– On page 4 –

..good practices show that eGovernment is a powerful means indeed to

- Deliver better quality services
- Reduce waiting times
- Improve cost effectiveness
- Raise productivity
- Improve transparency & accountability

– On page 4 –

..administrations are facing the challenge of improving

- Efficiency
- Productivity
- Service quality

With unchanged or even reduced budget

Information and communication technologies (ICT) can help public administrations to cope with the many challenges... the focus should be on the use of ICT *combined with* organisational change and new skills ... This is what eGovernment is about

– On page 7 –

eGovernment is defined as the use of ICT in public administrations combined with organisational change and new skills in order to improve

- Public Services
- Democratic processes

And strengthen support to

Public policies

– On page 8 –

eGovernment enables the public sector to maintain and strengthen good governance in the knowledge society. This means a public sector

- Open and transparent
- At the service of all
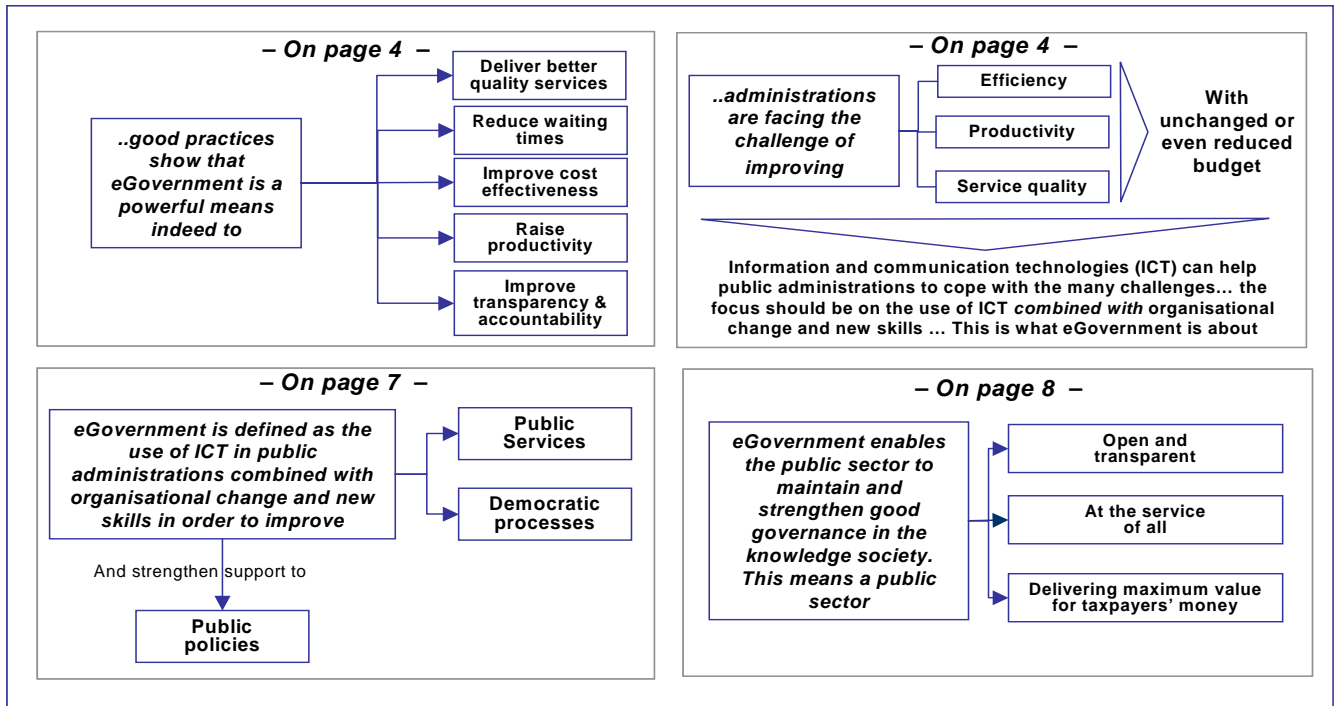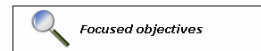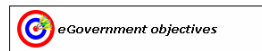- Delivering maximum value for taxpayers' money

Exhibit 4 Unstructured List of Relevant Items from Relevant EU documents

- GDP growth
- Employment growth
- Increased socio-economic cohesion
- Openness, transparency & accountability
- Maximum value for taxpayers' money
- Quality of services
- Reduction of waiting times
- Better cost-effectiveness
- Service to all
- Quality of life
- Competitiveness
- Cooperation among administration
- Inclusiveness
- Reduction of administrative burden
- Efficiency and productivity
- Socio-economic development at large
- Support to public policies
- Support to democratic processes
- Public information as accessible as possible
- Basic public services online
- Broadband
- Inter-operability
- Interactive public services
- Better public procurement
- Public Internet Access Points
- Culture and tourism

Table 1 Main objectives and focus on in each country

	Service perspective			User perspective					Government perspective			Economic perspective	Legal perspective
	Automation	Service delivery	Quality	Access/Social Inclusion	Administrative simplification	Trust/Privacy and Security/Transparency	Take-up	eDemocracy	Back-office optimisation	Joined-up government/ inter-institutional cooperation	HR Development	Efficiency	Regulatory framework
Austria		◎	🔍		◎ 🔍		🔍	◎	◎ 🔍	◎			
Belgium				◎	◎ 🔍	◎ 🔍	◎		◎ 🔍	◎			
Cyprus	◎	◎		◎	🔍								
Czech Republic		◎		◎	◎	◎	◎		◎ 🔍	◎ 🔍		◎	◎ 🔍
Denmark			◎				◎ 🔍		◎ 🔍			◎	
Estonia		◎ 🔍		◎ 🔍		◎	◎	◎ 🔍	◎ 🔍	◎	◎	◎	
Finland		◎ 🔍		◎ 🔍		🔍	◎		◎	◎			
France		🔍			◎	◎	◎		🔍	◎			◎ 🔍
Germany		◎ 🔍		◎		🔍	🔍		◎ 🔍	◎			
Greece		◎ 🔍				🔍	🔍		◎ 🔍	◎			
Hungary		◎ 🔍					◎	◎	◎			◎	
Ireland				◎		🔍	◎ 🔍		◎ 🔍	◎		◎	
Italy		◎	◎			◎	◎		🔍	🔍	◎	◎	
Latvia				◎					🔍	◎ 🔍			◎
Lithuania		🔍		◎			◎ 🔍	◎	◎ 🔍				◎
Luxembourg		🔍		◎			◎		◎ 🔍	◎	◎		
Malta		🔍		◎	🔍	◎	◎	◎	◎			◎	◎
Netherlands		🔍					◎ 🔍		◎	◎			◎ 🔍
Poland		◎ 🔍		◎	◎				◎ 🔍	🔍		◎	
Portugal			◎				◎ 🔍	◎ 🔍	🔍	◎ 🔍		◎	
Slovakia		◎ 🔍		◎	◎	◎	◎		◎ 🔍			◎	◎
Slovenia		◎			🔍				◎ 🔍	◎		◎	◎
Spain				◎ 🔍			◎ 🔍		◎ 🔍	◎			◎
Sweden		◎ 🔍	◎ 🔍						◎ 🔍	◎			◎
United Kingdom		◎ 🔍		◎		◎	◎		◎ 🔍	◎ 🔍	🔍	◎ 🔍	

◎ eGovernment objectives   🔍 Focused objectives

2. The State of Play

2.1. The Challenges of measuring public sector performances[7]

The difficulty of measuring public sector performances and in particular output is testified by the fact that, as reported in the recently published *Atkinson Review*[8], in the UK and in many other countries from 1960s until very recently the convention was used that **input = output**. In other words the output of the public sector has been measured as of equal to the total value of the inputs (i.e. compensation of employees, procurement cost of goods and services, quota of consumption of fixed capital, etc.).

In order to better understand these difficulties the following important distinction must be made within the general category of public sector output:

❑ ***Individual goods and services***: those that are consumed by individual households;
❑ ***Collective services***: those that are provided simultaneously to the society as a whole[9].

This distinction – which more or less coincides with the one found in the public economics literature between private goods with externalities (individual services) and public goods (collective services) where consuption is 'non rival' and nobody can be excluded from it[10] – is important since measurement is allegedly more difficult in the latter case of collective services. Examples of individual services are:

❑ Education services;
❑ Health and social work services;
❑ Selective social security services;
❑ Other personal and community services (i.e. recreation and cultural services, sewage and refuse disposal services, sanitation and similar services, etc)[11]

Examples of collective services are:

❑ Administration services of the state and the economic and social policy of the community, that is to say general public administration;
❑ Provision of services to the community as a whole (e.g. defence, justice, police, fire brigade);
❑ Compulsory social security services[12];

---

[7] The literature on the measurement of public sector performances and output is vast and growing and it is beyond the scope of this report to review it. In this paragraph we limit our analysis to pinpoint the most crucial aspects of the topic resorting to a few recent studies, with no claim to review such literature exhaustively.

[8] *Atkinson Review: Final eport. Measurement of Government Output and Productivity for the National Accounts*, London, Palgrave MacMillan, January 2005, p. 12 (http://www.statistics.gov.uk/about/data/methodology/specific/PublicSector/Atkinson/downloads/Atkinson__Report_Full.pdf , accessed February 2005). This is a independent review of the measurement of government output in the National Accounts, that was commissioned to Sir Atkinson by the UK National Statistics Office.

[9] The distinction is explained in details in Eurostat, *European Systems of Accounts*, Brussels, 1995, par. 3.82-3.87 and in Eurostat, *Handbook of Price and Volume Measures of National Accounts*, Brussels (2001 edition), p. 37 and pp. 112-113.

[10] On this distinction see the classic analysis of Musgrave, R.A. and P.B. Musgrave, *Public Finance in Theory and Practice*, New York, McGraw-Hill Book Company, 1984.

[11] Eurostat, *Handbook of Price, op. cit.*, p. 37 and more in detail 114-128.

The convention **input = output**. has been increasingly challenged by the view that the output of the public sector should be measured autonomously and as such be included in National Accounts. This view has been adopted by the United Nations System of National Accounts (SNA)[13] and later by the European System of Accounts (ESA 95)[14]. ESA 95 has established a general A/B/C classification to be applied also to the measurement of the category of non-market output (of which public sector output represents the biggest share) reported below:

- ❑ A methods: most appropriate methods;
- ❑ B methods: those methods which can be used in case an A method cannot be applied;
- ❑ C methods: those methods that shall not be used[15].

For the measurement of output of individual services the *A method* is the use of *volume indicators* possibly valued at current prices[16] and *adjusted to reflect quality*. *Lack of quality adjustment* is considered a *B method*. For individual services the use of *input* (i.e. number of employees) or *activity* (i.e. number of operations in hospitals) to measure output is considered a *C method*. It is worth stressing that quantitative numbers reflecting activities are actually process indicators, as they provide a proxy of task performed and can be used to measure the efforts produced. As correctly noted in a recent study that we will review below, in certain cases process indicators can also be used as indicators of production, as for instance in home care where the number of staff contact hours can measure the output[17].

On the contrary for collective services, given further measurement difficulties, *the volume of activity and/ or input are considered B methods*. It is worth also noting that for ESA 95 outcomes indicators are considered not representative of the outputs and can at best be used as indicators of their quality.

As from 2006 *C methods will no longer be acceptable in National Accounts under a European Commission Decision of 2002*[18], Member States have started to tackle the issue of developing methods to measure public outputs and are facing a number of difficulties that we briefly review below.

The basic and straightforward source of difficulty in measuring public outputs resides in the lack of market prices and mechanisms that can be used to valuate them. Actually it is not only a problem of giving a value to an output, but also of understanding how the output is received and evaluated by the end users, that is to say of including in the measurement also the quality dimension. Quality is a problematic issue also in the case of outputs produced for the market, where nonetheless the price gives at least a proxy indication of quality. In this case it can be assumed, in fact, that the quality difference between two products is translated in their market price, which in turn reflects consumer preferences[19]. In the market, consumers have usually at their disposal a number of 'exit choices' to signal dissatisfaction with a given good or service.

---

[12] *Ibid.,* p. 112.

[13] United Nations et al, *Systems of National Accounts*, New York, 1993.

[14] Eurostat, *European Systems of Accounts*, *op. cit.* . For the European standards In this paragraph we will refer to Eurostat, *Handbook of Price and Volume ...*, *op. cit*, which is based on the ESA95. For a critique and analysis of the limits of the input=output convention for non market output see par. 3.1.2 of the *Handbook*.

[15] Eurostat, *Handbook of Price and Volume..., op. cit.,* p. 4.

[16] When it is possible to identify unit of output and multiply it by unit cost.

[17] Social and Cultural Planning Office (SCP), *Public Sector Performance: An International Comparison of Education, Health Care, Law and Order and Public Administration*, SCP, The Hague, September 2004, p. 37.

[18] As reported for instance in *Atkinson Review..., op.cit.*, p. 34.

[19] Eurostat, *Handbook of Price and Volume..., op. cit.*, p. 34.

In the case of public outputs, exit options are very limited for individual services[20], and even more so in the case of collective services[21], where rather than exit the way for users to be heard is through 'voice' (expressing their votes and/or organising some form of public opinion campaign).

Volume output indicators usually inadequately reflect the quality of services, although in some cases some objective measures could be found (*see infra*). Yet many relevant 'soft' sides of quality (i.e. how kind are public employees in the front-office) cannot be measured without resorting to subjective quality assessments of services by users. Without taking into account quality, measurement of output may lead to wrong conclusion on productivity and efficiency, when for instance the size of school classes is reduced (output per input decrease, but quality should increase). As an anticipation, we can report that Eurostat *Handbook* proposes three ways to adjust for quality[22]:

1. Direct measurement of the quality of the output through a survey of the general public on the quality of public services;
2. Using the quality of the inputs and assuming that the quality change of the inputs leads automatically to a quality change of the output;
3. Using outcomes to measure the quality of the output.

We will come back, however, with a more detailed analysis of the issue in Section 3 (see par. 3.2).

Having discussed the difficulties and possible solutions of measuring the output of public administration, it will be quite useful to look at how such measurement has been attempted in two recently published comparative analyses of public sector performances[23].

The first is a study published by the Social and Cultural Planning (SCP) Office of the Netherlands in 2004 comparing public sector performances in 29 countries (EU's 25 Member States plus Australia, Canada, New Zealand and USA) [24]. One of the most noteworthy quality of this study is that the comparative analysis of public sector performances is highly context sensitive. The authors analyse thoroughly the structural and institutional characteristics of the countries and group them in similar ideal-typical clusters before commenting measurement data and, when they do comments, they put such data in the context of countries peculiarities. So, for instance, before analysing general public administration services, administrative cultures, administrative systems structural dimensions (i.e. level of decentralisation), typology of welfare state, and level of traditional confidence and trust in the civil services are analysed[25].

The approach of the study is to limit measurement to outputs rather than looking also at outcomes as illustrated below:

> It is often more difficult to relate production processes directly to effects (outcomes) than to output. It is therefore useful to distinguish between objectives that can be measured objectively via the final product, and deeper, underlying social objectives. ...The better a product indicator reflects a direct goal of the production process, the more applicable it will

---

[20] Those consumers who can afford to pay can switch, for instance, from public education and health to private providers.

[21] For general public outputs, such as for instance the level of administrative burden imposed on citizen and businesses, exit can only take the form of either outflow of businesses or of emigration.

[22] Eurostat, *Handbook of Price and Volume..., op. cit.*, p. 34.

[23] In the synthesis we will not go into the actual data presented in the two studies but we focus on the general methodological approach.

[24] Social and Cultural Planning Office (SCP), *Public Sector Performance: An International Comparison of Education, Health Care, Law and Order and Public Administration*, SCP, The Hague, September 2004.

[25] *Op. cit.*, see for instance chapter 6 and par. 7.2 of chapter 7.

> generally be …The term *effective indicator* generally refers to key figures that describe the extent to which these underlying objectives are achieved…the degree to which this is the case,…, is often determined not only by the production process, by also by external factors. The more neutral term *achievement indicator* is therefore more appropriate in this context.[26]

Among individual services the study focuses particularly on the performance of education and health, but presents also data on collective services under the label 'public administration' defined a bit differently from the ESA95 definition, as:

> …comprising all those activities directed at policy making, legislation and management of the public sector[27].

Adding that:

> However, in practice the demarcation between policy, legislation and management on the one hand, and concrete services provided to individual citizens on the other hand, is not always easy to draw[28]. (p. 235).

The data used to carry out this analysis, especially for individual services, are internationally compiled official statistics taken mainly from OECD and Eurostat, such as for instance 'enrolment rates in full-time plus part-time education' (from OECD *Education at a Glance*) or 'inpatient care, admissions per 1000 inhabitants' (from OECD *Health Data*) and so on. For the measurement of the performance of general public administration services the authors resorted to four aggregate indicators of quality:

1. Level of bureaucracy (does bureaucracy hinder business activity?);
2. Level of transparency (is transparency of government policy satisfactory?);
3. Level of effectiveness (are government decisions effectively implemented?);
4. Level of corruption (do bribing and corruption exist in the economy?).

While conceptually the choice of indicators is sound, the data used for measurement are methodologically rather weak as recognised in the study itself[29]. For the first three indicators the source used are various edition of the *World Competitive Yearbook* published annually by the Lausanne Institute for Management Development[30]. These reports contain a general index of quality of government an sub-indices constructed through a survey among more than 4000 respondents representative of the business community in about 60 countries. For indicators number four the source is instead the well-know composite index of corruption published by Transparency International (www.transparency.org). Finally the dimension of openness of government is also considered in this Dutch study in terms of freedom of information, privacy and related issue and aggregate survey of government openness are used as sources[31].

The second quite recent comparative study of public sector performances is a working paper of the European Central Bank (ECB)[32], which actually inspired the Dutch study discussed above[33], but differs from it in number of respects. First the scope in term of countries is slightly different (23 industrialised OECD countries) and it does not include new EU Member state.

---

[26] *Op. cit.*, p. 39.

[27] *Ibid.*, p. 235.

[28] *Ibid.*

[29] *Ibid.*, p. 286.

[30] A similar source is the *World Competitive Report* edited annually by the World Economic Forum.

[31] See for instance www.freedominfo.org Global survey.

[32] A. Afonso, L. Schuknecht and V. Tanzi, *Public Sector Efficiency: An International Comparison*, European Central Bank Working Paper no. 242, July 2003 (http://www.ecb.int/pub/pdf/scpwps/ecbwp242.pdf , accessed February 2005).

[33] Social and Cultural Planning Office (SCP), *Public Sector Performance, op. cit.*, p. 279.

Second, to study the performance and the efficiency of the public sectors of 23 industrialised OECD countries, the authors compute public sector performance indicators (PSP) using data on what they define outcomes rather than output. More precisely they use socio-economic indicators considered as end results to measure public sector performances. Third the ECB working paper distinguishes two broad categories of services that only partially reflect the distinction between individual and collective services. In fact the distinction is between 'opportunity'[34] indicators of administrative, education, health, and public infrastructure outcomes and 'Musgravian' indicators assessing governments' performance in allocation, distribution, and stabilisation (see Exhibit 5 in next page).

The working paper also computes public sector efficiency indicators, dividing the public sector performance indicators measured by the socio-economic indicators by the corresponding public expenditure. Despite these differences, both the Dutch study and the ECB working paper are similar in the type of sources used, as for concrete socio-economic indicators the data come mainly from OECD and World Bank statistics, whereas for the measurement of the administrative block (corresponding to the general public administration category in the Dutch study) the only source is again the cited *World Competitiveness Yearbook*.

Exhibit 5 ECB Working Paper Conceptual Measurement Framework
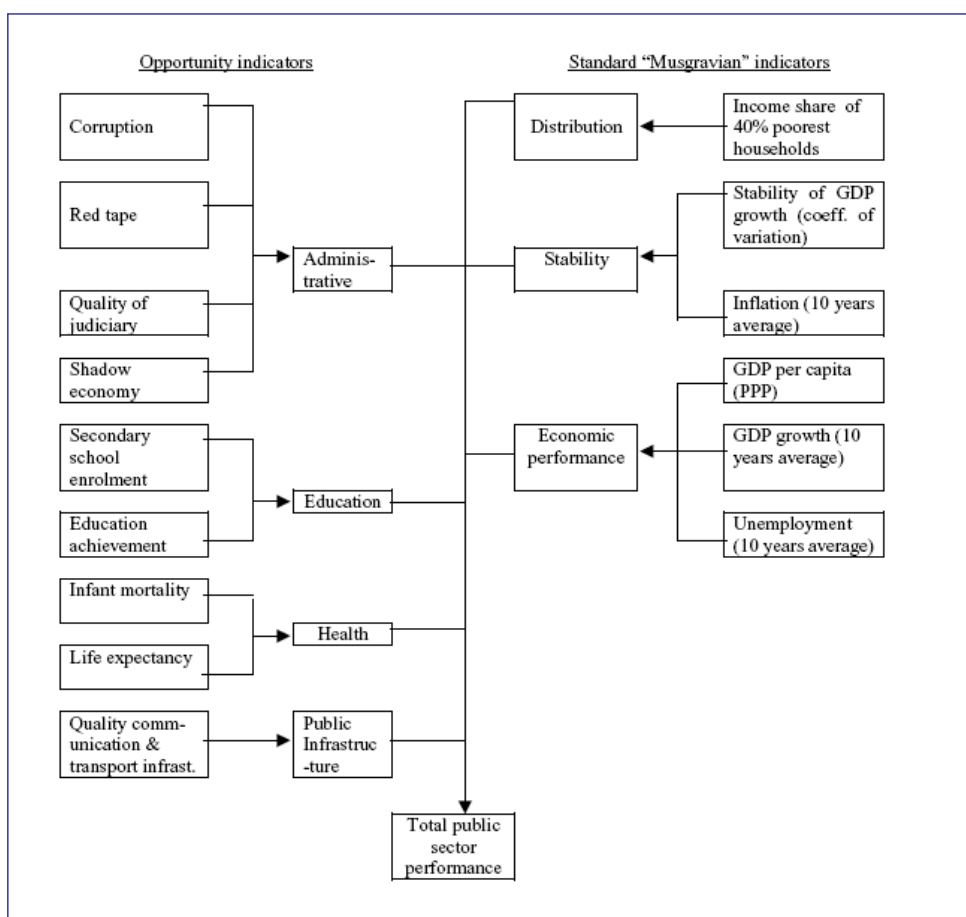
Source: A. Afonso, L. Schuknecht and V. Tanzi, *Public Sector Efficiency, op. cit.,* p. 10.

---

[34] The term is used to refer to the fact that these are indicators of services that government provide to create individual opportunities to play in the market.

2.2. The relevance of Measuring eGovernment Performances

The best way for introducing the discussion on how the above analysis of measurement of public sector in general bears on eGovernment and on eGEP objectives and approach, is to go back to the allegedly increased difficulty of measuring collective general public administration services as compared to individual services. The best acknowledgement of such difficulty is the mentioned official ESA 95 choice that the use of input and/o activity to measure output is an accepted second best (B method) for collective services, whereas is considered unacceptable for individual services. As matter of fact the above distinction and its implications for measurement partly reflects objective difficulties and partly is somehow only the result of a convention. The Dutch study cited above, for instance, interestingly stresses that also within the label of general public administration services one could actually identify activities that:

> ... can be regarded as individual services, like the issue of passports and the entering of transactions in the land registry[35].

The study adds that in the Netherlands objective performance indicators for some areas of general collective services are being constructed but that such data are not available for a wide number of countries already packaged in a comparative reliable fashion. In this respect we report below some suggestions contained in the Eurostat *Handbook* on how to measure objectively some of the services included in the category of collective services:

- ❑ Output for compulsory social security services could for example be measured by the number of people that receive benefits or allowances. Quality aspects include the speed at which benefit applications are dealt with, whether payments are always made on time and the number of errors made;

- ❑ Output of tax authorities could be measured by the number of tax assessments completed, preferably broken down by type of tax and between routine assessments and investigations; quality measures like number of errors made could be included[36].

Therefore, for some areas of collective services the difficulty does not depends only on the impossibility of measuring, but also on the fact that certain discrete and punctual data potentially available have not been gathered so far. We can then derive from the above the implicit suggestion that such indicators should be created and corresponding data gathered.

It is then natural to see that, depending on the capability of providing online transactional services and on take up (i.e. tax file online, change of residence completed online, mandatory enrolment and registration in various domain processed online, etc), through eGovernment precise and punctual data can be easily gathered on the outputs of several general public administration services. So measuring eGovernment could actually contribute to the general measurement of public sector performance by providing new data and also by taking into account the quality dimension. Referring to the two Eurostat *Handbook* proposals above eGovernment, in fact, contributes to quality in term of speed and correctness of service delivery, to which one could add ease and convenience as well as reduction of administrative burden. These are all elements that can be directly measured (speed) or assessed through opportunity cost calculations.

This consideration brings us to tackle the hidden question whether a specific measurement of eGovernment performances as separate from the general measurement of public sector performance is necessary and legitimate. One could, in fact, argue that eGovernment is simply an additional delivery channel whose contribution in each domain of application is ancillary to the general production and delivery of public services, and therefore should be already taken care of in the indicators used to measure public sector outputs in general. Our view is that, currently, this objection is not valid for a number of reasons:

---

[35] *Ibid.*, p. 257.

[36] Eurostat, *Handbook of Price and Volume..., op. cit.*, p. 113.

1. First, very simply, eGovernment needs at least some specific metrics to justify the investment required to make it happen. In a context of shrinking public budget, in which many countries have frozen public employees turn over, the financial resources for eGovernment must show their payoff;

2. Second, also very simply, the current development of general measurement of public sector outputs is not yet such to really take into account some of the most innovative eGovernment contributions, which would get lost and not be accounted for;

3. Third, more fundamentally, eGovernment is not simply a delivery channel but it is increasingly a catalyst for organisational innovation and rationalisation, as well as for human resources revitalisation and empowerment. Besides increasing speed and accuracy of service delivery, eGovernment can contribute to radically change how governments go about their business as usual, including long ingrained cultural attitudes toward services delivery. Therefore it is strategically important to measure and show such potential results when they occur, so to trigger emulation in all sectors of the public administration (positive 'institutional isophormism');

4. Fourth, as indicators creation and data gathering should start almost from scratch and in certain areas the technology allows to register concrete and very precise data reflecting results not available for traditional delivery channels, in the field of eGovernment there is the potentiality to, so to say, 'leap-frog' ahead in term of the quality of the measurement system;

5. Last but not least, in the middle-term it is not unreasonable to foresee a conglobation of eGovernment measurement into a general measurement framework of public sector performances, to which the former will have given a very crucial push and contribution.

Having clarified the legitimacy of an eGovernment specific measurement framework, it is now possible also to make clear that in the case of eGovernment indicators and data must be constructed almost form scratch for two reasons, one of necessity and one of strategy.

First, given the novelty of eGovernment, there are no ready-made relevant statistics, similar to those used in the two studies reviewed above, to measure its performance, thus the construction of indicators for subsequent data gathering is a necessity. On the one hand socio-economic available data can be used to relate end outcomes to eGovernment. This is foreseen in our methodology especially with a more middle to long term perspective. Taking into account that there is always a temporal lag between the production of an output and the possible realisation of an end outcome, it is nonetheless our ambition to start evidencing the possible links between eGovernment services and possibly longer term outcomes reflected in widely available nationally and internationally compiled statistics. On the other hand, more direct and short term measures of the performances of public services provided through the eGovernment channel are needed. This implies defining the indicators, establishing an implementation methodology and then starting gathering the data.

Second, it is a strategic choice that of conceiving measurement as a purposeful gathering of information and comparing what you learn to some standard or expectation, that should be ingrained throughout every step and level of the eGovernment process, in a bi-directional bottom-up and top-down fashion: from the business case of single project to the central level monitoring of national programs and vice versa. In our view measurement cannot be a *post-hoc* discontinuous activity, but it must be a continuous process starting with the definition of target objectives and of the indicators to measure them, continuing with the process of gathering the relevant information, leading to a comparison between the target and the actual indicators data, which in turn feed again in the definition of target continuing thus the measurement cycle.

2.3. Challenges of eGovernment Performance Measurement

The fact that a comprehensive measurement framework for eGovernment, encompassing costs and benefits analysis and an understanding of macro level impacts, has yet to be developed and that the emerging attempts are facing serious difficulties in their implementation, depends to a large extent on a number of additional peculiarities with respect to the discussion above,

which make measurement more difficult than in the private sector. Since eGovernment is not any different from government, such peculiarities are in large part the same as those characterising in general the measurement of public service provision and in part linked to the novelty of the delivery channel used. There are three set of challenges hindering measurement:

1. Universalistic and multiple public value delivery;
2. Institutional conditions weakening incentives to measure;
3. Technical measuring difficulties;

Universalistic and multiple public value delivery. Public agencies must usually pursue a universalistic mission and serve all constituents, delivering multiple public values for the:

- ❑ ***User as consumer***: the search for quality services that are inter-active, user-centred, individualisable, inclusive, and maximise fulfilment and security;
- ❑ ***User as tax-payer***: the search for savings through dynamic, productivity-driven and value for money operations ('more for less'); and
- ❑ ***User as citizen and voter:*** the search for good governance through open, transparent, accountable, flexible, and democratic practices.

From a technical point of view the multiplicity of the constituents served and of the goals pursued make the picture analytically blurred and can easily results in redundancies and overlaps. Should, for instance, the reduction in case processing time yielded by any given eGovernment application be measured as an efficiency (cost saving) gain or as usage gain for the consumer (reduction of administrative burden)? Dilemma such as this are very common in eGovernment and may produce too many measures for a single element. Redundancies in measures means that benefits may be counted several times thus weakening the actual power of measurement.

From a political perspective an even more relevant tension exists in term of the relative priority to be given to the measurement of efficiency (i.e. cost saving) and effectiveness (better services and constituency satisfaction) objectives. On the one hand, there is an increasing drive by governments, not only related to eGovernment but to the public sector performance in general, to financially evaluate and measure efficiency gains. On the other hand, public administrators in charge of eGovernment programs/projects tend to see them also and, sometimes primarily, as a public utility service for the provision of more value to citizens and businesses. In the a leading-edge country in term of quantitative financial measurement of performances such as United States, for instance, a survey of public administrators in charge of eGovernment projects found that only 20% of them listed cost-efficiency gains as the main benefit of eGovernment, while the majority identify eGovernment as an instrument to enhance the achievement of their mission in term of customer satisfaction![37]This tension in strategic perspective can also be easily translated into a technical discussion. In fact efficiency gains are allegedly those more easily measurable using quantitative direct or proxy financial indicators, whereas effectiveness gains can be measured sometimes only qualitatively thorough subjective evaluations or at best by complex financial evaluation of opportunity costs and time savings.

Institutional conditions weakening incentives to measure. First, rules and regulations often hinder or delay the possibility exploit the full benefits potentially yielded by eGovernment applications (i.e. personnel redeployment) thus decreasing the incentive to measure.

Second, an agency capability of producing mission critical end results very often depends heavily on input and collaboration from other agencies. Thus, if measurement does not take into account for these interaction, an agency risks to be held accountable for results it was

---

[37] Survey conducted by the *Public Sector CXO Magazine* and reported in GSA, *op. cit.*, p. 6.

unable to achieve for reasons beyond its control. Paradoxically the more our government become 'joined-up' the greater is the difficulty in devising discrete measurement.

Technical measuring difficulties. First, eGovernment initiatives must deliver on tangible goals (i.e. reduction of case processing times), but also on intangible public values whose measurement is not immediate. The intangible dimension and lack of pricing mechanisms decrease the likelihood of identifying easily quantifiable measures that are distinguishable from one another and clear-cut. Second, eGovernment (as any other public output) can result in 'positive externalities' that are difficult to measure and especially difficult to attribute ('harvest dilemma'). In general, as pinpointed in the Commission eGovernment Communication:

> ...in the public sector there are definition and measurement problems for inputs and outputs. One problem is the pricing of public services, which is often not directly related to the inputs (taxation is not specific to the service provided). Also, as many online services are to a large extent information-based, they follow the rules of information economics in which marginal prices are approaching zero, and are thus not an indicator of the value of the service, while the operational costs of initial information development and maintaining information over its lifecycle, which can be significant, still have to be covered[38].

In principle a measurement framework should rest on clear-cut value drivers or mission critical results from which a set of measures and indicators are derived in such a way that they are, first of all quantifiable and easy to collect, but also logically consistent, namely:

- ❑ *Unique and mutually exclusive*. To the extent that an indicator is duplicated by, or overlaps with, other indicators, it becomes less important; and
- ❑ *Collectively Exhaustive*. Indicators should exhaustively cover all relevant aspects of the phenomenon measured with respect to the pursued mission results.

A mission aligned measurement framework comprising mutually exclusive and collectively exhaustive indicators is hard to reach for all of the three challenges considered above.

2.4. State of Play: General Overview

The topic of eGovernment impact measurement has gained momentum in recent years. As a matter of fact between 2002 and the first half of 2005 more than a dozen contributions, covering to some degrees the issue of measuring eGovernment impacts, have partially filled the gap existing on this topic and further confirm the progressing momentum (see Box 1 below).

A quite large number studies, reports, benchmarking exercises, evaluations and measurements have been carried out on eGovernment during the past five years. As part of the survey of the state of play we have reviewed 64 of them (see table 2). They include reports by market research and consulting companies (some of which commissioned by the European Union), academic institutions, international organisations, but also official documents released by national level institutions in charge of eGovernment both within and outside the European Union[39].

---

[38] Communication From The Commission To The Council, The European Parliament, The European Economic And Social Committee And The Committee Of The Regions; *The Role of eGovernment for Europe's Future*, COM(2003) 567 final, September 2003, pp. 20-21.

[39] The synthetic overview of Member States measurement initiatives is based on: a) information gathered during the field missions accomplished so far (France, Germany, Netherlands, Poland, Spain, UK); b) answers to eGEP questionnaire (returned so far only by Finland, Hungary, Spain); c) desk research on documents available online. On the basis of these sources we can affirm that a centrally defined articulated measurement methodology is currently in use in Denmark, France, Germany, The Netherlands, and United kingdom. As policy and initiatives changes are not automatically translated into policy documents, it is possible that a number of other Member States are already using some performance measurement methodology focusing on impacts and not simply benchmarking the

Box 1 The Momentum: Selective list of Reports on eGovernment Impacts/ Benefits, 2002-2005 (*)

- ❑ **October 2002**: US Chief Information Office releases the *Value Measuring Methodology*, a guide for measuring the values and benefits of electronic services to be used by federal agencies;

- ❑ **October 2002**: Performance Institute, a Washington based think tank, publishes the report *Creating a Performance Based Electronic Government*;

- ❑ **April 2003**: the Australian National Office for the Information Economy (NOIE) releases a very extensive study on the benefits of eGovernment;

- ❑ **May 2003**: US General Services Administration (GSA) issues a report on High Payoff in Electronic Government, where eGovernment impact areas are classified;

- ❑ **July 2003**: Gartner presents the 'Public Value of IT' (PVIT) methodology to measure IT investments impacts over time on service level, operational efficiency and political return;

- ❑ **August 2003**: The UK Office for Government Commerce releases a guide on the measurements of eGovernment costs and benefits;

- ❑ **September 2003**: Deloitte Research publishes the report 'Citizen Advantage' proposing a methodology to measure the benefits of eGovernment for businesses and citizens;

- ❑ **October 2003**: European Commission's IDA programme, predecessor to IDABC, introduces the IDA Value of Investment (VOI) methodology focusing on the traditional return on investment (ROI) analysis but also on qualitative benefits;

- ❑ **February 2004**: new Danish National eGovernment Strategy contains clearly identified targets and their respective measurement indicators;

- ❑ **March 2004**: IBM Centre for the Business of Government publishes the paper *Measuring the Performance of eGovernment*;

- ❑ **August 2004**: The IT Department of the German Federal Ministry of the Interior releases version 4.0 of its WiBe methodology for the assessment of ICT project economic efficiency;

- ❑ **October 2004**: Treasury Board of Canada Secretariat releases a study on the measurement of eGovernment performances;

- ❑ **October 2004**: The CoBrA recommendations issued by the eEurope subgroup for eGovernment mention the need for a "common measurement framework";

- ❑ **November 2004**: A report commissioned by the Dutch Presidency of the European Public Administration Network ("Does eGovernment pay off?"), identifies several areas of eGovernment benefits;

- ❑ **December 2004**: The eGovernment Unit in DG Information Society and Media publishes *Top of the Web* survey of citizens and businesses identifies time saving and increased flexibility as benefits of eGovernment cleraly perceived as such by the public;

- ❑ **February 2005**: EU IDABC eGovernment Observatory releases a background research paper on the impact of eGovernment on competitiveness, growth and jobs.

- ❑ **March 2005**: The French Agency for the Development of Electronic Administration (ADAE) unveils the new Mareva methodology to measure the benefits of the national eGovernment Program ADELE

(*) Detailed references to the above listed studies are presented in paragraph 2.5 of this section

number of service available online that, however, has not yet been published on the Internet and therefore escaped our attention. It is our expectation that, thorough future field missions and the returned questionnaires, we will be able in the final version of the measurement framework to provide the exhaustive picture for EU Member States.

The main results of this survey is that the overwhelming majority of the reports focuses on supply-side indicators (# of services available online) and/or e-readiness (presence/absence of structural and institutional conditions for the development of eGovernment and more in general of the Information Society), while an increasing, but still limited number, considers the demand side (i.e. take-up and satisfaction with services).

A total of 24 entries of the 64 screened deal to some degrees with the topic of measuring eGovernment concrete impacts. More precisely of these 24 entries:

> In 5 cases eGovernment impacts is only an additional topic discussed briefly and the issue of measurement indicators is not touched

> 8 reports are entirely devoted to the analysis of eGovernment impacts, but contain no sustained analysis of measurement indicators

> 11 reports provide some insights into actual measurement mainly presenting micro-oriented business cases methodologies

Moreover, very few go as far as moving beyond the identification of impacts into the elaboration of an exhaustive list of concrete indicators and of an implementation methodology. Finally no study has attempted so far to produce a measurement framework, which includes also elements from an in-depth analysis of costs and which is based on an economic theoretical model of eGovernment impacts.

These results are presented in more details in **Table 2** reported in the next pages, of which we briefly explain here the logic. Inductively, from the first run of analysis of the various sources, we have identified four clusters of topics, namely : a) e-readiness; b) supply-side (of number and type of services available online); c) demand-side (take-up and partially user satisfaction); d) impacts. Then we identified for each item in the table its main topic (signalled in the cells with **M**) and whether it also deals with other topics in a supplementary way (signalled in the cells with **S**). In order to facilitate the reader to identify the most relevant entries for the topic of impacts and measurement we used the same colours as above. The references corresponding to each entry in the table are available at the end of this Annex.

Table 2 Main Focus of Surveyed eGovernment Reports

Study	e-readiness	Supply side (online availability of services)	Demand side (take up)	Effects/ impacts (A) Only discussion of impacts	(A) + measurement indicators
1. Accenture (2004)		M			
2. Accenture (2005)			M	S	S
3. Bartelsmann Foundation (2001).	M	M			
4. Birch(2003)	M			S	
5. BISER (2002)	M		M		
6. Booz Allen Hamilton (2002)	M	S			S
7. Burgess & Houghton (2002)		M			
8. Cap Gemini - TNO (2004)		M	M	S	
9. Cap Gemini E&Young (2004)		M			
10. Cisco (2004)		S		M	
11. COMNET-IT (2000)	M	M			
12. Cullen and Houghton (2000)		M	M		
13. Danish Digital Task Force (2004)					M
14. Deloitte (2003a)				M	
15. Deloitte (2003b)			M	M	
16. DeMaio, ed. (2002)					M
17. Demchak *et al.* (2000)		M			
18. Dexter and Parr (2003)	S		M		
19. Dutch Government (2006)					M
20. Dutch Ministry of Interior and Kingdom Relations (2005)					M
21. Dutch Ministry of Finance (2005)					M
22. Dutta *et al.* (2004)	M				
23. EOS Gallup (2002)	M		S		
24. Erin (2003)			M		
25. French Agency for Electronic Administration (ADAE 2005)					M
26. German Federal Ministry of Interior IT Dept (2005)					M
27. Foley and Ghani (2004)		M	M	M	S
28. Gant and Gant (2002)		M			
29. Gartner (2003)				S	
30. GSA (2003)			M	M	
31. Hart-Teeter (2003)		M	M		
32. IDA (2003)			S		M
33. IDABC (2005)				M	
34. Kaylor *et al.* (2001)		M			

Continues

Table 2 Main Focus of eGovernment Reports (continued)

Study		Focus of reports (M =main, S= supplementary)				
		e-readiness	Supply side (online availability of services)	Demand side (take up)	Effects/ impacts	
					(A) Only discussion of impacts	(A) + Some measurement indicators
35.	KEeLAN (2002)		M			
36.	Millard *et al.* (2004)		M		S	
37.	Momentum (2000)	M		M		
38.	Muylle et al. (2004)			M		
39.	NACO (2000)	M	S			
40.	NAO (2002)	S	M			
41.	Navarro & Canavante (2004)		M			
42.	NOIE (2001)		M			
43.	NOIE&DMR (2003)	S	M	M	M	S
44.	Nordic Council (2003)	M	M			
45.	PLS Ramboll and Eworx		S	M	S	
46.	PLS Ramboll and Eworx		S	M		
47.	PTI and ICMA (2001).	M	M			
48.	REGIONAL-IST (2003)	M	M	S		
49.	SIBIS (2003)	M		M		
50.	Smith (2001)		M			
51.	SOCITIM (2004)		M			
52.	Stowers (2004)					M
53.	Strover & Straubhaar (2000)	M		M		
54.	The Henley Center (2000).	M		M		
55.	TietoEnator (2001)		M			
56.	TBS of Canada (2004)					M
57.	UK Criminal Justice IT (UK CJIT 2005)					M
58.	UK Cabinet Office eGovernment Unit (UK eGU 2005)					M
59.	UK OGC (2003)					M
60.	UN (2003)	M	M			
61.	US Chief Information Office				M	S
62.	West (2003a)		M			
63.	West (2004b)		M			
64.	West (2003c)		M			

Source: See list of Reference at paragraph 2.8.

Despite the evidenced limits and the differences in scope and objectives with respect to eGEP measurement framework, some of contributions reviewed provide valuable insights in identifying the major areas of benefits and the corresponding components. We refer in particular the a number of methodologies currently running in some EU Member States and in Australia, Canada and USA. These are discussed in more details in the next two paragraphs.

In the reminding of this paragraph we briefly and selectively discuss a few interesting contributions more specifically focused on administrative burden and on efficiency.

Deloitte paper *Citizen advantage; enhancing economic competitiveness through eGovernment[40],* for instance*,* provides a methodology for the calculation of time savings generated by eGovernment reduction of administrative burdens. It is worth noting that the topic of administrative burden has been tackled in a more general perspective, not restricted to eGovernment, in a number of national studies containing similar estimations of administrative compliance costs.

The Dutch government has estimated, for instance that, the administrative burden cost to businesses amounts to € 17 billion per year (i.e. approximately 3.6% of GDP) [41]. Similarly a Belgian study representing estimated that the administrative burden cost up to € 6 billion per year for enterprises (i.e. about 2,41% of GDP) and € 2,66 billion per year to self-employed[42]. As outlined in the great part of surveyed studies, eGovernment is a powerful tool especially for improving efficiency, i.e. obtaining more output with the same level of resources as well as obtaining the same output with less resources. Deloitte Research paper *Cutting Fat, Adding Muscle[43]* identifies a three-pronged approach to get efficiency in the public sector through a well-designed IT strategy: a) **IT rightsizing**: optimisation of government IT spending by acting on public company assets; b) **Revenue optimisation**: re-engineering internal processes and adopting revenue maximisation techniques; c) **Use of IT to take costs out**: making leverage on IT application in administrative activities in order to reduce costs. A similar analysis of public sector efficiency opportunities has been commissioned by UK Treasury in 2004[44]: beside the above mentioned procurement and transactional services items, the report underlines the pro-active role of government policy and regulation activities for the private sector. A slimmer and IT-powered administration, in fact, could significantly reduce the compliance burden for enterprises. UK Treasury Report also strengthens the relevance of back-office reorganisation processes, which is the main focus of another EU-commissioned study[45]. Both improved efficiency and reduced administrative burden are constituent elements of extremely relevant positive externalities: increased competitiveness, economic growth and job creation, as confirmed by a recently published IDABC paper[46].

---

[40] Reference # 14 of Table 2.

[41] Reported in the K. Keuzenkamp, "How less administrative burdens for citizens can boost PanEuropean services A Dutch example of a good practice", Presentation made at IDABC Inaugural conference 17-18 February 2005 Brussels.

[42] Joos, A. and Kegels, C., *Les charges administratives en Belgique pour l'année 2002*, Bureau Fédéral du Plan, Bruxelles, 2003 (http://www.simplification.fgov.be/downloads/Plan_rapport_final_2002.pdf, accessed March 2005).

[43] Reference # 15 of Table 2.

[44] Gerhon, P., *Releasing resources for the front line – Independent Review of the Public Sector Efficiency*, UK Treasury, London, 2004 (http://www.hm-treasury.gov.uk/media/B2C/11/efficiency_review120704.pdf, accessed March 2005).

[45] Millard, J., Svava Iversen, J., Kubiceck, H., Westholm, H. and Cimander R., *Reorganisation of government back-offices for better electronic public services,* Report to the European Commission, 2004 (http://www.europa.eu.int/idabc/en/document/3587/5713, accessed February 2005).

[46] Reference # 33 of Table 2.

2.5. Selected Running Methodologies: Comparative Analysis

Below we focus in some details on five EU national methodologies (Denmark, France, Germany, and UK) and on a departmental one (UK Criminal Justice IT), for which Table 3 in next page summarise the conceptualisation of major targets of measurement. We also briefly refer to examples from outside the EU as a term of comparison. Finally we also consider a more specific methodology recently released by the Dutch Ministry of Interior and Kingdom Relation and aimed at measuring eGovernment contribution to the reduction of administrative burden on citizens and businesses.

The goal is to identify the various area of benefits/impacts considered and their components and to pinpoint differences and commonalities. This work has been instrumental to the operational declination of the components of the measurement framework analytical model and to the objective to include in it elements that are widely used internationally so to maximise the chances of finding basic common grounds that EU Member States can agree upon.

If we only look at Table 3, limited to the higher level of conceptual abstraction in the five methodologies considered, there appears to be a substantial level of difference among them. Such divergence is confirmed also by looking at the tables reported in paragraph 2.6 for Australia, Canada and USA. On the other hand if we go down in the level of abstraction and consider the elements included under each higher level heading, although differences remain, a relevant number of common elements emerge.

The differences in the higher level of conceptualisation partly reflect simply different terminological choices, and partly the different administrative context and the different objectives shaping and inspiring the various methodologies.

For instance, the general category defined as "Necessity" in the French methodology "Mareva"[47] and "Urgency" in the German methodology "WiBe 4.0"[48] actually include mostly similar items. In both cases, for instance, the compliance with regulatory framework is cited as an element of 'necessity' or 'urgency' of a project. Regardless of the internal efficiency benefits and of the external effects of a given project, the items under the two categories "necessity" (French case) and "urgency" (German case) aim to measure how such project contribute to the achievement of outcomes that are considered compulsory either from an internal or from an external perspective. So Mareva includes under "necessity" the qualitative measurement of how a given project contributes to the necessities of the National eGovernment Programme ADELE (infrastructures, horizontal projects), to regulatory obligations or the political commitment, to the rationalisation of public action in general. In a similar way "WiBe 4.0" include under "urgency" qualitative indicators of how a given project contributes to "flexibility and inter-operability" of an IT system, to compliance with regulatory requirements, to overall efficiency of the public sector as a whole and clearly states that the monetary quantification of these item is usually not possible but that they 'have a significant influence on economic efficiency in a broader sense'[49].

In the French case the distinction between the categories "profitability for the state" and "Internalities for Public Administration", partly reflects the distinction between benefits that are quantified in monetary terms and those that are assessed on a four point qualitative scale, partly the peculiarity of the institutional context. Mareva has been devised as a methodology for eGovernment project managed and financed at the level of central state institutions.

---

[47] Reference N. 25 in table 2

[48] Reference N. 26 in table 2.

[49] Reference N. 26 in table 2.

Table 3 Conceptual Categorisation of Measurement Targets in Running Methodologies

Danish 'eGovernment Signposts' (13)	French "MAREVA" Methodology (25)	German "WiBe 4.0" Guidelines (26)	Uk "Business Case" Methodology (58) and (59)

❑ Coherent services with citizens and businesses at the centre
❑ Increase services quality and release resources
❑ Work and communicate digitally
❑ Coherent and flexible ICT infrastructure
❑ Managers ensure that organisations capitalise the vision
	❑ State profitability
	❑ Internalities for public sector
	❑ Externalities for users
	❑ Necessity
	❑ Risk
		❑ Monetisable economic efficiency
		❑ Extended economic efficiency:
		❑ Qualitative/strategic importance
		❑ External Effects
		❑ Urgency
			Benefits to Users
			❑ Monetary
			❑ Non Monetary
			   ❑ Time saving
			   ❑ Added Value
			   ❑ Urgency
			Benefits to Govt/Pub. Serv.
			❑ Direct cash benefits
			❑ Monetisable efficiency benefits
			❑ Non monetisable benefits
			Benefits to Govt/Pub. Serv.
			❑ Monetisable efficiency benefits
			❑ Non monetisable benefits

Source: Same as Table 2, the number in parenthesis refers to the list of bibliographic references reported in paragraph 2.8.

Therefore the strictly defined and monetisable efficiency gains are considered benefits for the State budget. On the other hand, to assess the full value of the projects the methodology also considers the benefits that will accrue to other public sector organisations beyond the central ministries running and financing the projects.

Continuing in this comparative overview, regardless of the different headings, we find many commonalities for what concerns impacts related to broadly defined public administration if we have a combined look at the following:

❑ The items included under the categories "Profitability for the State", "Necessity" and "Internalities for the Public Sector" in the French *Mareva* methodology;

❑ The items included under the categories "Economic Efficiency in Monetary Sense", "Urgency" and "Qualitative/Strategic Importance" in the German *WiBe 4.0* methodology;

❑ The items included under the category "Benefits to Government/public services" (and its sub-categories 'direct cash benefits', 'monetisable/ efficiency savings benefits' and 'non monetisable benefits') in the UK *Business Case* methodology;

First of all, all three approaches consider both impacts that are directly cashable or that can be rendered in monetary terms and others that cannot be rendered in monetary terms and that are assessed mostly on a qualitative four point scale. ***Therefore it is recognised that there is a quantitative and qualitative side of efficiency gains accruing to public administration as a result of eGovernment***.

Within the quantitative side of efficiency, regardless of terminological differences, the commonalities include:

❑ Gains in Full Time Equivalent of staff as a result of task elimination, reduced processing times, reduced error and need to re-work[50];

❑ Cost avoidance as a result of dematerialisation of processes (less paper and prints), economy of scales in using overhead;

❑ Better and increased revenue collection.

Within the qualitative side of efficiency the commonalities include, among others, the following:

❑ Improved operation of public administration as a result of reorganisation

❑ Improved support to higher level management and policy making processes as a result of the bottom-up flow of more timely and better information

❑ Improved working conditions for public sector employees

As a matter of fact this qualitative side can be seen not as strictly efficiency but more broadly as a efficiency-effectiveness mix.

The same comparative operation can be repeated for what concerns external impacts if we have a combined look at the following:

❑ The items included under the category "Externalities for users", in the French **Mareva** methodology;

❑ The items included under the category "External Effect", in the German **WiBe 4.0** methodology;

❑ The items included under the category "Benefits to users" (and its sub-categories 'Monetary', 'Non monetary') in the UK **Business Case** methodology;

---

[50] These are direct cash benefits if the redundant staff will be removed from the budget or opportunity benefits given a monetary value in terms of the new activities that can be undertaken due to productivity gains.

The three methodologies converge in identifying three basic categories:

- ❑ Direct cash saving (avoidance of postage and travel costs)
- ❑ Time saved that can be measured in monetary terms (particularly relevant in quantitative terms for businesses)
- ❑ Qualitative added value to be measured indirectly by assigning a value to the new functionalities/opportunities provided online or directly through users satisfaction survey

On the other hand, if we consider a different type of external effects, namely in terms of governance, we find more indication in the UK **Business Case** methodology than in the French and German ones.

On the other hand, the Danish **eGovernment Signposts** methodology[51] does differ substantially from the previous three cases considered for the simple reason that its objectives are different. Indeed this is not a business case methodology but a Key Performance Indicators (KPI) template measuring mostly in volume or qualitatively the immediate outputs of eGovernment projects rather than impacts. Moreover, non monetary quantification is attempted. Despite such difference, still some element of convergence can be identified. First, the category "increase service quality and release resources" include items that can be compared to those identified above as common to the French, German and UK case. Second the KPI "Work and communicate digitally" for public agency can be seen as similar to the impact of improved operational efficiency.

The three non EU cases (Australia, Canada, and USA), whose summary tables can also be found in next paragraph, despite differences, includes most of the elements identified as commonalities of the EU cases and in this way provide a further international validation.

Finally, as anticipated, we discuss separately the new methodology very recently released also in English by the Dutch Ministry of Interior and Kingdom Relations in order to measure and monitor how eGovernment can reduce the administrative burden for citizens and business by avoiding to ask for the same information twice. This methodology, presented also at eGEP final Conference of 8 February 2006 in Vienna, is called *Monitor- Multiple use of information[52].*

Monitor, has been developed to overcome the shortcomings of the the traditional supply side benchmarking carried out annually for the EU Commission by CapGemini and to move toward the measurement of impacts. Monitor is perfectly aligned with the current two general policy priorities (thus not strictly limited to eGovernment), which are: 1) reduce the administrative burden imposed on citizens and businesses, 2) improve public services delivery.

Since, the reduction of administrative burden is achieved by decreasing the information requested by government organizations from citizens and businesses, Monitor's primary goal is to assess the amount of information is requested to the two constituencies and how it changes over time, and to what extent the reduction in the amount of information requested is positively influenced by the delivery of online public services and/or by traditional ICT enabled face-to-face delivery.

A set of 120 public services, that are considered as the target to potentially see a decline in the amount of information requested, will be monitored annually. The baseline measurement should be completed by the end of 2006 setting the amount of information requested at time t_0 and from the following years the relative changes will be recorded.

---

[51] Reference N. 13 in table 2 and in Annex A.

[52] Reference # 19 of Table 2.

2.6. Summary Tables of Selected Measurements

Table 4 Danish eGovernment Signposts (Reference 13 in Annex A)

Coherent services with citizens and businesses at the centre	Increase services quality and release resources	Work and communicate digitally	Coherent and flexible ICT infrastructure	Managers ensure that organisations capitalise the vision
☐ % of the population using public sector's digital services ☐ % of businesses using public sector's digital services ☐ % of documents public authorities receive digitally from businesses ☐ % of documents public authorities receive digitally from citizens ☐ Use satisfaction with public sector's digital services	☐ % of resources released ☐ Quality of services improvements	☐ % of documents public authorities receive digitally from other public authorities ☐ % of public authorities that can communicate securely with other public authorities using the digital channel ☐ % of public authorities using electronic case management ☐ % of public authorities purchasing digitally using digital invoicing	☐ % of public authorities indicating lack of common solutions as a significant obstacle ☐ % of public authorities indicating lack of common standards as a significant obstacle ☐ % of public authorities indicating lack of suitably adapted legislation as a significant obstacle ☐ % of public authorities having an IT strategy addressing service levels, security and infrastructure issues ☐ Number of digital signatures certificates distributed	☐ % of public authorities indicating lack of political will as a significant obstacle ☐ % of public authorities indicating lack of allocation of resources as a significant obstacle ☐ % of public authorities indicating lack of common solutions as a significant obstacle ☐ % of digital project producing a simplification of working practices

Table 5 French Mareva Methodology (Reference 24 in Annex A)

Profitability for the State	Internalities for Public Administration	Externalities for users	Necessity of the project	Risk of the project
Productivity gain: more FTE ☐ Tasks elimination ☐ Ergonomics improvement ☐ Faster search: database *Efficiency gains:* ☐ Reduction of errors ☐ Optimised receipt of documents ☐ Improved decision-making *Accruing economies:* ☐ Avoided costs ☐ Economies of scale *Faster revenue collection* *Increased revenues*	*Better work place for PS employees:* ☐ Job content improvement ☐ Working conditions improvement *Improved efficiency of public services:* ☐ Support re-organisation ☐ Improved planning ☐ Improved and faster decision-making ☐ Elimination of paper archives *Support to decentralisation:* ☐ Empowerment of local comm. ☐ Mutualised infrastructures, for communities	*Quality improvements:* ☐ Simpler services ☐ Personalisation ☐ New integrated services ☐ Multichannel delivery *Information society promotion:* ☐ Benefits for work ☐ Benefits for civic life ☐ Benefits ICT skills ☐ Benefits of groups at risk ☐ Benefits for social cohesion ☐ Benefits to democratic participation *Number of users affected* *Time/money saved*	*Necessity for Adele:* ☐ Cross infrastructures for Adele ☐ Cross project refer system *External necessity:* ☐ Respond to regulatory requirement ☐ Respond to political obligation *Public service efficiency necessity:* ☐ Avoid other expenses ☐ Simplify complex area ☐ Control/avoid risky/uncertain area	*Project Risk* *Technical Risk* *Legal Risk* *Deployment risk*

Table 6 German WiBe 4.0 Methodology (Reference 25 in Annex A)

Economic efficiency in monetary Sense	Extended Economic Efficiency (non monetary sense)		
	Qualitative/strategic importance	*External Effects*	*Urgency*
Once off develop. savings: ☐ Avoidance of cost for maintaining/upgrading old IT system *Once off revenues (sale of old system)* *Operating Savings* ☐ FTE savings produced by new work processes	*Priority of IT Measure* ☐ IT framework strategy ☐ Integration with Federal IT sys. ☐ Manufacturer independence *Increased quality of dedicated tasks:* ☐ Improved job performances ☐ Acceleration of work processes ☐ Standardised administrative work ☐ Improved image of administration *Administrative/Political level info control:* ☐ Provision of info to decision-makers and/or controllers ☐ Support to decision making / leadership tasks *Staff-related effects:* ☐ Attractiveness of working conditions ☐ Ensuring/expanding qualifications	*Urgency due to demand intensity* *User friendliness:* ☐ Uniform standardise access ☐ More understandable and reproducible services ☐ Customer support functions ☐ Timely availability of information *External economic effects:* ☐ Saved money for postage, paper, travel ☐ Saved time ☐ Avoidance of misinvestements ☐ Increased productivity for businesses due to reduced process and administrative costs *Improved quality and performance:* ☐ Follow-up effect for commercial partners, i.e. interoperability ☐ External effect of acceleration of administrative procedures ☐ Improved multi-agency cooperation ☐ Extension of services offered	*Urgency to replace old system* ☐ System continuity ☐ Logistic/capacities aspects ☐ System stability ☐ System flexibility, inter-operability *Compliance with regulatory requirements:* ☐ Laws ☐ Data protection/security ☐ Correct procedures and work processes *Public service efficiency necessity:* ☐ Avoid other expenses ☐ Simplify complex area ☐ Control/avoid risky/uncertain area

Table 7 UK Business Model Methodology (References 57 and 58 in Annex A)

Benefits to users			Benefits to Government/public service			Benefits to society/ Nation	
Monetary	Non monetary		Direct cash benefits	Monetisable / Efficiency savings benefits	Non monetisable benefits	Monetisable / Efficiency savings benefits	Non monetisable benefits
	Time saving	Value added					
☐ Avoided postage costs ☐ Avoided transport costs	*Accessibility* ☐ Time saved from single online access point *Convenience* ☐ Less time for travelling to physical locations *Faster delivery¹* ☐ pre-population of e-forms ☐ online tax return (error free)	*Functionality* ☐ Better search enquiries ☐ Immediate confirm of processing *Accessibility* ☐ Monitor, access and change data held by govt *Convenience* ☐ 24/7	☐ Greater tax collection / revenue ☐ Reduced fraud ☐ Reduced travel costs / field force expenditure ☐ Reduced publication & distribution costs ☐ Lower fines to UK government from EU / other international body ☐ Additional revenue from greater take-up / usage of commercial services / data offered (e.g. use of electoral roll data) ☐ Additional revenue from newly available services / newly charged for services ☐ Reduced need for benefits – e.g. through faster job searches	*Time savings:* ☐ Reduced processing ☐ Time saving of public servants ☐ Reduced error / re-work / complaints ☐ Reduced multiple data collections from single customers ☐ Enabled flexible working hours *Information benefits* ☐ More accurate information ☐ More info-sharing capacity *Risk benefits* ☐ Improved risk management ☐ Improved security *Future cost avoidance* ☐ Lower future costs through shared infrastructure ☐ Reduced demand for service ☐ Reduced need for government expansion *Resource efficiency* ☐ Reduced redundancy through integrated systems ☐ More effective use of existing (e and non-e) infrastructure / reduced capacity wastage	*Improved Service Delivery* ☐ Greater take-up of entitlements ☐ Improved user Satisfaction o Improved Communication ☐ Improved Reputation / increase user trust & confidence ☐ Enhanced Customer Service o Improved service consistency and equality ☐ Integrated view of customer *Enhancements to policy process* ☐ Enhanced policy alignment & outcomes ☐ Better information to facilitate policy making *Enhancements to democracy* ☐ Increased user involvement / participation / contribution *Allows more / greater / new data to be collected* *Improved health and safety standards (e.g. farms)* *Improved Security*	☐ More effective use of existing infrastructure ☐ Greater educational participation / retention / achievement ☐ Encourage socially / environmentally desirable behaviour (e.g. shift from road to public transport) ☐ Reduced regulatory burden / paperwork –> Economic development ☐ Stimulation of specific industry / sector	☐ More effective use of existing infrastructure ☐ Improved Health ☐ Greater take-up of entitlements ☐ Enhanced democracy – increased user involvement / participation / contribution ☐ Greater Fairness & equality ☐ Leadership in digital economy ☐ Increased citizen well-being

¹ Quicker and easier conduct of business with government, Reduction in employees' time spent on administrative processes. This is the equivalent of administrative burden reduction of businesses

Table 8 UK CJIT Methodology Applied to Secure e-Mail Project (Reference 56 in Annex A)

Performance Benefits	People Benefits	Financial Benefits[2]
☐ Contribution to achievement of **PSA targets** ☐ Contribution to achievement of **CJS objectives** ☐ Contribution to achieving the **Justice for all** vision	*CJO Practitioners* ☐ Improved working conditions ☐ Improve job administration ☐ Improve job accountability and flexibility *Management* ☐ Improved monitoring of performance ☐ Better communication ☐ Promotion of joined-up work with other organisation *CJP* ☐ Improved communication within CJP network ☐ Improved communication with CJO	*Efficiency*[3] ☐ Reduced staff time[4] ☐ Reduced printing, photocopying and transmission (fax, postage, courier) costs. *Effectiveness*[5] ☐ Avoidable Magistrates Court Adjournment ☐ Un-necessary Police attendance at Magistrates Court ☐ Un-necessary Police attendance at Crown Court ☐ Un-necessary non Police attendance at Magistrates Court ☐ Un-necessary non Police attendance at Crown Court ☐ Offender self harm/ harm to others ☐ Magistrates' Court - Ineffective trials ☐ Crown Court - Ineffective trials ☐ Magistrates' Court - Cracked trials ☐ Crown Court - Cracked trials ☐ Inappropriate time in custody

[2] Distinguished into 'cashable benefits' and 'opportunity value benefits'. **Cashable** = Benefits which enable current output to be delivered at lower cost. This also includes the additional costs of a policy decision that are avoided due to resource savings being achieved elsewhere (e.g. productivity savings which enable staff to be re-deployed, thereby removing the need to recruit new staff). **Opportunity value** = The value of activities that can be undertaken due to productivity improvements that would otherwise not have been undertaken or which would have been completed to a lower standard of quality.
[3] **Financial efficiency benefits** = The savings in staff time, equipment costs, etc. arising from IT-enabled business change.
[4] Time spent printing, photocopying and transmitting (fax, mail, courier) documents, leading to reduced staff administration costs (realisable by reducing recruitment and use of temps, or redistribution of resources).
[5] **Financial effectiveness benefits** = The monetary value assigned to performance benefits. They are estimated using a "Root Cause Model" which calculate how the project impact on the reduction of key problems in the Criminal Justice System.

Table 9 Australian NOIE Methodology (Reference 42 in Annex A)

Agency benefits	Consumer financial benefits	Social benefits	Contribution to broader government objectives
☐ Direct reduction of costs (advertisement, printing, staff costs) ☐ Cost reduction through improved business processes ☐ Reduced cost from economy of scale by cross-agency cooperation	☐ Lower cost of transactions for citizens ☐ Lower cost of transactions for businesses ☐ Improved business opportunities ☐ Improved job opportunities	☐ Better information and access to health opportunities ☐ Better information and access to educational opportunities ☐ Better information and access to social benefits ☐ Improved skills ☐ Better communities skills and knowledge	☐ Labour market efficiencies ☐ Better supply management ☐ Increased Transparency and accountability ☐ Increased Participation

Table 10 Canadia GOL Performance Measurement (Reference 55 in Annex A)

Categories	Indicators		
Convenience	"no wrong door" approach	Web sites easy to identify and navigate	information and services focused on user perspective
Accessibility	information and services accessible to persons with disabilities	information and services are available in both official languages	
Credibility	Accurate, authoritative, up-to-date, relevant information	Trustworthy information that makes sense to users	
Critical Mass of services	most commonly used information and services on-line with increasing depth	electronic delivery channel for all new federal services	
Security	Use of the common infrastructure	Adequate steps by departments and agencies to ensure that transactions are secure	Citizens/clients perceive that on-line services are secure
Privacy	Adequate steps to protect personal information/individual privacy on-line	Citizens/clients perceive that on-line services offer good privacy protection	
Service transformation	Rethinking of business processes & use of shared or common solutions	Inter-institutional cooperation to provide integrated service delivery	
Client take-up	Citizens/clients know what is available on-line	Take-up of e-channel increases over time	
Client satisfaction	Increased satisfaction levels through high quality services that provide clients time, effort, and cost savings relative to other delivery channels	Robust and accurate citizen/client feedback drives the improvement and evolution of services	
Efficiency	Return on investment (ROI)	cost avoidance,	operational efficiencies
Innovation	Use and demonstration of innovative Internet applications	establishment of Canada as a leader in the knowledge-based economy and society	
Overall Objective: To make Canada a Leader in the Use of Innovative ICTs as the "back-bone" for engaging citizens, and for improving the effectiveness of federal programs and their delivery			

■ = short-term outcomes

■ = medium-term outcomes

■ = end outcomes

Table 11 US GSA Methodology (Reference 29 in Annex A)

Financial benefits	Economic Development benefits	Reduced redundancy benefits	Fostering democratic principles	Improved service to citizens and other constituencies
Reduced costs of government operations: □ staffing requirements □ paperwork □ printing and mailing costs □ cycle time □ check processing □ document storage □ telephone calls □ visits to field offices Enhanced revenue collection: □ bring in revenue through convenience fees that cover the costs of conducting transactions online □ cash management savings derived from prompt payment of fines, fees and taxes, □ vendor fees that pay for the cost of online government procurement programs	Reduced administrative burden for businesses Better information and access to opportunities for businesses Online territorial marketing	Consolidation and integration of government IT system Back-office redesign and integration High quality, multi-channel, user-centric service provision to citizens	Participation Transparency Accountability	User Satisfaction Time saved Money Saved

2.7. Lessons Learnt from the state of the art review

Measuring in general the performance and output of the public sector is a challenging task ahead of most EU Member States. The difficulties derive from the lack of pricing mechanisms, from the necessity for public agency to ensure multi-constituent delivery with different goals, from the complexities of cross-agency contribution to final delivery. All these elements hinder the identification and subsequent gathering of data on a set of clear-cut, easy quantifiable and mutually exclusive indicators. Particular attention is also required to account for the quality of output by resorting to a mix of different instruments that will be discussed with specific regard to eGovernment in Section 3.

The measurement of eGovernment impacts and benefits also presents a number of challenges, in some case more acute given its novelty. In particular, as summarised by John Rimmer, Chief Executive Officer of the Australian National Office for the Information Economy (NOIE), traditional ROI investment measures do not fully account for the value from eGovernment, since many of its benefits are non-financial and intangible and contribute to a greater social value than can currently be measured[53].

Moreover, for eGovernment measurement most of the necessary data will have to be constructed and gathered from scratch, since there are very few already compiled official statistics that can be used to measure the more short term and intermediate impacts. Record keeping data, integrated with internal review, will have to be used to produce differential analysis to compare work process costs of traditional service delivery with those online delivery to quantify the efficiency gains produced by the latter. Through internal expert assessment, focus groups and surveys with users (citizens ad business) an estimate of the monetary and time savings provided to citizen and businesses through online service delivery will have to be constructed along the lines used by the new Dutch Monitor methodology. The quality of services and users' satisfaction will require the elaboration of appropriate surveys and the construction of indexes. As a result of consultation and collaboration between the central government structures in charge of national eGovernment programs and the managers of eGovernment projects qualitative point scales will have to be agreed upon to measure through self assessment the more qualitative sides of both efficiency and effectiveness.

A fairly substantive amount of work is ahead that is worth pursuing since eGovernment peculiarities offer the opportunities for break through in measurement and can eventually provide a valuable contribution to public sector measurement in general.

Despite difficulties eGEP state of the art review and the data gathered during field missions show that a lot of progress in the measurement of eGovernment impact has been made in the past three years. First there a limited but growing number of reports, studies, and methodologies addressing the issue and providing an important starting basis. Second, some EU Member States have defined measuring methodologies and are actively employed them to various projects. In France, just to mention one case, after the quite comprehensive and sophisticated **Mareva** methodology has been unveiled in March 2005, it has been already applied to 40 of the eGovernment projects foreseen in the national programme ADELE and should be applied to all other projects. In the UK, besides the impressive work done on business cases by the Cabinet Office eGovernment Unit, we had the occasion during our field mission to analyse the impressive work done by the Criminal Justice Information Technology (CJIT) in constructing and monitoring very detailed business cases for about 10 projects in a very complex extended system context with benefits measured for a wide variety of internal and external stakeholders (internal employees, prosecutors, judges, lawyers, polices, victims, witnesses, etc). In Germany the **WiBe 4.0** methodology is in full operation and being applied widely.

---

[53] Rimmer, J. "Measuring the Impact and Benefits of E-government", presentation delivered at Cisco - Public Services Summit, Stockholm, December 9, 2003 (http://www.ciscoeventreg.net/go/publicservices/documents/Measuring_the%20Impact_Benefits_of_e-Government-Cisco_Presentation_Stockholm_FINAL.ppt , accessed May 2005).

The comparative analysis illustrated in the previous paragraphs shows that, despite noticeable differences, some common grounds can be found among the currently running measurement methodologies considered. Such analysis has certainly confirmed the importance of national peculiarities, as evidence in particular by the impacts grouped as "necessity" and "urgency", respectively in the French and German methodologies. They reflect particular national compulsory and strategic objective and cannot be generalised. So it is evident that a potentially common EU measurement framework would not enter into such country specific measurement objectives. On the other hand a number of commonalities were clearly underlined. First of all, the recognition that measurement must follow a binary approach taking into account both quantitative (directly cashable or monetisable) and qualitative aspects (non monetisable) benefits. Second, regardless of terminological differences, a convergence emerge on several items that are also used in other methodologies running in countries outside the EU.

2.8. List of References to Table A.1

1. Accenture, (2004), *eGovernment Leadership: High Performance, Maximum Value*, Accenture (http://www.accenture.com/xdoc/en/industries/government/gove_egov_value.pdf, accessed February 2005).

2. Accenture, (2005) *Leadership In Customer Services: New Expectations, New Experiences*, (http://www.accenture.com/xd/xd.asp?it=enweb&xd=industries\government\insights\leadership_customerservice.xml, accessed April 2005)

3. Bartelsmann Foundation, (2001), *Balanced E-Government: E-Government - Connecting Efficient Administration and Responsive Democracy*. Bartelsmann Foundation (http://www.begix.de/en/studie/studie.pdf, accesses February 2005).

4. Birch, D. (2003). *Local eGovernment: A Survey of Local Authorities*. Office of the Deputy Prime Minister, London, (http://www.local.odpm.gov.uk/research/crosscut/rprtegov.pdf, accessed February 2005).

5. BISER (2002). *Benchmarking the Information Society: e-Europe Indicators for European Regions*.BISER Project, (http://www.biser-eu.com/resultsdoc/H%20-%20biser_overv%C9w_july_2003.pdf, accessed February 2005).

6. Booz Allen Hamilton (2002). *International e-Economy Benchmarking: The World's Most Effective Policies for the e-Economy*, Booz Allen Hamilton, London (http://www.itis.gov.se/publikationer/eng/ukreport.pdf, accessed February 2005).

7. Burgess, S. and Houghton, J. (2002). *E-government user-friendliness of websites*. The Audit Office Of New South Wales, Sydney (http://www.audit.nsw.gov.au/perfaud-rep/Websites-June2002/websites-June2002.pdf, accessed February 2005).

8. Cap Gemini - TNO (2004). *Does eGovernment pay off?* EUREXEMP- final report, final version, (http://europa.eu.int/idabc/en/document/3818/254, accessed February 2005).

9. Cap Gemini Ernst & Young (2004). *Online Availability of Public Services: How is Europe Progressing?* (Web-based Survey on Electronic Public Services: Report of the Fourth Measurement, October 2003), (http://europa.eu.int/information_society/eeurope/2005/doc/highlights/whats_new/capgemini4.pdf, accesses February 2005).

10. Cisco, (2004), *Net Impact 2004: From Connectivity to Productivity,* Cisco Systems, (http://www.netimpactstudy.com/pdf/NetImpact_04b.pdf, accessed February 2005).

11. COMNET-IT (2000). *Global Survey on e-Governance: Final Report*. UNESCO, Paris, (http://unesdoc.unesco.org/images/0012/001220/122040e.pdf, accessed February 2005).

12. Cullen, R. and Houghton, J. (2000). *Democracy Online: An Assessment of New Zealand Government Web Sites*. Government Information Quarterly, 17(3), pp. 243-267.

13. Danish Digital Task Force (DTF), (2004) *The Danish eGovernment Strategy 2004-2006: Realising The Vision*, DTF, Copenhagen, (http://e.gov.dk/uploads/media/strategy_2004_06_en_01.doc, accessed February 2005).

14. Deloitte Research (DR), (2003), *Citizen Advantage: Enhancing Economic Competitiveness Through eGovernment*, Deloitte, (http://www.deloitte.com/dtt/research/0,1015,sid%253D2230%2526cid%253D26333,00.html, accessed February 2005).

15. Deloitte Research (DR), (2003), *Cutting fat, adding muscle,* Deloitte, (http://www.deloitte.com/dtt/budget/0,2299,cid%3D25282&pre%3DY&lid%3D70,00.html, accessed February 2005).

16. DeMaio, C (ed.), (2002), *Creating A Performance Based Electronic Government,* The Performance Institute, Washington DC, (http://www.performanceweb.org/research/egovernmentreport.pdf, accessed February 2005).

17. Demchak, C.C., Friis, C. and La Porte, T.M. (2000). *Webbing Governance: National Differences in Constructing the Face of Public Organisations*, Handbook of Public Information Systems. Marcel Dekker Publishers, New York.

18. Dexter, A. and Parr, V. (2003). *Government Online: An International Perspective*, Global Summary. TNS, (http://www.legermarketing.com/documents/TenInt/031219ENG.pdf, accessed February 2005).

19. Dutch Ministry of Interior and Kingdom Relations (2006). *MONITOR. Multiple Use of Information*.

20. Dutch Ministry of Interior and Kingdom Relations (2005), *Cost Benefit Methodology for eGovernment Building Block*, in depth interviews during eGEP field mission to Den Hague (June 8 2005).

21. Dutch Ministry of Finance (2005), *Adiministrative Burden Reduction Methodology for Businesses and for Citizens*, in depth interviews and unpublished internal documents obtained during eGEP field mission to Den Hague (June 8 2005).

22. Dutta, S., Lanvin, B. and Paua, F. (2004). *The Global Information Technology Report 2003-2004: Towards an Equitable Information Society*. Oxford University Press, New York.

23. EOS Gallup Europe (2002). *Flash EuroBarometer 125 'Internet and the Public at Large'*. European Commission DG Information Society, (http://europa.eu.int/information_society/eeurope/Benchmarking/list/2002/index_en.htm, accessed February 2005).

24. Erin Research Inc., (2003), *Citizens First 3*. The Institute for Citizen Centred Service in The Institute Of Public Administration of Canada, (http://www.iccs-isac.org, accessed February 2005).

25. French Agency for the Development of Electronic Administration, (ADAE), (2005), MAREVA methodology guide: Analysis of the value of ADELE projects, unpublished internal document obtained during eGEP field mission to Paris (May 23-24 2005).

26. German Federal Ministry of the Interior, IT Department, (2004), *Economic Efficiency Assessment (WiBe) 4.0 - Recommendations on Economic Efficiency Assessments in the German Federal Administration, in Particular with Regard to the Use of Information Technology*, (http://www.kbst.bund.de/Anlage306905/English-Version-Recommendations-on-Economic-Efficiency-pdf-792-kB.pdf , accessed June 2005).

27. Foley, P. and Ghani S. - OECD - IECRC (2004). *Evaluating eGovernment: Developing methods and identifying benefits*, Leicester, (http://www.iecrc.org/businesscase, accessed February 2005).

28. Gant, J.P. and Gant, D.B. (2002). *Web portal functionality and State government e-service*. Proceedings of the 35th Annual Hawaii International Conference on System Sciences - 2002. IEEE Computer Society Press, (http://csdl.computer.org/comp/proceedings/hicss/2002/1435/05/14350123.pdf, accessed February 2005).

29. Gartner, (2003), *Traditional ROI Measures will fail in government,* (http://www3.gartner.com/DisplayDocument?doc_cd=116131, accessed February 2005*)*.

30. General Services Administration (GSA), (2003), *High Payoff in Electronic Government,* GSA, Washington, (http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentId=10293&contentType=GSA_DOCUMENT, accessed in February 2005).

31. Hart-Teeter (2003). *The New eGovernment Equation: Ease, Engagement, Privacy and Protection*.The Council for Excellence in Government, (http://www.excelgov.org/usermedia/images/uploads/PDFs/egovpoll2003.pdf, accessed February 2005).

32. IDA, (2003), *Value of Investment Method,* European Commission, Gothenburg (http://europa.eu.int/idabc/servlets/Doc?id=1596, accessed February 2005).

33. IDABC eGovernment Observatory (2005) *The impact of eGovernment on competitiveness, growth and jobs*. Background Research Paper, Brussels, (http://europa.eu.int/idabc/servlets/Doc?id=19230, accessed February 2005).

34. Kaylor, C., Deshazo, R. and Van Eck, D. (2001). *Gauging eGovernment: A report on implementing services among American cities*. Government Information Quarterly, 18(2001), str. 293-307, (http://www.psigroup.biz/resources/Gauging-eGov(GIQ).pdf, accessed February 2005).

35. KEeLAN (2002). *Web-scanning of local authorities front office on the web: Report on use of internet by local governments and best practices* (web-scanning results). Projekt KEeLAN,

(http://www.keelan.ie/uploads/documents/egovernment/Benchmark.Report.pdf, accessed February 2005).

36. Millard, J., Svava Iversen, J., Kubiceck, H., Westholm, H. and Cimander R., (2004) *Reorganisation of government back-offices for better electronic public services,* Report to the European Commission, (http://www.europa.eu.int/idabc/en/document/3587/5713, accessed Februray 2005).

37. Momentum (2000). *Benchmarking the eGovernment Revolution: Year 2000 Report on Citizen and Business Demand*. Momentum Research Group. (http://www.momentumresearchgroup.com/pdf/eGov_report.pdf, accessed February 2005).

38. Muylle, S., Moenaert, R. and Despontin, M. (2004). *The conceptualization and empirical validation web site user satisfaction*. Information & Management, 41(2004), pp. 543-560.

39. NACO (2000). *2000 E-Government Survey. National Association of Counties (NACO),*. (http://www.naco.org/ContentManagement/ContentDisplay.cfm?ContentID=7338, accessed February 2005).

40. NAO (2002). *Government on the Web II: Report by the Comptroller and Auditor General HC 764, apr. 2002.* The Stationery Office, London, (http://www.nao.org.uk/publications/nao_reports/01-02/0102764.pdf, accessed February 2005).

41. Navarro, C.C. and Canavante, A.M. (2004). *The World Wide Web as an Information System in Spain's Regional Administrations (1997-2000)*. Government Information Quarterly.

42. NOIE (2001). *Government Online: online survey – round 4.*, The National Office for the Information Economy, (http://www.noie.gov.au/publications/NOIE/online_survey/r4report.pdf, accessed February 2005).

43. NOIE and DMR (2003). *eGovernment Benefits Study*. Commonwealth of Australia, (http://www.agimo.gov.au/__data/assets/file/16032/benefits.pdf, accessed February 2005).

44. Nordic Council of Ministers (2003). *ICT Usage in the Public Sector - a Nordic Model Questionnaire*. Statistics Danmark.

45. PLS RAMBOLL and EWORX (2004). *Top of the Web Survey on Quality and Usage of Public e-Services*, European Commission DG Information Society and Media (http://europa.eu.int/information_society/activities/egovernment_research/doc/top_of_the_web_report_2004.pdf, accessed February 2005).

46. PLS RAMBOLL and EWORX (2003). *Top of the Web Survey on Quality and Usage of Public e-Services*. European Commission DG Information Society, (http://www.topoftheweb.net, accessed October 2004).

47. PTI and ICMA (2001). *Is Your Government Plugged In? Highlights of the PTI/ICMA 2000 Electronic Government Survey*. Public Technology Inc. in International City/County Management Association, (http://www.pti.org/docs/E-Gov2000.pdf, accessed February 2005).

48. REGIONAL-IST (2003). *e/Government and e/Business Indicators: Selection of Key Indicators in Accordance With eEurope*. Projekt REGIONAL-IST in European Communities, (http://www.empirica.biz/sibis/files/WP4_D4-3-1_eEurope_NAS.pdf, accessed February 2005).

49. SIBIS (2003). SIBIS Pocket Book 2002/03: *Measuring Information Society in the EU, the EU Accession Countries, Switzerland and the US*. SIBIS project and European Communities, (http://www.empirica.biz/sibis/publications/pocketbook.htm, accessed February 2005).

50. Smith, A.G. (2001). *Applying evaluation criteria to New Zealand government websites*. International Journal of Information Management, 21(2001), str. 137-149.

51. SOCITIM (2004). *Better Connected 2004*. SOCITIM. (http://www.solace.org.uk/downloads/socitim.htm, accessed February 2005).

52. Stowers, G. (2004) *Measuring the Performance of E-Government*, IBM Center for the Business of Government, S. Francisco (http://www.businessofgovernment.org/pdfs/8493_Stowers_Report.pdf, accessed February 2005).

53. Strover, S. and Straubhaar, J. (2000). *E-Government Services and Computer and Internet Use in Texas*. Telecommunications and Information Policy Institute, University of Texas, (http://www.dir.state.tx.us/egov, accessed February 2005).

54. The Henley Center and MORI (2000). *eGovernment Ready or Not?* BT eGovernment. (http://www.mori.com/polls/2000/e-govt.shtml, accessed February 2005).

55. TietoEnator Trigon AB (2001). *Benchmarking of electronic service delivery in the public sector, Executive report, 2001*. European Commission, IDA Programme, (http://europa.eu.int/idabc/en/document/3548/5663, accessed February 2005).

56. Treasury Board of Canada Secretariat (TBS), (2004), *Performance Measurement for the Government On-Line Initiative*, TBS, Ottawa, (http://www.cio-dpi.gc.ca/si-as/performance/performance_e.pdf, accessed February 2005).

57. UK Criminal Justice Information Technology,(CJIT), (2005), *CJS IT Benefits Evidence & Revised Forecast Q4 2004/2005*, unpublished internal document obtained during eGEP field mission to London (May 9-10 2005).

58. UK Cabinet Office eGovernment Unit,(eGU), (2005), *Business Case Model Template*, unpublished internal document obtained during eGEP field mission to London (May 9-10 2005).

59. UK Office for Government Commerce (OGC), (2003), *Measuring the Expected Benefits of E-Government*, OGC, London, (http://www.ogc.gov.uk/sdtoolkit/workbooks/businesscase/HMT%20Guidelines%20Version%201.4.pdf, accessed February 2005).

60. United Nations Public Administration Network (UNPAN), (2003). *UN Global E-government Survey*. UN. (http://unpan1.un.org/intradoc/groups/public/documents/un/unpan016066.pdf, accessed February 2005).

61. US Chief Information Office (2002) *Value Measuring Methodology. How to Guide*, CIO, Washington DC, (http://www.cio.gov/documents/ValueMeasuring_Methodology_HowToGuide_Oct_2002.pdf, accessed February 2005).

62. West, D.M. (2003a). *Global E-Government 2003*. Center for Public Policy, Brown University Providence. (http://www.InsidePolitics.org).

63. West, D.M. (2003b). *State and Federal E-Government in the United States.* Brown University, Providence. (http://www.insidepolitics.org/egovt01us.html.).

64. West, D.M. (2003c). *Urban E-Government: An Assessment of City Government Websites.* Brown University, Providence. (http://www.insidepolitics.org/egovt01city.html).

3.   Indicators Data Sources

3.1. General Overview

As discussed, for the measurement of eGovernment impacts practically there are no ready made compiled statistics to be used. For the indicators included in the measurement framework the corresponding data will have to be gathered and in some cases 'constructed' from a variety of sources. By way of introducing this brief overview of possible sources, it is interesting to report what type of data were found to be used by US jurisdictions in their assessment of the impacts of eGovernment:

> E-government methodologies use data collected through surveys and web monitoring software and administrative data from records. The methodologies themselves include traditional random telephone surveys, web-based pop-up surveys or page-based clickable "opt-in" web surveys, cost-benefit analyses, the basic gathering of performance or benchmarking data, and the e-government specific web tracking methodologies [54].

Our in depth analysis of measurement methodologies currently running in EU Member States and the case studies developed to a large extent confirm the synthesis presented in the above passage. More precisely we can reasonably conclude that the possible sources of data are the following:

❑ Data from administrative records, for instance on:
   ✓ Personnel costs by category;
   ✓ Standard processing time for an end-to-end traditional service provision;
   ✓ Other non personnel costs for traditional service delivery (paper, printing, postage, travel);

---

[54] Stowers, G. *Measuring the Performance of E-Government*, IBM Center for the Business of Government, 2004.(http://www.businessofgovernment.org/pdfs/8493_Stowers_Report.pdf, accessed October 2004), p. 10.

- ✓ Full start up and operational costs of eGovernment applications;
- ❑ Web metrics, for instance on:
  - ✓ Number of hits or user contact sessions;
  - ✓ Number of document downloads;
  - ✓ Amount of time users spend on a site;
  - ✓ Number of transactions completed;
  - ✓ web analytics (click streams, repeat use, cross-usage);
- ❑ Users satisfaction data, for instance from:
  - ✓ Traditional random sample surveys;
  - ✓ pop-up surveys;
  - ✓ qualitative focus group work;
  - ✓ one-on-one accompanied browsing (usability data);
- ❑ Third party assessment of only services functional quality and of level of transparency as determined by the amount of information about the internal functioning of a public administration that is available online and/or by the existence of online case tracking functionalitis
- ❑ Assessment of qualitative impacts internal to public administrations, for instance from:
  - ✓ External Expert Audit;
  - ✓ Internal Assessment through surveys of relevant managers and supervisors;
  - ✓ Employees' Surveys;
- ❑ Official statistics on parameters needed to calculate opportunity values produced for third parties (citizens, businesses, other public organisations):

These sources of data in most cases do not directly provide a measure of impacts, but require further elaboration to construct the relevant data.

First of all, the measurement of the most tangible financial gains usually requires a differential analysis of material and process costs (in terms of time) between a 'zero-measurement' base line and the operations of a given eGovernment service. In most of the reviewed cases this is done through a comparison of material and process costs entailed in the traditional provision of service with Internet based material and process costs.

Exhibit 6 below illustrates the basic steps and source of data necessary to calculate the gains of reduced process/transaction costs. This calculation process is based on the concept of transaction understood extensively in two ways. First, because the calculation of the cost of transaction actually entails a full analysis and computation of the process costs entailed for its realisation on the side of the public administration. Second, because the term 'transaction' is intended broadly to include all forms of provision of services by public administrations (including thus also one ways flows) and not only transaction in a strict sense (bi-directional exchange, usually with a transfer of money).

The difference between the offline and online overall costs of transactions, if positive, gives the monetary value of the efficiency gains in terms of "Full Time Equivalent of Staff". They can result from task elimination, reduced processing times, reduced error and need to re-work, or from any combination of them. Clearly the monetisation of this gain is produced using time calculations and the wage of the different categories of employees involved in the processes.

The value thus calculated is a direct cash benefit if the staff made redundant is removed from the budget of the public agency. Otherwise is an opportunity value and gives a measure of new/alternative activities that can be undertaken as a result of the time freed. In the middle term this same benefit can become an avoided cost in terms of the decrease of the need to hire new staff. In short this type of calculation looks at savings of personnel costs or gains in FTE in conjunction with the use of the eGovernment applications and thus requires the analysis of all personnel costs incurred as a result the provision of a service only through the old offline process and which becomes partially obsolete due to the introduction of the online

based process. This means that the entire yearly working time related, in all business units, to the old process must be determined.

The calculation of cashable benefits in term of avoided material costs is more intuitive and straightforward as illustrated in the exemplificative Exhibit 7 below on the calculation of the dematerialisation gains potentially yielded by public e-procurement applications.

Also quite simple is the calculation of benefits in terms of the cost avoided as a result of economy of scale in the use of overall capacity, and particularly with regard to the use of ICT for horizontal infrastructure eGovernment project whose impacts trickle down to several public administrations. For instance, a centrally developed application infrastructure that can serve 20 public agencies across (horizontally) or an entire vertical public administration sector including 50 entities saves the public budget the costs of purchasing, setting up and operating 20 or 50 separate applications. Using widely available average market prices for such products / services the avoided costs can be easily calculated.

Exhibit 6 Calculating Process/Transaction Efficiency Gains
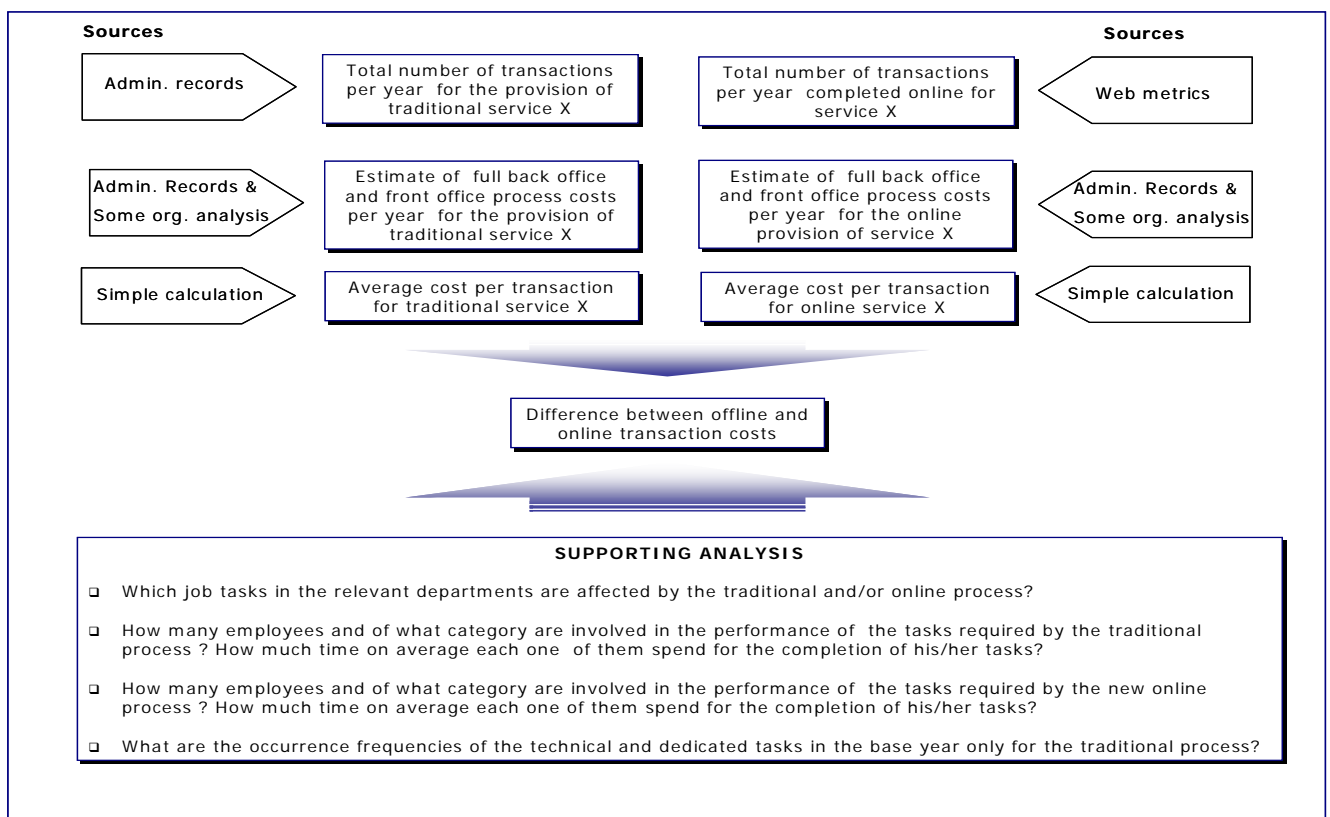
Exhibit 7 Measuring Dematerialisation Gains: Public eProcurement
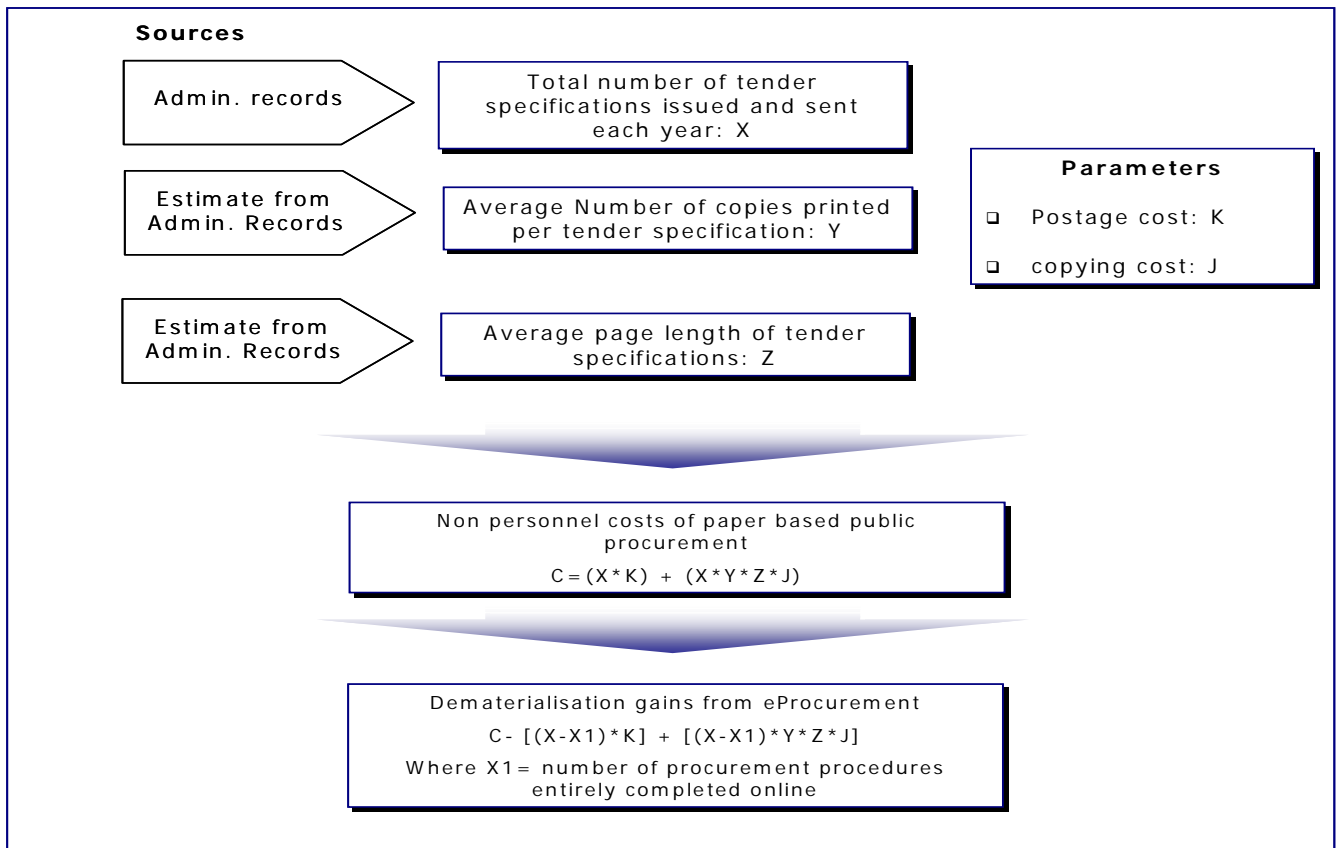
Despite national differences, most governments for the sake of public interests require citizens and business to refrain from certain conduct and to enact others, this amount to so called 'content obligations'. Governments also requires citizens and businesses to provide information on actions and conduct that amount to 'information obligations'. Administrative burden is defined only in terms of the 'information obligations' as follows: ***the costs for citizens and businesses of complying with information obligations deriving by legislation and regulation imposed by the government.***

Using the Standard Cost Model the indicator of the total Administrative Burden (AB) can be calculated as follows:

$$AB = T*Q*F*P$$

Where:

T= time spent on information obligations;

Q= number of citizens / businesses;

F = yearly frequency of complying with information obligations

P = Tariff per hour (only for businesses)

While the quantification in monetary terms for businesses is quite straightforward and can use standard market data on wages for the type of employees dealing with information obligation within businesses, for citizens is more problematic since it is difficult to come up with an average monetary value of the time saved that would fit all the possible different social positions. Therefore the AB burden for citizens is usually expressed in terms of the total amount of hours saved, integrated with an estimation of the avoided cost of travel and postage.

Naturally the calculation of the AB and of its reduction due to the introduction of online services require some analysis and estimations. At the level of a single public agencies or of a vertical public administration sector a base line of AB must be established. This requires:

1. The identification of all type of information obligations imposed on citizens / businesses

2. An estimation of the time and other costs that citizens / businesses bear to comply with them (this can be done on the basis of internal analysis possibly integrated with focus groups and/or surveys with users)

3. An estimation of the time the administration takes to process the information and return to citizens / businesses the need certification/permits/ license (where this applies)

4. An estimation of the occurrence of errors that will require citizens / businesses to spend more time complying with the obligations

The reduction impact yielded by the online handling of such information obligations will then be calculated as a reduction of the time and costs needed for items 2-4.

In this calculation it is assumed that, regardless of whether or not the information obligations have been simplified by changes in the legislation and regulation, the use of the digital channels produces time savings and reduction of material costs as a result of its peculiarities. Among the possible contribution of AB reduction typically associated to online delivery we can cite, among others, the following:

❑ Online pre-populated forms reducing the time of complying with information obligations and drastically eliminating errors and the subsequent need of re-work;

❑ Convenience, costs avoided (travel and postage) and time saved avoiding standing in line;

❑ On-off provision of data;

❑ Electronic authentication.

So far in the discussion the sources of data considered have been mainly internal administrative records complemented by analysis and estimation and external official statistics for standard market parameters to be used in such estimation. Actually web metrics have also been cited as the source of data on the number of transaction completed online.

Since web metrics and users satisfaction data will be discussed in next paragraph dedicated to the issue of perceived quality and users satisfaction, in the reminding of this paragraph we briefly consider the qualitative based measurement of impacts that are internal to the functioning of public administration and that cannot be rendered in any monetary and/or quantitative way. These are impacts, however, that are extremely important and that are worth being accounted for, even if only in qualitative terms.

The best way to introduce this source of measurement is to give an example of how this is done in the German measurement methodology WiBe 4.0[55]. This methodology foresees one quantitative dimension defined "Economic efficiency in monetary sense" where benefits are quantified in ways similar to those describe earlier for FTE gains and avoided costs. In addition there are three other areas of benefits ("Urgency", "Qualitative and Strategic Importance", "External Effects"), all of which are assessed using a qualitative scale.

Exhibit 8 below report from WiBe 4.0 the example for the item "improved job performance" included under the category of "Qualitative / Strategic Importance". This sort of assessment is based on a qualitative scale and is applied to all items for all the three categories mentioned above that are measured only qualitatively.

The type of scale used has been studied by the eGovernment Federal Agency, in collaboration with the most important actors involved in the implementation of eGovernment services. The assessment using this scale is conducted internally by managers and experts involved in each

---

[55] See reference # 26 of Table 2 in paragraph 2.4.

project using the methodological guide provided by the Federal Agency for eGovernment, an introductory explanation and/or definition of the criterion is followed by a table with the scale which assigns a score for implementation. This process, however, also requires a discussion between project managers and representatives of the Federal Agency for eGovernment, especially for the assignment of weights to the score of each item. The overall qualitative assessment of the impact of a project is determined by the project managers with the collaboration of the Federal Agency for eGovernment and is carried out in two separate steps as follows:

1. Justification of the score on the scale of 10 awarded to every single criterion. A criterion which is not relevant for the project receives "0" points;

2. Ponderation of the intermediate result by multiplying the score of each criterion by its weight,

A similar solution is adopted also in the French Mareva methodology for a number of qualitative impacts internal to the public sector or relevant for the system as a whole, as well as in the Canadian Government Online Methodology (GOL) where a number of intermediate outcomes are measure through internal qualitative self-assessment[56].

Exhibit 8 Qualitative Impact Assessment: German WiBe 4.0 Methodology

This criterion evaluates the qualitative effects related to work, i.e. whether the quality of the work process as such and hence also of the product is improved. Qualitative improvements to be assessed can, for example, be improved transparency of administrative work, simplified internal workflows, as well as elimination of redundant and routine operations. Other examples include more up-to-date, less redundant and more complete information sources as well as a lower error rate thanks to interactive help and user support functions. IT measures can also contribute towards higher quality standards (for example, quality management according to the ISO 9001 standard or according to the EFQM model) of complex processes.

When evaluating this criterion, the effects should be differentiated in terms of formal improvement (the workflow improves itself) and material improvement (the result of the workflow is improved).

4.4.2.1   Improved job performance

0	2	4	6	8	10
Irrelevant or no positive effects, respectively.	Minor improvement of the formal work process.	Medium improvement with regard to the formal work process.	Significant improvement of the formal work process.	Significant improvement of the material work result.	Significant improvement of the formal work process and of the material work result.

Source: Federal Ministry of the Interior (BMI), Department IT2 (KBSt) (2004)*, Economic Efficiency Assessment (WiBe) 4.0, op. cit.*, p. 55.

Naturally in this approach a number of issues remain blurred and open to different choices, depending on both political priorities and technical perspectives, such as for instance the following:

---

[56] Treasury Board of Canada Secretariat (TBS), (2004), *Performance Measurement for the Government On-Line Initiative*, TBS, Ottawa, (http://www.cio-dpi.gc.ca/si-as/performance/performance_e.pdf, accessed February 2005), pp. 19-63.

- ❑ Which impacts cannot be measured quantitatively and must be assessed qualitatively;
- ❑ Which potential qualitative impacts are worth assessing;
- ❑ The choice of the qualitative scale used;
- ❑ The process of filling the qualitative scale (through external auditors, or through internal personnel, and this case how extensive should be the panel of experts to participate in the assessment).

To a large extent these choices will depend on national priorities, as well as on feasibility and economic considerations.

3.2. Some Considerations on Service Quality and Users Satisfaction

The basic and straightforward source of difficulty in measuring public outputs resides in the lack of market prices and mechanisms that can be used to valuate them. Actually it is not only a problem of giving a value to an output, but also of understanding how the output is received and evaluated by the end users, that is to say of including in the measurement also the quality dimension. As reported earlier, the cited Eurostat *Handbook* proposes three ways to adjust for quality[57]:

1. Direct measurement of the quality of the output through a survey of the general public on the quality of public services;
2. Using the quality of the inputs and assuming that the quality change of the inputs leads automatically to a quality change of the output;
3. Using outcomes to measure the quality of the output.

The second alternative seems practical but is in the end tautological since its basic assumption cannot be verified without actually measuring the quality of the output. Therefore we discard it without further analysis.

The first and third alternatives are both viable and actually used with respect to eGovernment, although in both cases there are some complexities / limitations. Users surveys, as illustrated later, have to take into account the effects of expectations and preconceived judgments on public sectors on the side of users, as well as addressing measurement errors related to sampling techniques. The use of the outcomes, that is the produced benefits (i.e. time and cost saved), as objective indicators of improved quality rest on the assumption that such benefits automatically translate into users satisfaction and risk to overlook other more intangible sides of quality that users might consider important.

3.2.1. Selective overview

Directgov. It seems to us interesting to start this overview with one of the case studies we have been able to observe in details as a result of the interviews and material gathered in the course of eGEP UK field mission. The case is that of the new UK citizen portal ***Directgov***[58]. This new portal is based on an innovative approach to the provision of services based on a strong and thorough process of targetisation (parents, over 50's, disabled people, carers, 'learners', motorists, etc) and since its launch has achieved outstanding results in term of usage. Here, however, what interests us is not so much the results achieved but rather the approach used to measure users perceived quality and satisfaction. Directgov has gone through different stages of research on users acceptance and satisfaction and has used a number of tools such as:

- ❑ qualitative focus group work;
- ❑ Omnibus surveys (without construction of composite indexes);
- ❑ pop-up users surveys
- ❑ one-on-one accompanied browsing (usability research);

---

[57] Eurostat, *Handbook of Price and Volume…, op. cit.*, p. 34.

[58] The information here discussed comes from interviews conducted in London and on internal unpublished report obtained from ***Directgov*** staff.

❑   Web analytics tool to monitor access and usage.

Interviewees have come from a representative spread of the e-enabled and unconnected population, including all specific target groups (parents, over 50's, disabled people, carers, 'learners' and motorists, etc).

One interesting aspect gained in the course of the interviews is that Directgov is increasingly using web analytics as an indirect measure of users satisfaction on the basis of the assumption that repeated usage and especially cross-usage (equivalent of cross-selling in a market context)[59], namely one users that after using service X come back and use service Y, indicate the equivalent of what in a market context is considered the customer loyalty and fidelisation springing from the quality of the services provided[60]. To this we would add also another important aspect often overlooked: the precise time of the day and/or day of the week in which services are used is clearly an indication of the flexibility / convenience benefit provided to users. If a fair amount of information is downloaded and of transactional services completed outside regular office hours (at night, during week-ends, during holiday) this testifies that time starved users appreciate the possibility to search for needed information or to comply with information obligations flexibly when is most convenient for them, 24 hours a day, 7 days a week for 365 day a year (24/7/365).

Indeed web tracking methodologies can provide very rich data on traffic patterns, users behaviour, and site performance by using so called "clickstream" (data left by web users), visitor log files, and server data. A combined use of such data can produce the following kinds of individual-level data:

❑   Number of visitors that see a particular page
❑   Percent of visitors who click on a particular link
❑   Where visitors click next
❑   Time required to load pages (slow page delivery)
❑   Number of repeat visitors
❑   Number of unique visitors
❑   Average time spent on any one page
❑   Exit rate, or how fast users move off site

The draw back is that, depending on national legislation on privacy, some of this data might not be collected if eGovernment website cannot use "cookies" and would therefore be able to use only their own server data, which prevents the identification of individual level data. However, server-level data would still provide information about time on site, error rates, or time to load pages.

Accenture latest eGovernment survey. The latest edition of the Accenture eGovernment study consider in depth leadership in customer service and issues related to customer satisfaction and expectation[61]. The approach followed integrates an assessment carried out by actual experimentation of eGovernment services by Accenture research teams in all the countries surveyed with a direct surveys of users. As reported in the methodological Annex:

> Behaving as citizens and businesses, Accenture researchers in 22 selected countries attempted to fulfil service needs that typically might be provided by a national government. They began by assessing the websites of national government agencies to determine the breadth of services and the level at which citizens could interact with government. The next step involved evaluating other capabilities, such as the cohesiveness across multiple

---

[59] Naturally this concerns elective services, and not information obligations imposed by government for which repeated usage is a necessity and not an indication of satisfaction with the service.

[60] This approach was illustrated by Mr. Will Stengel of the Directgov team during interview conducted in London on May 9. The same issue was also discussed with Mr. Tony Clayton, economist at the UK National Statistics Office, who confirmed the validity of data on usage as an indication of users satisfaction.

[61] Accenture, *Leadership In Customer Services: New Expectations, New Experiences*, April 2005.

channels and the extent and sophistication of governments' efforts at outreach and education related to their services. The research was carried out between January 3, 2005, and January 17, 2005[62].

More specifically the dimension assessed through direct experimentation were four:

❑ **A citizen-centered perspective**: A "citizens-first" point of view, in which all the necessary information is organized around the citizen. Government frontline agents providing the service have access to this information, and use it to tailor interactions to each citizen's needs and circumstances;

❑ **Cohesive multi-channel service**: Service that is fast, efficient and hassle free, regardless of thechosen channel, and in which interactions that involve more than one channel (for example, mail and telephone) are properly coordinated;

❑ **Fluid cross-government service**: Government agencies working together at the local, regional and national levels to provide integrated services to the citizen;

❑ **Proactive communications and education**: Active outreach and communication, which ensures citizens are well-informed about government services and provided with information and education designed to increase adoption of government services through appropriate channels, improve ease of use and strengthen citizens' ability to comply with what is expected of them.

This assessment was integrated by a users survey conducted based on representative of 400 adults aged 18 and over for each of the 22 countries[63]. The questions asked in these surveys included, among others, the following topics:

❑ Ease of use

❑ On government capacity to recall data already entered

❑ Comparison of citizens evaluation of the easiness of channels (telephone, internet, in person, post/mail);

❑ General assessment of eGovernment services (Excellent, good, fair, poor);

❑ Level of citizens' comfort with information sharing;

❑ Perceived usefulness of various possible services.

Top of the web surveys. In 2003[64] and 2004[65] PLS RAMBOLL Management A/Sand EWORX S.A realised by for the DG Information Society of the EU Commission the two *Top of the Web Surveys* on users of public websites providing public e-services to investigate the perceived quality and users satisfaction. They have both been conducted using the pop-up survey methodology ("pop-up" questionnaire activated by the users via link on the website).

In the course of the 2004 survey a total of 48,228 users (9,896 citizens and 28,332 businesses) answered the questionnaire and represents the largest survey conducted so far, on how the European users perceive public e-services quality. Its limitation derives from the fact that it is not based on a representative sample, on the other hand the main findings seem robust and replicable and are consistent with the results of the first 2003 survey[66]. Moreover, it gathers evaluation based on actually experience and should therefore avoid the expectations effect.

---

[62] *Ibid.*, p. 100.

[63] *Ibid.*, p. 104.

[64] PLS RAMBOLL and EWORX (2003). Top of the Web Survey on Quality and Usage of Public e-Services. European Commission DG Information Society, (http://www.topoftheweb.net, accessed October 2004).

[65] PLS RAMBOLL and EWORX (2004). Top of the Web Survey on Quality and Usage of Public e-Services, European Commission DG Information Society and Media (http://europa.eu.int/information_society/activities/egovernment_research/doc/top_of_the_web_report_2004.pdf, accessed February 2005).

[66] *Top of the Web (2004), Op. Cit.*

The objectives of these surveys were to:

- Identify which online public services are currently used by citizens/businesses;
- Analyse the level of quality of on-line public services;
- Gather information about to what extent public services are being used (usage) and whether customer expectations about services' quality are being met.

Three are the issues, reflecting the perceived quality of an online service, measured in the survey:

- Overall evaluation
- Usability
- Perceived benefits

Usability, conceived as the ease with which visitors are able to find and to use a web site, is given great emphasis in the study as *"usability is about effectiveness (the degree to which users are able to complete tasks and achieve the intended goal), efficiency (the resources required by the users to complete tasks and goals) and user satisfaction"[67]*. Five are the usability criteria measured in this survey:

- Is the website easy to find?
- Is the e-service easy to find?
- Is the e-service easy to use?
- Is the language understandable?
- Is the speed of the website satisfactory?

An odds-ratio is calculated for users evaluation, to take a closer look at what satisfied users have experienced. This ratio means how satisfied is the user if his/her expectations are met. The results from survey point out that the easiness of use public e-services is the most important factor and it is related to a 8.6 odds-ratio. This means that it is 8.6 times more likely that the user is satisfied if this aspect is fulfilled, than if it is not.

The benefits measured are:

- Saved time
- Gained flexibility
- Getting more and better information
- Receive better help
- Getting a faster case/reply
- Getting better control over the process
- Save money

Citizens and Business rank these benefits in the same order and for both category of users the most important ones are saved time and gained flexibility, that together represent the value of "*going on-line instead in-line*"[68].

Canadian Approach. The government of Canada has been for years at the forefront of eGovernment development and, building on the understanding developed on such experience, has adopted a broad service vision that focuses on client-centric delivery reflected in a performance measurement framework that encompasses three main outcomes:

- Citizen /client-centred government, including:
  - ✓ Convenience

---

[67] "Top of the Web", (2003) *Op. Cit.* pp.14-15.

[68] *Top of the Web*, *Op. Cit.* pp.23.

- ✓ Accessibility
- ✓ Credibility
- ❑ Better more responsive service, including:
  - ✓ Critical mass of services
  - ✓ Take-up
  - ✓ Service Transformation
  - ✓ Citizen/ Client satisfaction
- ❑ capacity for online delivery, including:
  - ✓ Security
  - ✓ Privacy
  - ✓ Efficiency
  - ✓ Innovation

While citizen / client satisfaction is only one of the item among those listed above, it is evident that the overall framework is very much oriented toward dimensions relevant for users and for the quality of services. Indeed Canada has developed a Common Measurement Tool (CMT) for measuring client satisfaction[69]. The CMT provides public organizations with a set of standard questions and standard measurement scales for use in surveying their clients. It is a comprehensive collection of potential survey questions that an organization may select from, to custom design a client satisfaction survey that meets its information requirements. The use of standard questions allows the organization to benchmark progress over time and, since questions are standard, organizations can compare results with other organizations within the same business line. To ensure this ability to benchmark performance, several core questions are required for inclusion in all surveys. Designed to provide client feedback to any public organization and ensure that all aspects of client service are considered, the CMT is conceived around five key elements:

- ❑ Client expectations;
- ❑ Perceptions of the service experience;
- ❑ Satisfaction levels;
- ❑ Levels of importance;
- ❑ Priorities for service improvements[70].

American Customer Satisfaction Index. the American Customer Satisfaction Index (ACSI), is a well consolidated private application developed in partnership by the University of Michigan School of Business and the American Society for Quality. Originally developed to tracks annual trends in customer satisfaction in the private sector, it has been then adapted to the public sector and since 2002 applied also to eGovernment.

As illustrated in Exhibit 9 below, the ACSI original model developed for the private sector model is a set of causal equations that link customer expectations, perceived quality, and perceived value to customer satisfaction (ACSI). In turn, satisfaction is linked to consequences as defined by customer complaints and customer loyalty – measured by price tolerance and customer retention.

---

[69] A variety of sources are used to measure users satisfaction that include: a) Omnibus surveys (e.g., EKOS' Information Highway studies, Ipsos-Reid research, NFO) b) Interactive surveys (Citizens First and Taking Care of Business studies, EKOS' Information Highway studies, Ipsos-Reid research, NFO Interactive surveys, TBS GOL Internet Research Panel) as reported in Treasury Board of Canada Secretariat (TBS), (2004), *Performance Measurement, op. cit.,* pp. 19-63.

[70] See www.iccs-isac.org/eng/cmt-about.htm.

Exhibit 9 ACSI Private Sector Model
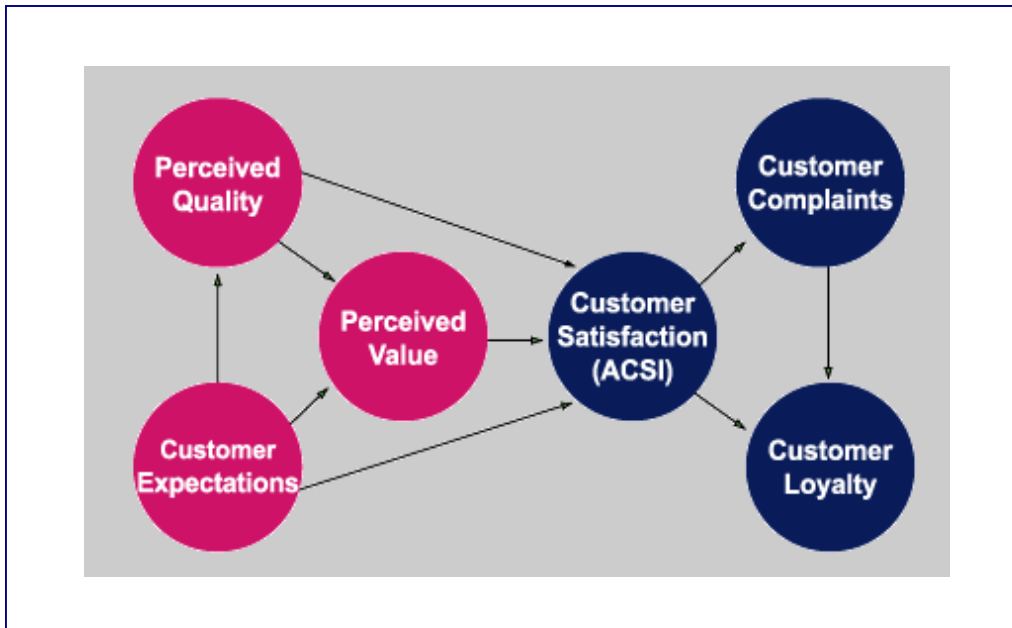
It is therefore worth stressing that the end result is a composite index including both the direct answers of customers surveyed and the directly observable results that should shape their satisfaction.

The model used to measure satisfaction with government agencies (see Exhibit 10 below) is identical to the private-sector model, except the component in the private-sector model concerning price and "repurchase" intentions has been adjusted for the public sector. (This occurs in the "outcomes" component of the model). Here again observed outcomes are included in the overall index.

Exhibit 10 ACSI Public Sector Model
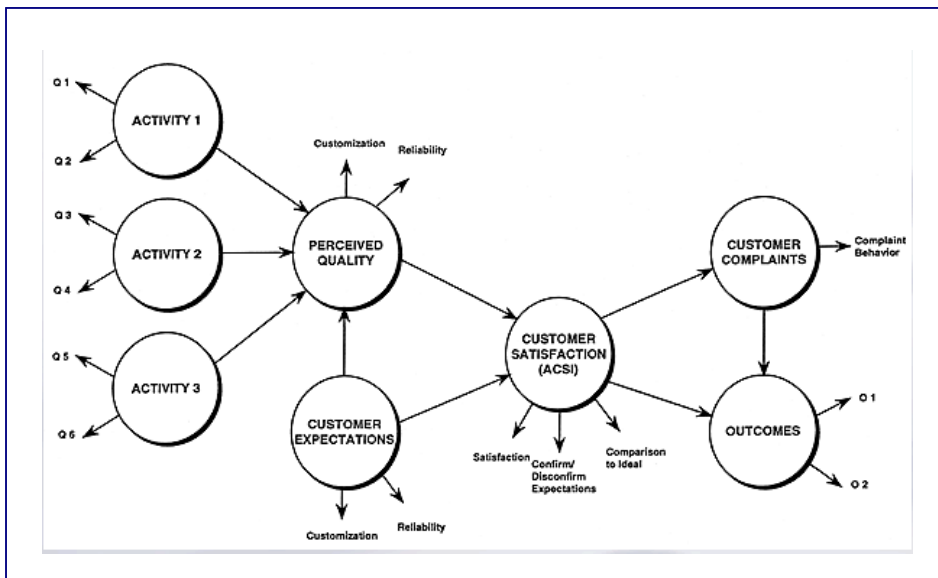
The latest results of the ACSI index for eGovernment, available for download[71], have been released in March 2005 and indicate that user satisfaction with federal e-government websites

---

[71] http://www.theacsi.org/ASSETS/e-gov_Q12005_March.xls

levelled off after nine months of steady improvement. The new data shows a slight decline to an aggregate government website score of 71.9 from the December index score of 72.1 on the ACSI's 100-point scale. Of the government websites measured last quarter, 35 percent showed a decline in customer satisfaction, 33 percent remained flat and 31 percent increased, evidence of the uphill struggle agencies face to constantly improve perceptions of their service to the public[72].

As anticipated these reviewed above represent only a selective sample of the increasing number of international and national surveys on the perception of citizens and businesses on the performance of the public sector. These include for instance:

- ❑ German Kunden Monitor;
- ❑ UK's People Panel;
- ❑ World and European Value Studies;
- ❑ Eurobarometer and European Social Survey.
- ❑ The World Competitiveness Yearbook (Lausanne Institute for Management Development)
- ❑ The World Competitiveness Report (World Economic Forum)

A very extensive review and a practical guide on governance and institutional quality indicators is provided in a dedicated website by the World Bank[73], where for instance the data of the Investment Climate Survey (including the perception of businesses on a number of parameters of public administration) can be downloaded[74]. While naturally the World Bank work is focussed on emerging and developing countries[75], the indicators reviewed and proposed can be adapted to the specificities of EU Member States.

3.2.2. Methodological complexities of users surveys

The first complexity entailed in measuring users satisfaction through surveys concerns the issue of expectations in general and of already formed 'predisposition towards government' of those who respond to such surveys. In general the marketing law formulated by Maister[76] can be applied:

$$Satisfaction = perception - expectation$$

In brief both perception and expectations are influenced by a number of variables that have little to do with the actual level of the quality of the services measured[77]. In this respect Bouckaert and Van de Walle, for instance, warn on the danger of the mechanistic reasoning according to which: increasing the quality of governance will increase satisfaction and trust and, therefore, trust and satisfaction indicators from surveys can be used as proxies for good

---

[72] http://www.theacsi.org/press_releases/ACSI%20E-Gov%20Mar.05%20Press%20Release.pdf

[73] http://www1.worldbank.org/publicsector/indicators.htm.

[74] http://rru.worldbank.org/InvestmentClimate/

[75] On the other hand, data are still available in the website on recent new European Member States such as Slovenia, Poland, etc.

[76] Maister, D. "The Psychology of Waiting Lines", in J Czepiel, M. Solomon, and C. Suprenant (eds), *The Service Encounter: Managing Employees-Customer Interaction in Service Business*, Lexington, Lexington Books, 1995.

[77] As shown, for instance, in a study of dissatisfaction and trust regarding six Flemish public agencies, of which 3 distribute subsidies and 3 levy taxes, not surprisingly they found that, regardless of actual services quality, the former three scored much better than the latter three in citizens attitudes surveys (Kampen, Jarl K., Steven Van de Walle and Geert Bouckaert (2003) "Interpreting soft indicators of performance in the public sector. The impact of the predisposition of citizens towards government.", working paper, Public Management Institute, K.U. Leuven, Belgium, http://soc.kuleuven.be/io/pubpdf/io05060015_egpa.pdf , accessed March 2005).

governance[78]. In fact, the authors explain that the causal relationship between satisfaction and trust can be fruitfully analysed only if the already formed 'predisposition towards government' of those who respond to such survey is controlled for.

If expectations and pre-formed judgement are not controlled for this weaken the validity of the data as a measure of the actual experience of quality. The effects of perceptions (public bureaucrcay is generally bad) and expectations (public bureaucracy should offer more) cannot be taken out from surveys without using relatively sophisticated models[79] that control for the particular predisposition of respondents toward government and thus produce a reliable measure of users satisfaction with a particular public service. Another alternative is the one followed in the American Customer Satisfaction Index where the directly observable outcomes that are assumed to shape satisfaction are included in the construction of the aggregate score measuring users satisfaction.

Other less complex methodological issues that nonetheless require attention concern so called 'survey errors' . Surveys can present four elements contributing to error:

    a) Insufficient sample size;

    b) Coverage error (the sample does not reflect the target population: e.g. survey on satisfaction with eGovernment services administered to a sample including respondents not possessing a PC);

    c) Measurement error (due to context effect: e.g. survey taken on the quality of public services in concomitance with a recent unpopular decision by government)

    d) Non-response error.

3.2.3. Lessons Learnt

The first lesson that can be derived from the above review is that there are at least four sources of data that can be used to measure perceived quality and userss satisfaction, the first is direct and the latter three indirect:

1. Directly asking users through traditional random sample surveys and/or interactive online surveys (at a more explorative stage also focus groups and one-to-one browsing can be used);

2. Taking the tangible and measured gains produced in terms of time saving, cost avoided and flexibility / convenience as observed indirect measures of quality of services improvement produced by eGovernment and assume that they translate into increase in userss satisfaction;

3. Using web tracking tool to observe online users behaviour an gain indirect evidence of satisfaction from elective repeated and cross usage of services;

4. Defining basic quality parameters of online services and then performing an experimental web-based assessment through external auditors who will attempt to use the services and register their experience (approach used in the latest Accenture eGovernment study).

The second lesson suggest that traditional random sample users surveys must be designed with care if they are to produce valid data on satisfaction where expectations and pre-formed judgement are controlled for. The ideal solution is the construction of a composite satisfaction index that, as the American eGovernment Customer Satisfaction Index, integrate observed outcomes in the construction of the overall score. The construction of such an index is a considerable task evidently outside of eGEP scope. As a matter of fact recently the European

---

[78] Bouckaert, G. and S. Van de Walle "Comparing measures of citizen trust and user satisfaction as indicators of "good governance: difficulties in linking trust and satisfaction indicators", International Review of Administrative Sciences, vol.69 (2003), p. 330.

[79] See, for instance, the model presented in Kampen *et al.*, op. cit., pp. 3-4.

Public Administration Network (EPAN) has started preliminary work for the elaboration of a European eGovernment Users Satisfaction Index.

Third, the *Top of the web* experience indicates that interactive surveys of online users can produce robust and replicable data. Such surveys have the draw back of using self-selected samples and thus reflect the peculiar attitudes and preferences of a the peculiar population consisting of individuals who are connected and use eGovernment services. Such attitudes and preferences might not necessarily reflect those of individuals who are online but do not use Internet intensively or of those who still are not online. On the other hand, they have the advantage of gathering the opinions of respondents who have actually used online public services and therefore are clearly less subject to expectations and pre-formed judgement distortion.

Fourth, *Top of the web* surveys report that for both citizen and businesses the time saved is considered, together with flexibility /convenience of use, as the most important benefit produced by eGovernment services and thus confirm the suitability of using tangible outcomes produced in terms of time savings as an indirect but observable and measurable indicators of quality of services and users satisfaction.

Finally, again from *Top of the web*, we learn the important lesson on the crucial relevance of usability of online public services as contribution to the effectiveness (the degree to which users are able to complete tasks and achieve the intended goal), and efficiency (the resources required by the users to complete tasks and goals) of usage, that considerably determines user satisfaction.

As a result of this review and in line with eGEP overall work and approach we can then propose the following sources-driven decomposition of the quality of services and users satisfaction into three dimensions.

1) Observable (objective) Tangible Quality Outcomes:

   ✓ Reduction in the number of officially filed complaints;
   ✓ Time Saved;
   ✓ Flexible usage;
   ✓ Users loyalty;

2) Unobservable (subjective) Intangible Dimensions of Quality:

   ✓ Correspondence of services to users' needs (perceived usefulness of services);
   ✓ Perceived accuracy and credibility of information provided;
   ✓ Satisfaction on how security and privacy issues are handled;
   ✓ Overall users rating of eGovernment services.

3) Externally Measurable (third party judgement) Functional Dimensions of Quality:

   ✓ Usability;
   ✓ Seamless service provision (cross-agency delivered services);
   ✓ Innovative service provision;
   ✓ Proactive communication and user education/help;

The data for the first dimension can come from administrative records and/or Standard Cost Model calculations, as well as from web metrics. This the objective and most quantifiable dimension. The second dimension concerns instead the subjective perspectives of users and will have to rely on surveys data. Finally the third is an intermediate dimension that can be assessed through external experimentation of online services by a large enough group of external auditors to guarantee a certain level of 'objective inter-subjectivity'. This is somehow similar to the approach followed in the latest Accenture eGovernment study. It our view, however, that to increase the level of inter-subjectivity, and consequently the reliability of the assessment thus produced, the work team should be mixed, with representation of more than one research institution and/or consulting company and with inclusion of experts from the assessed public administrations.

For each dimension a composite indicators can be constructed aggregating lower level indicators, and in turn the three indicators thus constructed can be further rendered, through opportunely selected weights, into a one single **<u>simple</u>** composite index. We stressed the adjective 'simple' to clearly render the important fact that such index would not be based on causal equation, partial least squares, or other more sophisticated and therefore not of the same robustness of the likes of the American Customer Satisfaction Index.

4. Implementation Methodology Underpinning

4.1. Building blocks of the Implementation Methodology

In this paragraph we explain the implementation of the proposed methodology for the measurement of eGovernment program's value by the means of the indicators chosen and displayed in the previous exhibits. Our starting assumption is that, while the Measurement Framework is focused on eGovernment programs at country level (European member states), public managers (civil servants), instead, may be more interested and have to do with single eGovernement projects that, clearly, contribute to the public sector performance. Thus we attempt to design a strategic tool that enables us, as well as anyone is interested in, to make these differing analysis-levels converge in a meaningful manner. We believe this is possible by creating a methodology that can be applied at any level we refer to, namely at Country level (eGovernment program) or at single public administration (eGovernment project or service).

Aiming at this, we introduced a methodology based on three concepts already explained:

1. value-drivers
2. composite indicators
3. revenue-risk matrix.

Accordingly, this section is organized as follows. First, we overview the analysis of the procedure, by which composite indicators are constructed in order to account for the whole performance of each eGovernment initiative. Second, we analyse the likely-to-be functionality of the so-called revenue-risk matrix, enabling us to take into account resource availability and risk-minimization issues.

4.2. Composite Indicators

According to Freudenberg[80], composite indicators are "*synthetic indices of individual indicators",* that allow for comparison of country performance. Indeed, they are generally employed for comparing and ranking countries in areas such as industrial competitiveness, sustainable development, globalization and innovation. They are useful for their ability to integrate and normalize large amount of information into easily-to read and readily-to understand format for a broad audience. In other words, these summary indicators limit the number of statistics to be presented in order to make comparison among performance-differing countries, and allow for a more quickly and easily format for performance evaluation.

Although their usefulness is undoubtful, there are several problems arising when they are calculated, that is there may be questions regarding their accuracy and reliability. This is because of "[...] *the seemingly ad hoc nature of their computation, the sensitivity of the results to different weighting and aggregation techniques, and* [finally] *continuing problems of missing data* [...]"[81]

---

[80] Freudenberg, M., "Composite Indicators of Country Performance: a Critical Assessment", *STI working paper 2003/16 Industry Issues,* November, 12.

[81] Freudenberg, M., "Composite Indicators of Country Performance, *op. cit.,* p. 5.

Freudenberg identifies five steps to be followed in constructing composite indicators. They are the following ones[82]:

❑ Developing a theoretical framework for the composite.
❑ Identifying and developing relevant variables.
❑ Standardising variables to allow comparisons.
❑ Weighting variables and group of variables.
❑ Conducting sensitivity tests on the robustness of aggregated variables.

Developing a theoretical framework for the composite indicator. The underlined assumption of our eGEP project is that each indicator, we have decided to construct, is a quantitative (such as "efficiency") or a qualitative (such as "effectiveness" and "openness") measure derived from a series of observed facts that are worth taking into account. Accordingly, we can conceive the efficiency, effectiveness and openness value-drivers as higher-order indicators, calculated on the basis of a well-defined and previously-chosen set of sub-indicators. In turn, these higher-order indicators are aggregated into the so-called (global) composite indicators in order to get a more comprehensive measurement of eGovernment intiatives' value. According to Freudenberg, composite indicator represents a simple composite measure formed when some indicators are compiled into a synthetic index. [83]

A typical composite indicator takes the form:

$$I = \sum_{i=1}^{W} w_i X_i,$$ where:

I: Composite index,

X_i: Normalised variable,

w_i: Weight of the X_i, $\quad \sum_{i=1}^{N} w_i = 1,$ and $0 \leq w_i \leq 1$

i: 1,..., n.

For our purpose,

X_i: Normalised variable,

refers to each sub-indicator we have chosen for the measurement of efficiency/effectiveness/governance for each eGovernment initiative. Thus,

I: Composite index,

refer to the overall estimation of the efficiency/effectiveness/governance for each eGovernment project. Thereby, we refer to this synthetic index, as **Global Composite Indicator** (see further).

However, before integrating individual variables, it is important and necessary to define a theoretical framework within which individual indicators could be combined in a meaningful way. This theoretical framework, if well-defined, could be able to point out which variable are to be included and how they have to be weighted according to their relevance.

The Measurement Framework, we have been working on during the last months, accounts for this aspect of the composition procedure. It indicates the way indicators are to be chosen and it provides a meaningful platform which indicators are to be consistent with.

---

[82] Freudenberg, M., "Composite Indicators of Country Performance, *op. cit.,* p. 5.

[83] Freudenberg, M., "Composite Indicators of Country Performance, *op. cit.,* p. 5.

Identifying and developing relevant variables. It is un doubtful that one of the major problems in computing composite index is the choice of relevant variable that are worth taking into account in the estimation. Accordingly, the most critical problem we have to face is to choose the most meaningful and exhaustive set of sub-indicators related to each eGovernment service and value-driver. However, this attempt should be matched with a widespread need for simplicity that might make our suggested methodology be implemented by everyone is interested in. This is the aim of our step-by-step selection procedure pursued till now. Accordingly, third run of indicators is meant to be the final step of this procedure and then it is supposed to represent a very meaningful, exhaustive, but simple set of value indicators to be employed. In any case, "the selection of data to incorporate in a composite can be quite subjective"[84]. Thus, "the quality and accuracy of composite indicators should evolve in parallel with improvements in data collection and indicator development"[85]

Standardising variables to allow comparisons. Variables need to be standardized because they come in a variety of statistical units, range and scales. Thus, there is a necessity to put differing variables in a common basis in order to make comparisons meaningful.

Several techniques can be used to standardise or normalise variable. The most commonly used are the following ones:

➢ Standard deviation from the mean: [positive (negative) values for a given country indicate above (below)- average performance]

$$\left(\frac{\text{actual value} - \text{mean value}}{\text{standard deviation}} \right)$$

➢ Distance from the group leader: [100 points are assigned to the leading country and other countries are ranked as percentage points away form the leader]

$$100 \left(\frac{\text{actual value}}{\text{maximum value}} \right)$$

➢ Distance from the mean: [the (weighted or un-weighted) mean value is given 100, countries are given scores depending on their distance from the mean]

$$100 \left(\frac{\text{actual value}}{\text{mean value}} \right)$$

➢ Distance from the best and the worst performers: [positioning is in relation to the global maximum and the minimum; laggard countries are given 0 point, the leader 100 points]

$$100 \left(\frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}} \right)$$

➢ Categorical scale [each variable is assigned a numerical/qualitative score depending on whether its value is above or below a given threshold]

However for the particular nature of the data we are dealing with, and also given the meaning of this technique for our purpose of measurement, a much more fruitful way to normalize variables is the "*distance from the baseline*". The method simply computes the difference between the amount of each indicator per year (X_t) and amount of each indicator in the baseline year ($X_{t=0}$), and then it relates this measure to the second term of the difference, as follows:

$$(X_t - X_{t=0}) / X_{t=0}$$

---

[84] Freudenberg, M., "Composite Indicators of Country Performance, *op. cit.,* p. 8.

[85] Freudenberg, M., "Composite Indicators of Country Performance, *op. cit.,* p. 8.

We call this technique as "distance from the baseline". Clearly, this implies that for each benefit, reflecting respectively the efficiency, the effectiveness and the governance value drivers, the baseline which the project measurement procedure refers to is the same. By so doing, it is possible to assess the comparative performance of the projects, we are evaluating, in terms of progress (distance) from the baseline that represents a common base of evaluation. To sum up, through this normalization procedure it is possible to get sensible perceptions of the contribution of the project in terms of efficiency, effectiveness and governance, along the whole project's cycle.

Weighting variables and group of variables. In order not to loose relevant information regarding the meaning of each indicator, it is important, once the standardization procedure is accomplished, that variables, to be aggregated, are weighted.

There are several ways to weight variables. Differing weights means differing reliability, significance, or other characteristics of the underlying data of each indicator. Clearly, depending on which weights are chosen, the overall finding would come out differently.

In many composite indicators, all variable are given common weights for reason of simplicity. This implies, however, that all indicators in the composite have equal importance, which may not be the case. Further, there may be the risk that certain aspects will be double weighted. This occurs when two or more indicators measure the same behaviour. For example, in composites of eGovernment efficiency, indicators relating to reduction of personnel costs, reduction of transaction costs and reduction of data processing costs may overlap in some way and, when used together, may tend to heavily emphasize one aspect of the composite (e.g. cost reduction in general). As a remedy, Freudenberg[86] suggests that indicators could be tested for statistical correlations, and lower weights could be given to variables strongly correlated with each other.

In general, greater weights should be given to components which are considered to be more important, significant, available and quality-based, lower weights, instead, to components that are less. Alternatively, one can also decide to give less weight to variables that suffer most from missing values in order to partially reduce the problem of data reliability. Consistently, it is also possible and useful to weight more those components with high quality and availability.

In other words, we do suggest possible weights for each sub-indicator chosen, but they are meant to be changed accordingly to the subjective judgment of the single analyst. She/he should take into account data quality, data availability and data reliability issues, as underlined before.

Conducting sensitivity tests on the robustness of aggregated variables. "*Sensitivity test should be conducted to analyse the impact of including or excluding various variables, changing weights, using different standardization techniques and selecting alternative base years […] on the result of the composite indicators.*"[87]

In essence, they allow for evaluating the robustness of the summary indices calculated and indirectly they demonstrate whether the theoretical framework has been defined well or not and to what extent it would be changed or modified.

We believe this step will be accomplished in the future, when the evaluation and the measurement of eGovernment projects or services will achieve a higher step of development, becoming a current practice for the most of European Countries.

---

[86] Freudenberg, M., "Composite Indicators of Country Performance, *op. cit.,* p. 12.

[87] Freudenberg, M., "Composite Indicators of Country Performance, *op. cit.,* p. 13.

4.3. Revenue/Risk matrix: implication for project portfolio management

As underlined earlier, being the framework a sort of scorecard to measure the impact of eGovernement, either internal and external to the public sector, a criterion based on the assessment of the contribution of a specific activity or project to the framework itself appears extremely fruitful to policy makers.

In that perspective, we have suggested that it is useful to compute the global composite index for each eGovernment project, including only those variables that are considered relevant for the project itself. This can lead to a measurement of the single project contribution to the framework, in terms of efficiency, effectiveness and governance, which could be quantified as the absolute degree of improvement of the public sector performance. The relation between project, framework and overall performance is presented in the following exhibit, that depicts in an explanatory manner the link for the analysis of the efficiency value driver.

Exhibit 11 Project, Framework and Economic Model Link (Exemplificative)
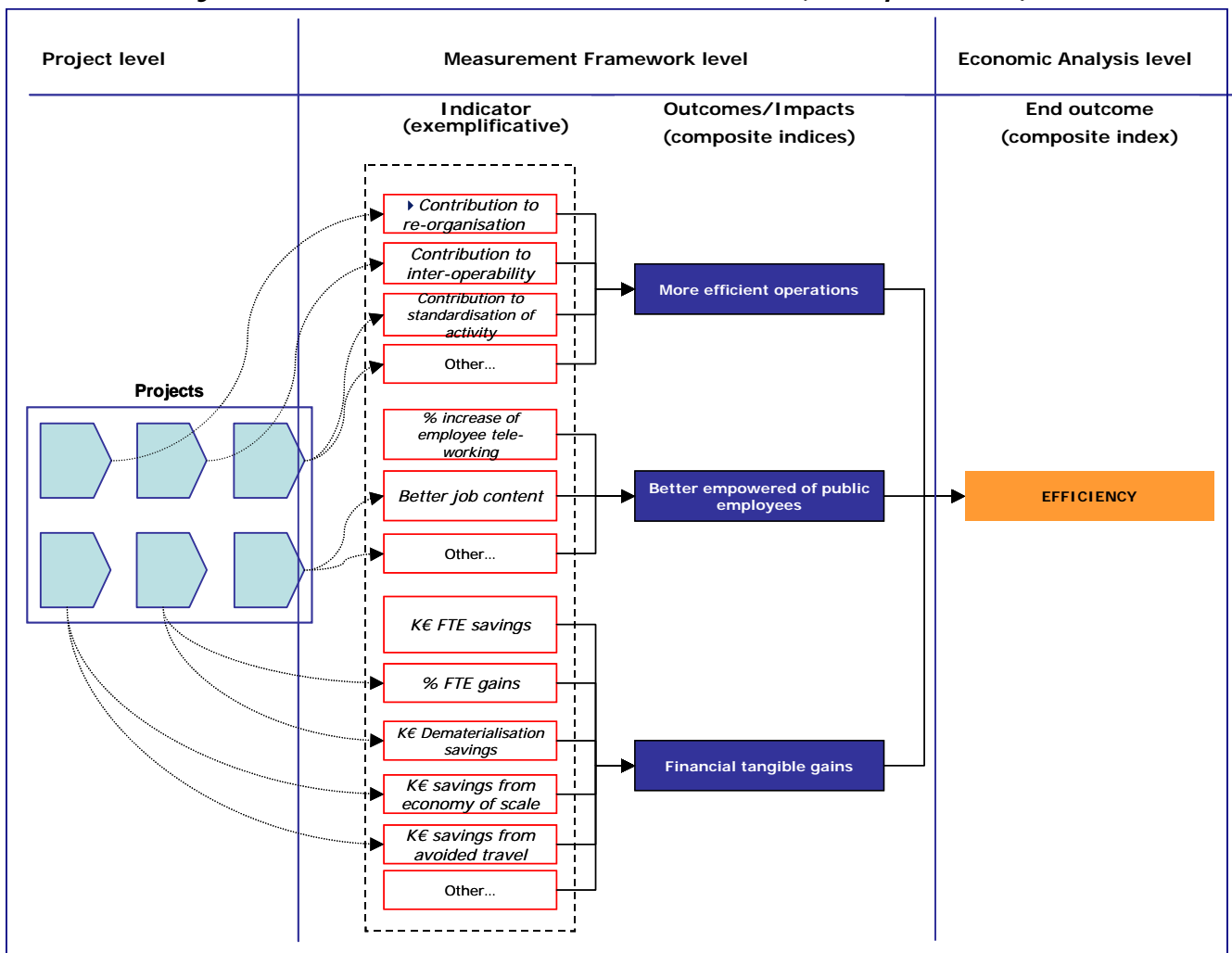
Once this evaluation has been accomplished for the entire project portfolio, decision maker can make comparisons between projects in terms of contribution to the framework. However, selecting projects is a very complex activity, that must take into account both revenues and risks associated to each project. As a matter of fact, given limited resources, the simultaneous evaluation of revenues and risks allows decision makers to select projects in terms of expected value. This selection can be done by the mean of a revenue/risk matrix in which each project is identified along three dimensions:

- **Revenues:** it is equal to the value released by the project, in terms of economic-financial value generated; in our approach revenues can be estimated by the absolute degree of improvement of the public sector performance associated to the project. The measure is provided by the percentage amount of the global composite indicator;
- **Risk:** associated with each project, it is measurable through the assessment the volatility or variability of relevant variables for the project: costs, revenues (degree of improvement of the public sector performance), lead time of the project, etc. The measure is provided by the complement to one of the ratio between global composite indicator accounting for risk and global composite indicator not accounting for it.
- **Resources:** amount of resources invested, in terms of man-hours (FTEs) or in terms of economic-financial value of the investments for the project. In our framework this amount is equal to the total costs of the project.

All three dimensions are then joined in a single matrix (see the following exhibit), whose two dimensions are represented by risks and revenues, while the third dimension (resources) is represented by the size of the circle that identify each project.

Exhibit 12 Risk-Revenue Matrix
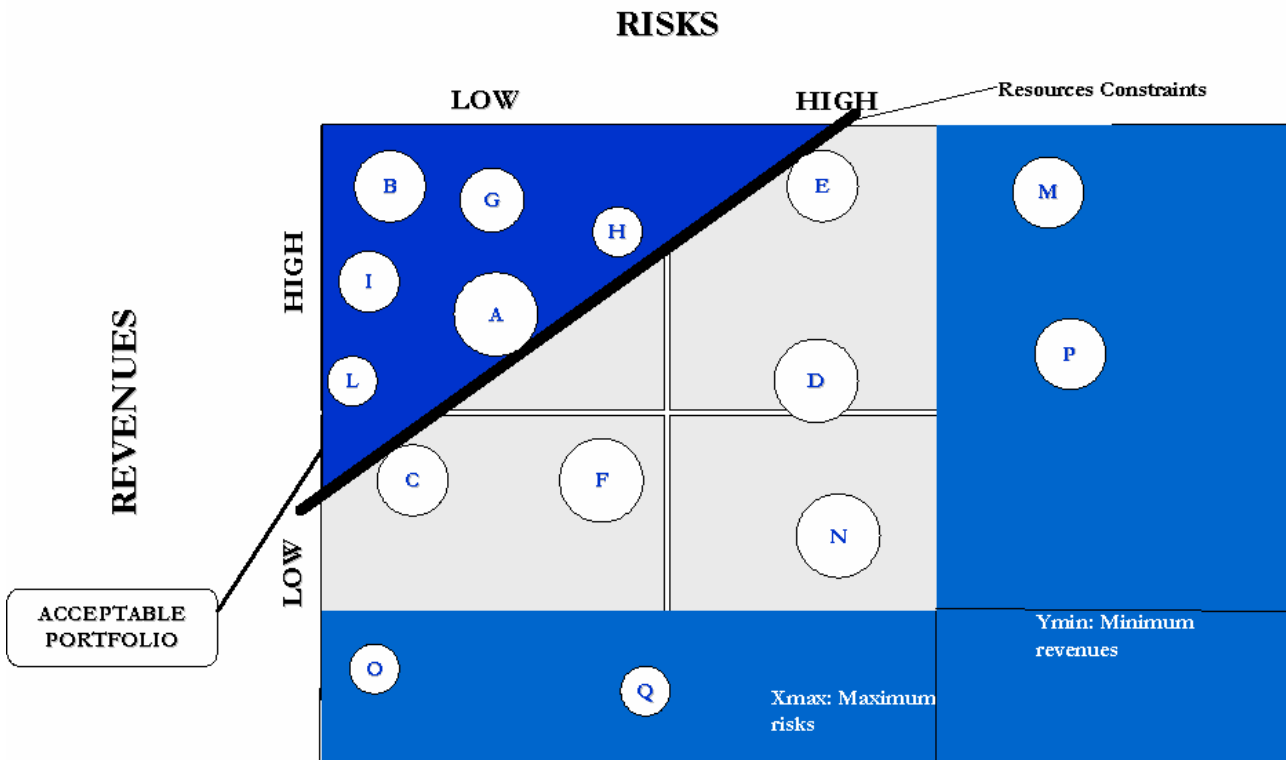
At a first glance to the Exhibit, it is possible to identify a first set of constraints, referring to a minimum value of revenues acceptable and a maximum level of risk sustainable. Consideration about constraints allow for reducing the alternatives of choice available and, thus, rejecting some projects that appear external to the area of the matrix actually appealing for the firm. Another constraint to be considered is resource-availability. It is represented as a line that divides the matrix in two portions, the one on the high left corner that includes the acceptable projects that could be selected in the portfolio, the other in the right side of the line, referring to the unacceptable projects. The resource-availability constraint line is conceived as a linear utility curve, whose inclination measures the risk-aversion of the decision maker. In the matrix the above-mentioned line is drawn from the high left corner that identifies a high relevant area of low risk so that it displays the most appealing projects, continuing toward the opposite corner that identifies an area less attractive given the high risk/low earning profile. Moving

from the high left corner to the low right one, the line meets with projects characterized by a decreasing utility scale, until it stops in correspondence of the resources saturation. By this way, the line identifies the desirable portfolio.

Annex A eGovernment Institutional Objectives

As part of the preliminary contextual work carried out for the elaboration of the Measurement Framework First Outline, we analysed the most recent publicly available eGovernment strategy and more general policy documents for all of 25 EU Member States. The main goal of this work was to identify declared eGovernment objectives, as well as what seems to be, at least form the documents reviewed, the current priority focus of major initiatives.

Such overview of Member States institutional eGovernment objectives and current priority focus is based only on the analysis of the last updated official documents available online. As policy and initiatives changes are not automatically translated into policy documents, it is possible that our review does not entirely reflect the situation in Member States. It is our expectation that such review will be refined and updated through stakeholders consultation. Only in those cases (for instance, Cyprus and Latvia) where we could not find on the Internet official documents in English or in the other languages mastered within our work team (French, German, Spanish) we extrapolated information from other types of documents.

This work, synthesised in table 1 (see par. 1.3), is reported here in more details for each Member State with the indication of the sources used.

Austria

eGovernment declared objectives in last updated document	
Service delivery	Provision of electronic delivery for all administrative services for citizens and companies by the end of 2005. All citizens and companies should be able to complete several administrative procedures faster, without any special knowledge of the responsibility area of the administration departments or regulations and without any special technical knowledge.
Joined-up government	Cooperation between all administrative levels, although responsibilities and competencies are spread among Central Government, States (Länder) and Municipalities.
Back-office optimisation	"One-stop" principle: it must be possible to obtain a service from a central point, irrespective of the processes that the administration must carry out in order to deal with the matter.
eDemocracy	Enhancing citizen involvement in policy-making process, encouraging feed-back (see the administrative portal http://www.help.gv.at), towards e-Voting
Current focus on	Main illustrative initiative
Back-office optimisation	ELAK (Electronic Act) Project National portal "http://www.help.gv"
Take-up	Bürgerkarte (Citizen Card)
Quality	eGovernment Gütesiegel (quality seal for eGovernment services)

Sources

- Chief Information Office – IKT-Stabsstelle des Bundes (CIO), (2004) *Behörden im Netz – Das Österreichische E-Government ABC*, CIO, Vienna, (http://www.cio.gv.at/egovernment/umbrella/BEHOERDEN_ABC_final.pdf, accessed February 2005);
- Chief Information Office – IKT-Stabsstelle des Bundes (CIO), (2002) *E-Government Strategien – Online Verfahren*, CIO, Vienna, (http://www.cio.gv.at/egovernment/strategy/Teil_I.pdf, accessed February 2005);
- Chief Information Office – IKT-Stabsstelle des Bundes (CIO), (2002) *E-Government Strategien – Verfahren und Methoden innerhalb der Bundesverwaltung*, CIO, Vienna, (http://www.cio.gv.at/egovernment/strategy/Teil_I.pdf, accessed February 2005).

Belgium

eGovernment declared objectives in last updated document	
Take-up	Services redesigning, with the adoption of citizen-centred approach, around citizen's life-events.
Joined-up government	Collaboration among all institutions (at national and regional levels), around standards defined by the central agency (Fedict).
Administrative simplification	Reduction of the administrative burden through the improvement of existent data management systems.
Back-office optimisation	Back-office integration, especially at the federal level, with the increase of common application and service harmonization as well as an enhanced re-use of new services and solutions.
Trust/ Privacy and Security	Privacy Safeguard: data securitization and authentication, enhancing transparency in relations between citizens and public administration, and building a trust climate within society towards public administration.
Access/Social Inclusion	Increase the number of people with access to ICT, with a special focus on young/emarginated segments of population, and improving ICT education.

Current focus on	Main illustrative initiative
Administrative Simplification	National Electronic Identity Card
	Banque Carrefour de la Sécurité Sociale
	Banque Carrefour des entreprises
	Tax declaration and payment on-line for privates and enterprises (Tax-On-Web)
Back-Office Optimisation	Federal portal of public administration (www.belgium.be)
	UME (Universal Messaging Engine)
	Unique Identification Key for citizens and enterprises
Trust (Privacy and Security)	Public Key Infrastructure (PKI)

Sources

- Service Publique Fédéral ICT - SPF Fédict, (2004) *eGovernment Presentation,* Service Publique Fédéral ICT - SPF Fédict, Bruxelles (http://www.belgium.be/eportal/application?origin=charterDetail.jsp&event=bea.portal.framework.internal.refresh&pageid=indexPage&navId=5449#anchor_7, accessed February 2005);

- Cabinet of the State Secretary for State Informatization, (2003) *Note Stratégique du Secrétaire d'Etat à l'Informatisation de l'Etat,* Cabinet of the State Secretary for State Informatization, Bruxelles (http://mineco.fgov.be/information_society/administrations/e-government_BE/note_strateg_inform_Etat_fr.pdf, accessed February 2005).

Cyprus*

eGovernment declared objectives in last updated document	
Access/ Social Inclusion	Policies have been implemented to make the cost of Internet access available for the population.
	Public Web pages and portals are being developed according to the principles of the Web Accessibility Guidelines.
Automation Service Delivery	Focus on improving the public administration through the effective use of IT.
	Aim to serve the citizens directly by providing integrated and seamless services, information and transactions.

Current focus on	Main illustrative initiative
Administrative simplification	Taxisnet: online payment of taxes and VAT for citizens and companies
	Theseas: Custom and import declaration online for traders and other authorised agents

* Lack of official documents in English version

Sources

❑ Ministry of Finance and the Planning Bureau (2004), *Report on structural reforms in Cyprus in the context of Cardiff exercise, October 2004,* Ministry of Finance and the Planning Bureau, Nicosia, (http://www.mof.gov.cy/mof/mof.nsf/A9DBD37D163BA864C2256F9A003A661A/$FILE/CARDIFF %20REPORT%202004FINAL.doc, accessed March 2005).

Czech Republic

eGovernment declared objectives in last updated document	
Service Delivery	The supply of affordable services is regarded as a necessary tool in order to positively affect the overall electronic communications market development. The goal is to provide a faster, more reliable provision of public administration services, bringing online as many services as possible.
Access/ Social Inclusion	Increasing the level of ICT literacy among population (citizens, enterprises, civil servants), through the enhancement of literacy campaigns for children and adults, the lowering the prices of hardware and telecommunication services and increasing the number of public libraries with public Internet access points.
Trust/Privacy and Security	The Government regards the provision of secure services for citizens as a key priority, in order to stimulate the demand for such services.
Regulatory Framework	The Government will define the principles and objectives of regulation in line with the European regulatory framework. The focus of the regulatory policy is to stimulate the development of data services. Key priorities of this regulation will be transparency .
Joined up government	Stress on connectivity of all public networks, to rule the interchanging of data between public administration bodies.
Back-office optimisation	To develop the Public Administration Portal for it to become the main interface between the entire system of eGovernment services and its users.
Take-up	The Government intends to promote the interest of all users of electronic communications services and stimulate the use of those services by end-users, motivating them to use the online access as much as possible, by minimising the obligation of citizens to submit documents in a paper format.
Administrative Simplification	To enhance the simplification of online completion and filing of statistical reports.
Efficiency	To provide a cheaper provision of public administration services, also through e-procurement applications.
Current focus on	Main illustrative initiative
Regulatory Framework	Electronic Communication Act (legislation)
Back-office optimisation	The Public Administration Portal (Portal.gov.cz)
Joined up government	Public Administration Intranet (IVS)

Sources:

❑ Ministry of Informatics, (2004) *State Information and Communications Policy e-Czech 2006*, Ministry of Informatics, Prague (http://www.micr.cz/files/1288/ENG-SIKP.pdf, accessed March 2005).

Denmark

	eGovernment declared objectives in last updated document
Efficiency Quality	Citizens- and businesses-centred public administration, which should become more efficient and coherent in order to achieve quantitative and qualitative measurement objectives.
Efficiency	Increase the efficiency of eGovernment projects, which must provide either better services in terms of quality or to supply the same service using fewer resources.
Take-up	Bring awareness to the current digitalisation process. ID Card Projects, which should provide sufficient security for most public sector and private sector transactions.
Back-office optimisation	The public sector must work and communicate digitally, both internally and in its relations with citizens and businesses. Creation of a coherent and flexible infrastructure to deliver eGovernment services, without any strong preferences for any IT-supplier. Both senior management and other public sector managers must commit themselves to working with e-Government, in order to lead the public administration's transition to digital government.

Current focus on	**Main illustrative initiative**
Back-office optimisation	JEDM Project (Joint Electronic Document Management System) Use of mobile technologies in home care and by law enforcement authorities Creation of a set of common technological standards and solutions
Take-up	e-Day Initiative (first edition: 1 September 2003) OCES - Public Certificate for Electronic Services (free software based digital signature)

Sources:

- ❑ Danish Digital task Force (DTF) (2004), *The Danish e-Government Strategy 2004-2006: Realising The Vision*, DTF, Copenhagen, (http://e.gov.dk/uploads/media/strategy_2004_06_en_01.doc, accessed February 2005);
- ❑ Ministry of Science, Technology and Innovation (2003), *White Paper on Enterprise Architecture,* Ministry of Science, Technology and Innovation, Copenhagen, (http://e.gov.dk/uploads/media/whitepaper_01.pdf, accessed February 2005).

Estonia

	eGovernment declared objectives in last updated document
Service delivery	Speeding up the implementation of projects that enable electronic communication with the state, creating IT solutions for the electronic provisions of all basic services so that they will be digitalised, enhancing communication between citizens and the state through the provision of a special Citizen portal.
Access/ Social inclusion	Increasing and improving IT access in order for it to be facilitated for the socially disadvantaged; keeping developing public internet access points and ensuring computer skills for all members of the society, including those representing risk groups. Creating web pages in a way that they can inform as many people as possible.
Take-up	Promoting the information society related know-how to promote Estonian e-solutions and e-experience.
Joined-up government	To create cooperation between the public and the private sector in IT field.
Back-office optimisation	Making most of the registers and databases linked with an ad hoc service layer database (the X-Road), modernising and optimising state databases; ensuring balanced regional development to information society projects by getting local government involved in the implementation of e-services in order to avoid incompatibility of solutions. Launching of digital archiving for the preservation of digitally created public records, preparing IT support systems for the administration of the means of EU structural funds.
eDemocracy	Elaborating solutions to increase e-Democracy through an e-Voting system
Trust/Privacy and Security/ Transparency	Drafting of basic principles for a common IT security policy and establishment of a national IT security centre, with different tasks like registering of attacks, informing of all parties involved, elaborating safeguard measures, and increasing awareness of IT security
HR Development	Stressing training related to e-services in all agencies and in the whole society.
Efficiency	Developing electronic document management and digital archiving to ensure integrity, availability and interoperability of data in order to reach the final goal of making the public sector more efficient.
Current focus on	**Main illustrative initiative**
Service Delivery	Citizen's portal www.eesti.ee
Back-office optimisation	Introduction of data exchange layer X-Road
eDemocracy	An Internet-based e-Voting system. Täna Otsustan Mina ("I decide today" 2001): ministries upload their draft bills allowing citizens to review, comment and make proposals
Access/Social Inclusion	Improving IT penetration through provision of PIAPs (Public Internet Access Points) in public libraries

Sources:
- Ministry of Economic Affairs and Communications, (2004) *Estonian IT Policy: Towards a More Service-Centred and Citizen-Friendly State,* Ministry of Economic Affairs and Communications, Tallinn (http://www.esis.ee/ist2004/64.html, accessed February

Finland

	eGovernment declared objectives in last updated document
Service delivery	Provide an increasing proportion of public administration services on the Internet and through other communications systems in addition to traditional service provision, with particular attention to electronic services for citizens.
Back-office optimisation Joined-up government	Review internal processes and organisation, in order to dismantle the boundaries between the services provided by the Government and local authorities, and regional, national and, in the long run, EU-level services.
Access/Social Inclusion	Make social welfare and health services more available and improve their quality and cost-effectiveness.
Back-office optimisation	Create information management operating models and standards that can be copied elsewhere, with a parallel harmonization of technological standards and solutions.
Trust (Transparency)	Pay particular attention to the clarity, consistency and validity of information society legislation.

Current focus on	Main illustrative initiative
Administrative Simplification	Further development of the Suomi.fi-portal, which should be integrated with the national information portal
Service delivery	National Health Project, promoting the introduction and compatibility of electronic patient records and electronic referral-treatment feedback system Pilot project for electronic prescriptions National electronic certification service for health care personnel
Access/Social Inclusion Service Delivery Take up	"Public Services in the New Millennium" Action Programme

Sources:

- Ministry of Finance - Finnish Information Society Advisory Board, (2004) *Information Society Programme*, Finnish Information Society Advisory Board, Helsinki, (http://www.tietoyhteiskuntaohjelma.fi/esittely/en_GB/introduction/_files/11042717720000592/default/tietoyhteiskuntaohjelma_engl_030404.pdf, accessed February 2005);
- Ministry for Foreign Affairs, (2004) *Development Policy,* Ministry for Foreign Affairs, Helsinki, (http://global.finland.fi/english/publications/pdf/dev_policy2004.pdf, accessed March 2005);
- Ministry of Finance - Finnish Information Society Advisory Board, (2001) *Public Services in the New Millennium - Programme of Action to Promote Finnish Online Government, 2002-2003*, Finnish Information Society Advisory Board, Helsinki, (http://egov.alentejodigital.pt/Finlandia/PublicServices.pdf, accessed February 2005).

France

eGovernment declared objectives in last updated document	
Take-up Administrative Simplification	Creating new, more accessible and personalized services for citizens, enterprises, civil society organisations and local communities, reinforcing the effort on simplification procedures.
Joined-up government/ Inter-institutional cooperation	Encouraging experimentations within the context of public-private partnerships. Enhancing decentralization through the experimentation of public-private partnerships. Modernizing Public Sector and Public Services in collaboration with European partners, and guiding electronic administration development .
Trust (Privacy and Security)	Building a Trust Climate within society towards public administration, enhancing transparency in the relations between citizens and public administration.
Efficiency	Public Expenditure Rationalization: in particular, contributing to the restoration of the financial measures margins of the Public Sector (State and Public Services).

Current focus on	Main illustrative initiative
Service delivery	Identity National Card -Carte Nationale d'Identité Electronique (CNIE) Carte d'Assurance Maladie (Carte Vitale) second generation: an unique card which contains information to assure access both to the basic and the complementary sanitary assistance Fiscal dossier (identification number, tax declaration and payments) of private citizens An Identification Number for enterprises, which allow them to make online tax declaration and payments
Back-office optimisation Efficiency	Accord : informatics application common to all public actors involved in public expenditure, which can help in public expenditure monitoring. This project is connected with the introduction of a new public accounting system

Sources:

❑ Ministry of Public Function, State Reform and Territory Management, Secretary for State Reform, Agency for Development of Electronic Administration (ADAE), *Adele, Plan Stratégique de l'Administration Electronique (PSAE), 2004-2007,* Ministry of Public Function, State Reform and Territory Management, Secretary for State Reform, ADAE, Paris (http://www.adae.gouv.fr/IMG/pdf/adele_plan_strategique-2.pdf, accessed February 2005);

❑ Ministry of Public Function, State Reform and Territory Management, Secretary for State Reform, Agency for Development of Electronic Administration (ADAE), *Adele, Les Fiches Projet,* Ministry of Public Function, State Reform and Territory Management, Secretary for State Reform, ADAE, Paris (http://www.adae.gouv.fr/IMG/pdf/adele_fiches_projet-2-2.pdf, accessed February 2005);

❑ Ministry of Economics and Finance, (2003) *La lettre de la Moderfie*, n°2, Ministry of Economics and Finance, Paris (http://www.minefi.gouv.fr/lolf/downloads/1200_1_lettre_2.pdf, accessed March 2005).

Germany

eGovernment declared objectives in last updated document	
Access/Social Inclusion	Create an access to electronic administration for every German public space (i.e. not only public offices, but also cultural or social institutions).
Service delivery	Make the most important cross-level administrative services to citizens and businesses online available (priority areas, for example unemployment and social welfare assistance, have been already defined).
Joined-up government	Provide a better integration between all administrative levels (federal government, Land governments and municipalities). Improve the transfer of e-Government solutions between the federal government, Land governments and municipalities (horizontal and vertical cooperation).
Back-office optimisation	Establish a set of common technological standards (the current IT landscape is extremely heterogeneous).

Current focus on	Main illustrative initiative
Back-office optimisation	Deutschland-Online Project (strategic Programme and national portal for public sector offer)
Service Delivery	Creation of a centralized digital businesses' register (the project is lead by Federal Administration and Land Nordrhein-Westfalen)
Take-up Trust (Privacy and Security)	Medi@Komm Project, with the involvement of local communities

Sources:

- ❑ Federal Ministry of the Interior (BMI), (2004) *BundOnline 2005 - Basiskomponenten und Kompetenzzentren*, BMI, Berlin, (http://www.bund.de/nn_6958/Content/BundOnline-2005/Download/Download-seite-2-anl,templateId=raw,property=publicationFile.pdf, accessed February 2005);

- ❑ Heads of the federal government and Land governments, (2003) *A strategy for integrated eGovernment*, Heads of the federal government and Land governments, Berlin, (http://www.deutschland-online.de/Englisch/Dokumente/National%20eGovernment%20Strategy%20-%2026.06.2003.pdf, accessed February 2005);

- ❑ German Institute for Urban Affairs (Difu), (2003) *Local E-Government Government: the MEDIA@Komm Projects* , Difu, Berlin, (http://www.mediakomm.net/en/document/2003-zakopane.pdf, accessed March 2005).

Greece

eGovernment declared objectives in last updated document	
Joined-up government	Improving quality services to citizens and firms by the public administration, at central, regional and local level (Government on line).
Back-office optimisation	Development of on-line applications (including public tendering and procurement procedures) as well as use of ICTs to streamline and re-engineer procedures and communication within and between government departments. Use of IT for the support of the modernization effort in the public sector, training of public sector employees in new technologies and organisational methods.
Service delivery	Support of the creation of geographical and environmental mapping and management information systems, linking central to regional and local government. Introduction of telematics applications ("intelligent transport") in land, sea and air transport.

Current focus on	Main illustrative initiative
Administrative simplification	"Politia" Programme
Services delivery	Single entry portal "Ariadni": 1000 citizen's service centres "Syzeyxis" (public administration Intranet)
Take-up	The e-Business Forum, a permanent mechanism for consultation between the State and the business and academic community, has set up a Smart Card Working Group

Sources:

❑ United Nations Thessaloniki Centre for Public Service Professionalism (UNTC), (2004), *Business plans for the development of e-government in Greece. An appraisal*, UNTC, Thessaloniki, (http://unpan1.un.org/intradoc/groups/public/documents/UNTC/UNPAN014633.pdf, accessed February 2005);

❑ Ministry of Economy & Finance - Secretariat for Information Society, (2002) *Greece in the Information Society - Strategy and Actors*, Ministry of Economy & Finance - Secretariat for Information Society, Athens, (http://en.infosoc.gr/content/downloads/WPEngFINAL.pdf, accessed February 2005);

❑ Ministry of Economy & Finance - Secretariat for Information Society, (2002) *Operational Programme Information Society - Summary*, Ministry of Economy & Finance - Secretariat for Information Society, Athens, (http://en.infosoc.gr/content/downloads/SummaryOPISEn.pdf, accessed February 2005).

Hungary

eGovernment declared objectives in last updated document	
Service Delivery	To transform processes in public administration (informatisation-modernisation), improving their efficiency by making services electronically accessible. To provide access to the 20 public services specified by the eEurope 2005 programme as soon as possible.
Access/ Social Inclusion	Developing ICT awareness among young and older generations, increasing the use of ICT facilities. The government wants to augment the number of public Internet access points (in public libraries, schools, post offices, etc.), as well as to enhance the penetration of ICT among households and enterprises.
Back-office optimisation	To formulate a uniform administrative data management and data model, to create and implement the governmental digital signature system.
Take-up	To integrate the information and telecommunications system and application with the government. To promote the use of electronic certificates, electronic settlement and payment systems.
Efficiency	To create an effective service-provider administration, an open, transparent and strong civil sphere.
eDemocracy	To develop a public information platform to keep Hungarians involved in the democratic process, to create a reliable electronic signature.

Current focus on	Main illustrative initiative
Service Delivery	Hungary's new eGovernment portal, http://www.Magyarorszag.hu (provides access to 56 interactive services)

Sources:

❑ Content Village (2004), *eContent in Hungary*, Content Village, Budapest (http://www.content-village.org/incacontent/upload/CP_Hungary_October_2004.pdf, accessed February 2005);

❑ Ministry of Informatics and Communications, (2003) *Hungarian Information Society Strategy*, Ministry of Informatics and Communications, Budapest (http://www.ihm.gov.hu/data/42303/mits_2003_eng.pdf, accessed February 2005);

Ireland

eGovernment declared objectives in last updated document	
Access/Social inclusion	Improving social inclusion, i.e. using eGovernment to address the problems of exclusion and disadvantage. Increasing the number of public Internet access points such as libraries. Improving ICT literacy campaigns; ensuring access to eGovernment services to people with disabilities.
Back-office optimisation	Giving support to cross-cutting process, adopting a government-wide approach to service re-engineering, coherent with the citizen-centred approach adopted. Integrating several departmental activities, enhancing the interoperability of the existing informative and operative systems of the different administrations.
Take-up	Adopting a citizen-centred perspective in eGovernment structure designing, together with a life-event approach in service delivery.
Joined-up government	Improving partnerships with private sector and non governmental organisations, both for services designing and delivery.
Efficiency	Public service re-engineering, through the breaking down of departmental boundaries is the occasion to eliminate duplication and obtain efficiency gains, also exploiting economies of scale.

Current focus on	Main illustrative initiative
Take-up	Public Service Broker: acts as a framework for the integrated delivery of public services through multiple channels (Internet, telephone, and agent) accessible 24x7 from a single point of contact
Take-up Back-office optimisation Administrative simplification	OASIS website (http://www.oasis.gov.ie), Online Access to State Information and Service, is a component of the Public Service Broker. It aims to provide an integrated online resource of public service information based around citizen-centred life events, available through a single point of contact
	BASIS website (http://www.basis.gov.ie), Business Access to State Information and Service, is the other main component of the Public Service Broker. It aims to provide an integrated online resource of public service information based around business-centred needs, and available through a single point of contact
Administrative simplification	Provision of a NSDI (National Spatial Data Infrastructure), with the aim of integrating spatial data (or geographically referenced information) with all wider information-management processes across Government.

Sources:
- Information Society Commission (ISC), (2003) eG*overnment, more than an Authomation of Government Services*, ISC, Dublin (http://www.isc.ie/downloads/egovernment.pdf,accessed February 2005);
- Department of the Taoiseach (Prime Minister),(2002) *New Connections, a Strategy to realize the potential of the Information Society, Government Action Plan*, Department of the Taoiseach, Dublin (http://www.taoiseach.gov.ie/attached_files/upload/publications/1153.pdf, accessed February 2005).

Italy

eGovernment declared objectives in last updated document	
Service delivery/ Take-up	Online provision of services for citizens and businesses: all "priority" services available on line, 30 million Electronic ID Cards and National Services Cards and 1 million digital signatures should be distributed.
Efficiency	Internal efficiency in government: 50% of expenditure on goods and services should be effected by e-procurement, all internal government correspondence should be sent by e-mail, while payment commitments and orders should be managed on line.
HR Development	Human resources development: all eligible public sector employees should obtain a certification of computer literacy; 1/3 of all training should be via e-learning.
Trust (Transparency)	Transparency objectives: 2/3 of all central government offices should offer citizens online access to administrative procedure files.
Quality	Quality objectives: provision of a system for measuring customer satisfaction for all offices that deliver services.

Current focus on	Main illustrative initiative
Back-office optimisation	Distribution of ID Cards and National Service Cards PCS (Public Connectivity System), which will allow electronic communication among all central and local government offices Participation to the IGN (International Government Network), sort of a continental "digital highway" for public administrations "Voice over IP" Project, which allows to transport vocal signals through the Web
Joined-up government	RCC (Regional Competence Centres), responsible for training, information and technical assistance to Local Authorities on e-government initiatives

Sources:

- Minister for Innovation and Technologies - Department of Innovation and Technologies (DIT), (2005) *Linee-guida in materia di digitalizzazione dell'amministrazione - 2005*, DIT, Rome, (http://www.innovazione.gov.it/ita/intervento/normativa/allegati/dir_040105.pdf, accessed February 2005);

- Minister for Innovation and Technologies - Department of Innovation and Technologies (DIT), (2002) *Linee guida del Governo per lo sviluppo della Società dell'Informazione nella legislatura*, DIT, Rome, (http://www.innovazione.gov.it/ita/documenti/socinfo11_06_02.pdf, accessed February 2005);

- Minister for Innovation and Technologies - Department of Innovation and Technologies (DIT), (2002) *L'e-government per un federalismo efficiente: una visione condivisa, una realizzazione cooperativa*, DIT, Rome, (http://www.innovazione.gov.it/ita/intervento/normativa/allegati/visione_condivisa_030408.pdf, accessed February 2005).

Latvia*

eGovernment declared objectives in last updated document	
Joined-up government	Improving cooperation between state institutions at different levels (national, regional, local). Developing transactions government-enterprises. Government-population.
Access/ Social Inclusion	Promoting widespread accessibility and affordability starting with school children and the development of their ICT skills. Implementing the state sector information portal. Implementing ID cards serving as a universal access mean to the information services.
Regulatoty Framework	Elaborating a legislative basis for eGovernment implementation.

Current focus on	Main illustrative initiative
Joined-up government/ inter-institutional cooperation	Provision of an Unified Information System for Local Government Development of a National portal, in frames of project "Baltic States Government's Data Transmission Network
Back-office optimisation	Mega-System (Integrated State Significance Information System), in order to harmonize significance registries data sets

*Lack of official documents in English version.

Lithuania

eGovernment declared objectives in last updated document	
Take up	Increasing the speed of services of public institutions and improving their quality by applying IT for data processing, management and service delivery through digital channels.
Regulatory framework/ Back-office optimisation	Modernizing the management of the State through computerized information sources, the creation of the adequate legal environment.
Access	Providing the public with factual possibilities to obtain information from all public authorities.
eDemocracy	Creating conditions for the development of the information society of Lithuania and to summit proposals, criticize and participate in decision making.
Current focus on	**Main illustrative initiative**
Service delivery	Internet Portal "eGate of the Government" www.epaslo ugos.lt www.govonline.lit , www.evaldzia.lt
Take-up	Electronic signature infrastructure
Back office optimisation	Integrated system of public registers

Sources:

❑ Ministry of the Interior, Information Society Development Committee, *Concept for eGovernment,* Ministry of the Interior, Information Society Development Committee, Vilnius (http://www.ivpk.lt/en_main-aktual.php?cat=40&gr=1&sub=6&n=10, accessed March 2005);

❑ Minister of Education and Science, (2001), *Resolution N°229 on the Approval of the Conceptual Framework of the National Information Society Development of Lithuania,* (Minister of Education and Science, Vilnius (http://www3.lrs.lt/cgi-bin/getfmt?C1=w&C2=130056, accessed March 2005).

Luxembourg

eGovernment declared objectives in last updated document	
Take-up	Creating new services for citizens, enterprises and civil society organisations.
Joined-up government	Reforming internal organisation, redefining inter-organisational relations, enhancing cooperation among administrative structures.
Back-office optimisation	Installing a performing infrastructure. Simplifying administrative procedures, around common standards.
HR Development	Defining new working positions within the existent administrative structure. Agents motivating and competence building.
Quality	Provision of a periodical evaluation system for eGovernment projects.

Current focus on	Main illustrative initiative
Back-office optimisation	National Public Administration Portal (www.eluxembourg.lu)
Service delivery	National on-line register for citizens Unique window for enterprises Income declaration and tax payment for citizens and enterprises e-procurement system (since now, only a feasibility study)

Sources:

- Ministry of Public Function and Administrative Reform, (2002) *eGovernment (Administration en ligne), Etat au 27/02/2002*, Ministry of Public Function and Administrative Reform, Luxembourg (http://www.gouvernment.lu/salle_presse/actualité/2002/03/5biltgen/egov.pdf, accessed February 2005).

Malta

eGovernment declared objectives in last updated document	
Access/Social Inclusion	Introduction of eGovernment Services easy to access in terms of speed, entry points, and multi-channel access.
Trust (Privacy and Security)	Guarantee of security in terms of authentication, fraud prevention and prevention of unauthorized hacking. Guarantee of individual privacy of users.
Efficiency/ Quality	Provide services faster, more efficient and effective and higher quality than conventional services. Parameters relative to service quality in respect of each service should be established and made public. Provide e-Government services more economic and cost-effective than conventional services.
Take-up	Services focus towards customer needs. Introduction of eGovernment services easy to use. EGovernment services consistent in terms of content and quality, across different delivery channels.
Regulatory framework	Adapting the normative framework.
EDemocracy	Use of feedback mechanisms for the engendering of electronic democracy.
Back office optimisation	Service integration and service rationalization. Scalable architecture and technology and common across delivery channels wherever possible. Development of a national central point or portal.

Current focus on	Main illustrative initiative
Administrative simplification	Certifikati.gov.mt Order certificates online Administrative simplification Servizz.gov.mt eCustomer care System Exams.gov.mt Examinations Applications VAT online services (Ird.gov.mt – Corporate Taxes online services, Social security calculations etc.)
Service delivery/Take up	Malta government network (MAGNAT) eGovernment payment gateway mGovernment Programme

Sources:

- ❑ Office of the Prime Minister, *eGovernment Programme,* Office of the Prime Minister, Valletta (http://www.gov.mt/egovernment.asp?p=110&l=2, accessed March 2005).
- ❑ eMalta Commission, *eMalta Vision,* 2002, Ministry for Justice and Local Government, (http://www.gov.mt/egovernment.asp?p=110&l=2 accessed march 2005)

Netherlands

eGovernment declared objectives in last updated document	
Take-up Back-office reorganisation	Improvement of the services delivered to the citizens, which encompasses the implementation of electronic service provision and the re-organisation of the public services offer in a demand-led perspective.
Regulatory framework	Action on regulatory burden (rationalization of departmental regulations and creation of global legal frameworks, with a significant increase of self-regulation mechanisms). IT solutions will be the leading factor for a better organisation of the central government in the four key action areas: policy formulation, policy implementation, supervision and enforcement, improving operations.
Joined-up government	Better integration between central government, provinces and municipalities through the adoption of IT solutions (operational tools: chain management, performance comparison, specific financial grants re-examination).

Current focus on	Main illustrative initiative
Service delivery	By 2005 all publications should be available per legal requirements
Take-up	Introduction of the chip card, with the eventual use of biometrics
Regulatory framework	"ICT and Administrative Burden Programme" (by 2006 the administrative burden on citizens and business will have been reduced by 25%)

Sources

- ❑ Ministry of the Interior and Kingdom Relations (BZK), (2004) *Towards the Electronic Government*, BZK, The Hague, (http://www.minbzk.nl/contents/pages/10255/towards-e-government_tcm70-49117.pdf, accessed February 2005);

- ❑ Ministry of Economic Affairs Telecommunications and Post (MINEZ), (2004) *The ICT Agenda of the Netherlands,* MINEZ, The Hague, (http://apps.ez.nl/publicaties/pdfs/04TP16.pdf, accessed February 2005);

- ❑ E-government Knowledge Centre (ELO), (2003) *'Transfiguring government' Action Plan*, ELO, The Hague, (http://www.elo.nl/elo/Images/action-plan_transfiguring-government_tcm70-45796.pdf, accessed February 2005).

Poland

eGovernment declared objectives in last updated document	
Service Delivery	To create a platform of public administration services in order to reach the average European level for online available services; to improve services already provided electronically.
Back-office optimisation	To create an integrated platform of public administration services.
Access/Digital Divide/Social inclusion	To provide public administration units with Internet broadband access, especially the ones in remote rural areas and in small towns; to take action to make the Internet access easier for all social groups, for the elderly and the disables.
Administrative Simplification	To promote the use of electronic signature also as a form of better communication between citizens and administrations and to ease the application for obtaining the European funds; to rationalised the maintenance of public administration databases, in order for them to being able to receive and deliver documents electronically.
Efficiency	To increase the efficiency of the services online (especially for succeeding in obtaining EU funds and IT support for processes, preparing services supporting applicants), reviewing the state of the IT infrastructure in ministries.

Current focus on	Main illustrative initiative
Back-office optimisation	Gateway to Poland
Service delivery	Filling social insurance documents with the ZUS (Social Insurance Institution) Tax repost forms Multifunctional Personal Document (MPD)
Joined-up government	Nationwide network linking central government departments to be completed by end 2005

Sources

❑ Ministry of Scientific Research and Information Technology, (2003) *ePoland – The Strategy on the Development of the Information Society in Poland for the years 2004-2006*, Ministry of Scientific Research and Information Technology, Warsaw (http://www.mnii.gov.pl/_gAllery_en/28/98/2898.pdf, accessed February 2005);

❑ Ministry of Scientific Research and Information Technology, (2002) *eGovernment 2005* (in Polish), Ministry of Scientific Research and Information Technology, Warsaw (http://www.mwi.pl/7konferencja/dokumenty6_Ven_h.php , accessed March 2005)

Portugal

eGovernment declared objectives in last updated document	
Quality	Increasing citizen satisfaction with public services (24/7 services delivered through several channels).
Efficiency	Achieve increased efficiency while reducing costs for both government and taxpayers. This objective involves process reengineering.
eDemocracy	Promote citizen participation in the democratic processes through better dissemination of information. Achieve international recognition of the quality of Portuguese eGovernment, thereby making citizens proud of the country's public service. Increase the transparency of the bureaucratic structure, thereby increasing citizen trust in public services.
Public sector optimisation	Promote the development of the information and knowledge society through an innovative public sector.

Current focus on	**Main illustrative initiative**
Back-office optimisation	National eGovernment portal (www.portaldocidadao.pt) Sectional portals (ex. www.juventude.gov.pt, www.e-financas.gov.pt)
eDemocracy	eVote pilot projects (European elections 2004 and legislative elections February 2005)
Take-up	ID Card project (Portuguese ID Card will feature a chip and a magnetic stripe storing personal information and biometric data
Joined-up government	"Digital Cities and Regions" Project, which should develop the Information and Knowledge Society at the regional level

Sources:

- ❑ Presidency of the Council of Ministers - Knowledge and Information Society Mission Unit (UMIC), (2003) *Qualidade e Eficiência dos Serviços Públicos: Plano de Acção para o Governo Electrónico*, UMIC, Lisbon, (http://www.umic.pcm.gov.pt/NR/rdonlyres/2EE26926-CC92-4FE4-AFCD-A9E2E1983E54/137/II_Plano_Accao_eGov.pdf, accessed February 2005);

- ❑ Presidency of the Council of Ministers - Knowledge and Information Society Mission Unit (UMIC), (2003) *Digital Cities and Regions Operating Guide*, UMIC, Lisbon, (http://www.infosociety.gov.pt/publications/guia_operacionalizacao.pdf, accessed February 2005);

- ❑ Presidency of the Council of Ministers - Knowledge and Information Society Mission Unit (UMIC), (2002) *Uma Nova Dimensão de Oportunidades: Plano de Acção para a Sociedade da Informação*, UMIC, Lisbon, (http://www.umic.pcm.gov.pt/NR/rdonlyres/B3FDD123-98AF-4F47-A10B-AFBEE46E25E3/138/I_Plano_Accao_SI.pdf, accessed February 2005).

Slovakia

eGovernment declared objectives in last updated document	
Service Delivery	To increase the level of government information available to citizens and companies and to introduce a wide range of modern and effectively provided public electronic services.
Back-office optimisation	To improve the functioning of all public databases and registers through their complete electronisation and switching to on-line services, making them available at a central public portal for citizens and firms.
Efficiency	To increase public services effectiveness and to make the process of introducing information technology into the public service more effective; to use technologies for a more effective use of public funds
Regulatory Framework	To introduced ITC services under a strongly organised common conceptual framework (a "centralised command").
Administrative Simplification	To simplify the requirements of public institutions toward the use of public services, by managing the whole process by information technology and potentially by introducing the so-called one-stop shops.
Trust (Privacy and Security/Transparency)	To interconnect the basic information systems of public administrations in a reliable and secure way, defining the standards of the data exchange between public administration bodies.
Access/Digital Divide/ Social inclusion	To wider access to the Internet and to increase the IT literacy levels and to provide more access to Internet for greater social inclusion of disadvantage groups of citizens.
Take-up	To introduce secure electronic identification cards.
Trust (Privacy and Security/Transparency)	To secure credibility and security to public electronic services and interconnect the basic information systems of public administration in an effective and reliable way, defining the standards for the exchange of data between different public administration bodies.

Current focus on	Main illustrative initiative
Back-office optimisation	GovNet, a governmental Internet-based data network
Service Delivery	Obcan.sk (Citizen.sk) portal providing online public services

Sources:

❑ Ministry for the Economy of the Slovak Republic, (2004) *Competitiveness Strategy for the Slovak Republic until 2010 - National Lisbon Strategy*, Martin Bruncko, Ministry of Finance of the Slovak Republic, Bratislava (http://www.finance.gov.sk/mfsr/mfsr.nsf/0/3b514e74b6468bf2c1256f6b00499822/$FILE/Strategy_SR.pdf, accessed February 2005);

❑ The Slovak Republic Government Office, (2004) *eGovernment Action Plan* (in Slovak), The Slovak Republic Government Office, Bratislava (http://www.elet.sk/brt/egovernment/vlastnymat.rtf, accessed February 2005).

Slovenia

eGovernment declared objectives in last updated document	
Service delivery	Accelerating the introduction of eServices (focusing on priority eServices, creating solutions and eServices which will be based on the best EU practice).
Joined-up government	Consolidating and assuring cooperation and coordination among institutions, competent for the development of eGovernment
Regulatory framework	Complying with unified EU recommendations and orientations with regard to the introduction of eServices in priority areas and the European Interoperability Framework.
Efficiency	Consolidating and optimising the expenditure of financial and other resources for the informatisation of public administration functions. Defining control points and indicators which will enable the Government to monitor progress and to take certain efficient measures, if necessary.
Back office optimisation	Harmonising, connecting, and integrating public-legal registers, records and preparing multi-purposeful support for public administration functions.

Current focus on	Main illustrative initiative
Administrative simplification	Project eTaxes eCertificates of impunity and eReferrals for the police
Back-office optimisation	eGovernment – unified State Portal Computer access to geodetic data

Sources

❑ Government Centre of the Republic of Slovenia for Informatics, (2003) *eGovernment Action Plan for the Period until 2004 adopted by the Government of the Republic of Slovenia on November 2003,* Government Centre of the Republic of Slovenia for Informatics, Ljubljana (http://e-uprava.gov.si/eud/e-uprava/en/akcijski_nacrt_e-uprave_do_leta_2004_1_3.doc, accessed March 2005);

❑ Government Centre of the Republic of Slovenia for Informatics, *Action Plan eGovernment up to 2004, Summery report of the Implementation of the Action Plan for the Period up to 14.09.2004,* Government Centre of the Republic of Slovenia for Informatics, Ljubljana (http://e-uprava.gov.si/eud/e-uprava/en/Pr_Povzetek%20izvajanja%20AN%20do%2014.09.04.pdf accessed March 2005).

Spain

eGovernment declared objectives in last updated document	
Access/Social inclusion	Facilitating users' access to public services and Internet, enhancing accessibility of government websites and the diffusion of public free access points.
Take-up	Giving impulse to the development of services by the users (interaction).
Joined-up government	Facilitating the information exchange among different administrations (at national, autonomous and local levels), enhancing back-office integration at the national level.
Back-office optimisation	Sustaining the internal process reorganisation within the public sector, breaking-down departmental boundaries, and redesigning services integrated around citizen's needs. Developing a technological infrastructure.
Regulatory Framework	Adapting the normative framework.

Current focus on	Main illustrative initiative
Access/Social inclusion	Creation of a State-owned company (red.es) for the implementation of the "rural public access points" programme, which aims to provide access to rural areas not covered by commercial technologies such as ADSL, cable or Wi-Fi Increasing the number of public Internet free access points, installing new access points in libraries, public offices of central and local administration
Take-up	National Identity Card (Documento Nacional de Indentidad): it is designed to be used for transactions with public administration as well as among privates, through its functions of identification and electronic signature Citizen's national portal (ciudadano.es): a unique access point to public services, available 24x7, adopting a citizen-centred approach, and allowing service personalization
Back-office optimisation	Development of a national public officer portal (Portal del Empleado Publico), a new Intranet common access point to internal information, shared by public officers from central and local administration Development of a portal for local administration, allowing data exchange between central and local administration on fiscal and cadastral information. It is designed to be progressively updated with new functions

Sources:

❑ Ministry of Public Administration, (2003) *Plan de Choque para el Impulso de l'Administración Electrónica en Espana,* Ministry of Public Administration, Ministry of Public Administration, Ministry of Science and Technology (http://www.csi.map.es/csi/pdf/plan.pdf, accessed February 2005).

Sweden

eGovernment declared objectives in last updated document	
Service delivery	Notion of "24-7 Agency", which refers to the services provided by public administration and its contacts with private individuals and businesses.
Joined-up government	Collaboration between the central government, municipalities and county councils.
Back-office optimisation	Data security, in order to afford satisfactory protection against both distortion and unauthorised use that can strengthen and bolster the citizens' confidence in the handling of information. Rational and purposeful joint structure for public sector's information management. Create a new government board with the task of establishing an interoperability framework for electronic communications and services between public authorities as well as between the authorities and the citizens.
Regulatory framework	Remove legal obstacles to electronic communication.
Quality	Optimise public services on-line delivery (during the last three years visitors to public websites are increasing dramatically).
Trust (Privacy and Security/Transparency)	Users must have scope for observing how cases are processed

Current focus on	Main illustrative initiative
Back-office optimisation Quality	Administrative policy action programme "Public Administration in the Service of Democracy"
Service delivery	On-line tax declaration, provided by National Tax Service

Sources:

❑ Swedish Agency for Public Management, (2004) *Towards the 24/7agency*, Swedish Agency for Public Management, Stockholm, (http://www.statskontoret.se/upload/Publikationer/2004/2004148.pdf, accessed February 2005);

❑ Swedish Agency for Public Management, (2004) *Public Administration in the E-Society*, Swedish Agency for Public Management, Stockholm, (http://www.statskontoret.se/upload/Publikationer/2004/2004148.pdf, accessed February 2005).

United Kingdom

eGovernment declared objectives in last updated document	
Service delivery	Optimisation of the ESD (Electronic Service Delivery): the Government's objective is that all of its services should be capable of being delivered electronically by 31st December 2005.
Efficiency Back-office optimisation	Creating a "mixed economy" market, in which public, private and voluntary sector providers can compete in order to cut government's delivery costs and to enhance civil society participation in designing eServices.
Back-office optimisation	Assuring interoperability between public administrations by fostering the adoption of Open Source Software (OSS). Change management: government departments and agencies need the incentives and organisational structures to deliver eServices.
Access/Social inclusion	Fostering social inclusion, taking into particular account usability and accessibility matters.
Joined-up government	Promoting local eGovernment, which should assure renewed economic and democratic participation mechanisms.

Current focus on	Main illustrative initiative
Service delivery	DirectGov.gov.uk (national portal) ESD quarterly reporting system
Efficiency Joined-up government	IEG (Implementing eGovernment) Programme
HR Development	"Knowledge Network", cross-government project whose work helps to improve and modernise the electronic delivery and sharing of information
Back-office optimisation	Creation of the e-Delivery Team (EDT), which is directly accountable to the Head of the Cabinet Office e-Government Unit and is taking forward the Government Gateway project Govtalk.gov.uk portal, whose purpose is to enable the Public Sector, Industry and other interested participants to agree specific operational standard and schemas

Sources:

- ❑ Cabinet Office e-Government Unit, (2004) *Open Source Software: Use within UK Government*, Cabinet Office e-Government Unit, London, (http://www.govtalk.gov.uk/documents/oss_policy_version2.pdf, accessed March 2005);

- ❑ Local E-government Team, (2002) *The national strategy for local e-government*, London, Office of the Deputy Prime Minister, London, (http://www.localegov.gov.uk/Nimoi/sites/ODMP/resources/20021127%20Final%20NS%20with%20cover.pdf, accessed February 2005);

- ❑ Cabinet Office - Performance and Innovation Unit (PIU), (2000) *e-Gov: Electronic Government Services for the 21st Century*, PIU, London, (http://www.ekt.gr/links/egov_docs/egov_reports_ft/uk_report_2000.pdf, accessed February 2005);

- ❑ Cabinet Office, (2000) *e-Government: a strategic framework for public services in the Information Age*, Cabinet Office, London, (http://www.policyhub.gov.uk/docs/modgov.pdf, accessed February 2005);

- ❑ Cabinet Office, (1999) *Modernising Government White Paper*, Cabinet Office, London, (http://www.policyhub.gov.uk/docs/modgov.pdf, accessed February 2005).

For·further·information·about·the·eGovernment·Unit¶
¶

For·further·information·about·the·eGovernment·Unit¶
¶

European·Commission¶
Information·Society·and·Media·Directorate-General¶
eGovernment·Unit¶
¶
Tel·→ (32-2)·299·02·45¶
Fax·→(32-2)·299·41·14¶
¶
E-mail → EC-egovernment-research@cec.eu.int¶
Website→europa.eu.int/egovernment_research¶
¶