



eGOVERNMENT

## European eGovernment Research Network

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*Work Package 3 Building a knowledge service on eGovernment  
research programmes*

#### **Authors:**

*David Osimo and Stefano Kluzer, Institute for Perspective Technological  
Studies (IPTS)*

*Marjan Turk, Slovenian Ministry of Higher Education (SLOMIS)*

*Alexander Nilsson, Swedish Governmental Agency for Innovation Systems  
(VINNOVA) and input from all eGOVERNMENT partners*

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eGOVERNMENT Coordinator: Mrs Madeleine Siösteen Thiel  
Postal Address: VINNOVA, SE- 101 58 STOCKHOLM, Sweden  
Visiting Address: Mäster Samuelsgatan 56  
e-mail: [info@egovernet.org](mailto:info@egovernet.org), Phone: +46 (0)8 473 3000, Fax: +46 (0)8 473 3005  
URL: [www.eGOVERNMENT.org](http://www.eGOVERNMENT.org) - [www.VINNOVA.se](http://www.VINNOVA.se)



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## Summary

This report integrates the main results of Work Package 3 of the eGOVERNET project: "Building a knowledge service on eGovernment research programmes". The main objective of the eGOVERNET project is to coordinate the creation of national eGovernment RTD programmes and initiatives while also encouraging the integration of existing national eGovernment programmes.

The objective of this specific deliverable is to present an integrated view of how eGovernment research is funded in the European Research Area, at national and regional level.

The authors first carried out a survey of research programmes on eGovernment in each country of the European Research Area, using several data collection methods. A cross analysis was then carried out to provide an overview of the main features of these programmes. For this purpose, a conceptual scheme was developed that identifies eGovernment research as being at the intersection of 3 policy areas: information society policies, public administration policies, and research policies. Furthermore, three categories of programmes were identified: those dedicated only, or mainly, to eGovernment research, those that explicitly indicate eGovernment as a research priority, and those where eGovernment is a potential research priority within other priorities.

The results show that eGovernment research is funded through fragmented funding streams, generally belonging to research programmes in the field of IST applications, but also within programmes for eGovernment implementation. Only 4 dedicated research programmes were found. While eGovernment is indicated as being the main priority for research in IST applications, actual funding of eGovernment research programmes is less than 1% of spending in eGovernment implementation programmes. However, alternative funding instruments, such as public procurement and institutional funding, are important.

The key features of the research programmes were then analysed and a gap analysis was carried out to assess to what degree current eGovernment research (described in the report) meets the needs of the stakeholders and programme managers, as collected in Work Package 2 of the eGOVERNET project.

The conclusions link to suggested policy options and present recommendations for building on and developing the work carried out in this report.

The annexes contain the complete gap analysis, the country fiches, and documentation on three dedicated research programmes.



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**List of abbreviations**

- ICT Information and Communication Technology
- IS Information Society
- R&D Research and Development
- GDP Gross Domestic Product





# 1. Introduction and project background

eGOVERNET ([www.EGOVERNET.org](http://www.EGOVERNET.org)) is a coordination action supported by the European Commission's 6<sup>th</sup> Framework Programme for Research and Technology Development, which aims to stimulate and integrate eGovernment research programmes in the European Research Area.

The main objective of the eGOVERNET project is to coordinate the creation of national eGovernment RTD programmes and initiatives and also encourage the integration of existing national eGovernment programmes. The consortium backing the eGOVERNET proposal represents organizations with national programming responsibilities for innovation and research in eGovernment in their home countries, which include both the old and the new member states and the associated states. The partners have come together with a view to coordinating their research policies and working towards a long-term strategy for eGovernment research.

eGovernment<sup>1</sup> is considered an important area of activity for achieving the renewed "Lisbon goals" because of its contribution to competitiveness, inclusion and quality of life.<sup>2</sup> Due to its strategic importance in shaping government modernization, eGovernment has been a very significant policy area over the last few years in Europe. According to the eGEP (2006), eGovernment expenditure in 2004 in European Member States totalled € 11.9 billion.

However, these high-level policy goals cannot be achieved by simply adopting existing Information and Communication Technology (ICT). For example, experience has shown that simply "putting the services online" does not lead automatically to successful take-up of these initiatives. In order to reap the socio-economic benefits of eGovernment, institutional and organizational change is also necessary.

eGovernment research to support this complex process has become increasingly important over the last few years, as shown by the growing number of conferences, journals and scientific societies.<sup>3</sup>

However, eGovernment research has been suffering from important shortcomings. The most significant one is the fact that the research community working in this area has, for a long time, been too fragmented between different countries, disciplines, and research phases. For this reason, it can be said that the impact of eGovernment research has been sub-optimal [13].

The European Commission has long recognized the importance of eGovernment implementation and research. It articulates its policy within the 3 areas of research, implementation and exchange of good practice.<sup>4</sup> eGovernment has been a particularly

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<sup>1</sup> eGovernment is defined by the project as "the application of ICT, organizational change and skills to Public Administrations (PAs) in order to promote modernization and innovation in the public sector."

<sup>2</sup> For a full analysis of the role of eGovernment for the Lisbon goals, see IPTS 2006.

<sup>3</sup> For example, eGovernment has become one of the most important tracks at eChallenges, DEXA, HICSS conferences. A digital government society has been created in both North/America and Europe. See also [13]

<sup>4</sup> These policies are now articulated mainly in the 7<sup>th</sup> framework programme for RTD; the Competitiveness and

important research area in the 6<sup>th</sup> Framework Programme, with a budget of around 46 M Euros for 2005/2006. The recently approved 7<sup>th</sup> Framework Programme maintains eGovernment as a general area of activity but does not devote a specific priority to it, at least not within the 2007/08 Work Programme. Instead, eGovernment research will be funded within other thematic priorities, such as security, cognitive systems etc, or through alternative measures, such as the ICT-related measures within the Competitiveness and Innovation Program, or the strengthening of cooperation between national research programmes, in the framework of the European Research Area.

This coordination between national research programmes in the ERA is precisely what the eGOVERNMENT project is trying to achieve.

## 2. Objectives and methodology

Within eGOVERNET's overall objective to establish a common framework for cooperation between national research programmes, this particular deliverable aims to present an integrated view on how eGovernment research is funded in the European Research Area, at national and (partially) at regional level.

In particular, the work aimed to:

- Collect data on how eGovernment research is funded in the European Research Area
- Identify commonalities, differences, gaps and possible good practice
- Present the results as a service to programme managers in EU member states

Of course, many of the key differences and commonalities of research programmes, and of related collaboration opportunities, are linked to general national R&D funding systems. eGOVERNET, however, only addresses the issues which are specific to eGovernment research.

After a short description of the methodology and the approach (Chapter 2), this report contains a comprehensive survey of research programmes in each Member State (see Annex III), a summary cross analysis (Chapter 4), and, also based on a gap analysis (Chapter 5 and Annex I), policy-relevant conclusions (Chapter 6).

### 2.1 Methodology

In order to meet the stated objectives, the authors carried out 4 main tasks:

1. a comprehensive data collection of existing research programmes,
2. a cross analysis of these programmes,
3. a gap analysis based on the needs expressed by key stakeholders in Deliverable 2.2 of the project, and
4. an integrated overview of eGovernment research programmes in the European Research Area.

Originally, the data collection was carried out by Vinnova and IPTS, through national contacts in each Member State.

However, reflecting the fragmentation of eGovernment research which is also present at national level, it emerged that no single person has an integrated view of how eGovernment research is funded in each country. Therefore, a mix of top-down and bottom-up data collection methods was used:

- Top-down: Desk-based analysis of existing surveys (ERAWATCH [9], CISTRANA [4], ALIPRO [1], IDABC [11])
- Top-down: Questionnaires and interviews with national decision makers in each country<sup>5</sup>

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<sup>5</sup> In particular, senior officials of research ministers, councils and agencies.

- Bottom-up: Questionnaires and interviews to researchers attending ECEG 06<sup>6</sup>
- Bottom-up: Questionnaire to regions (ERISA<sup>7</sup>)

This combination of data collection methods produced a comprehensive overview of main research programmes funding eGovernment research in all countries. The very nature of this exercise means that this compilation can never be considered all-encompassing and definitive: new programmes emerge, old ones are closed, and there are always new programmes which have to be added in due course.

This collection therefore represents not only a baseline for eGOVERNMENT but also the beginning of a continuous process of updating the information. In order to enable this updating, national fiches (see Annex II) will be available on a web-based collaborative platform, where national referents will be able to update the information (see [www.eGOVERNMENT.org](http://www.eGOVERNMENT.org)).

The gap analysis, described in Chapter 4, was carried out by the Slovenian Ministry of Higher Education and the full methodology is described in ANNEX I Gap Analysis.

## 2.2 The approach

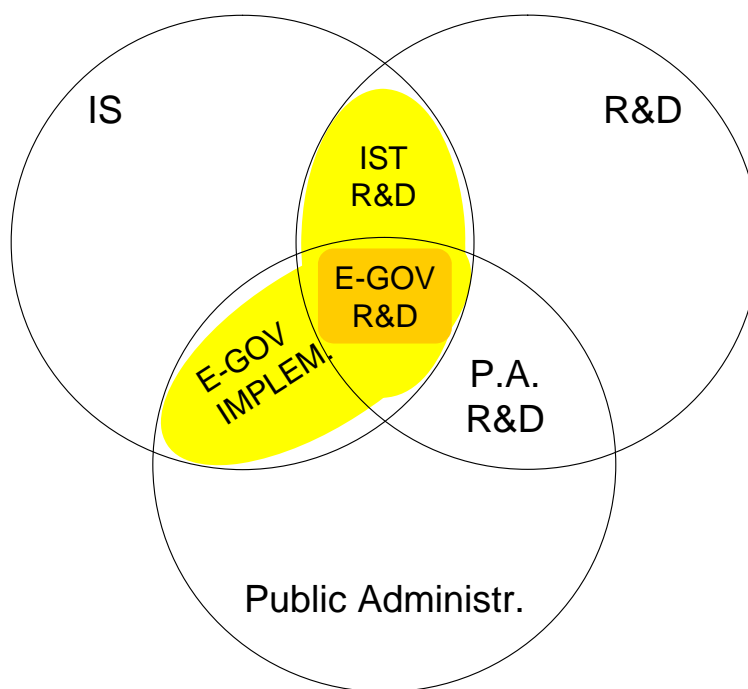
From the very beginning of the project, partners recognized that eGovernment research is funded through different financial streams, and often is not easily recognizable as such. A simple search for research programmes explicitly dedicated to eGovernment does not give significant results because very few countries have dedicated research programmes. eGovernment research is instead funded in a non-integrated way, through different and fragmented funding streams.

We therefore developed a conceptual scheme, described in Figure 1. It articulates 3 main policy areas that might include eGovernment research: Information Society, Research and Development, Public Administration. This revealed what different policies and actors support eGovernment research: policies and ministries for Information Society, Research and Development, Public Administration, and their articulation in Information Society Technologies R&D programmes, eGovernment Implementation programmes, and also, but marginally, Research in Public Administration sciences. For example, in one country eGovernment research would be one measure of the eGovernment plan, which would be part of the Information Society policy; in another country, it would be part of a research programme on general IST applications, which would be part of R&D programme, and so on. The goals and the approach of each actor and policy area are quite different and have a significant influence on the kind of research being funded.

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<sup>6</sup> European Conference on eGovernment, one of the main European events – see <http://www.academic-conferences.org/eceg/eceg-home.htm>

<sup>7</sup> The European Regional Information Society Association – see [www.ianis.net](http://www.ianis.net)



**Figure 1: A conceptual scheme of how eGovernment research is funded**

We recognised that there are two main sources of funding for eGovernment research. One source is IS (Information Society) research programmes which can sometimes give specific priority and budget to eGovernment as an application area. The other source is eGovernment implementation programmes, often part of Information Society or government modernization programmes which can contain specific measures for eGovernment research.

Furthermore, the different types of research are categorized in the 3 categories described in the methodology:

- dedicated eGovernment research programmes (from now on: DED), mainly in the central green area of the scheme;
- eGovernment research as one explicit priority in a wider programme for IST R&D or eGovernment implementation (from now on: EXPL), mainly in the yellow areas of the scheme;
- eGovernment as one potential application field of other R&D programmes which may concern generic technologies and applications, methodologies and so on (from now on: POT), mainly in the yellow areas of the scheme<sup>8</sup>.

One important implication of the different kind of programmes is that DED have dedicated budgets for eGovernment research, while in POT and often EXPL programmes, eGovernment research has to compete with other application fields.

<sup>8</sup> Both EXPL and POT pertain to general IST research or eGovernment implementation programmes (the yellow area of the scheme). The difference is that, only in the first case is eGovernment explicitly indicated as being a research priority.

This scheme has now been validated by the survey as being correct and useful to map and discover programmes funding eGovernment research.

## 2.3 The scope of the data collection

For the purpose of this project, a further definition of eGovernment research was made in the course of data collection, in order to overcome the specific ambiguities and doubts of the interviewees. Therefore, we hereby clarify that eGovernment research programmes or initiatives mapped by eGOVERNMENT:

- Do not include the simple implementation of eGovernment
- Might include different disciplines of equal relevance, with ICT as a central enabler. Therefore, even purely socio-economic research on eGovernment is included.
- Might include different stages of research, from basic research up to action-oriented research and the innovative integration of existing solutions. They should not include, however, the simple diffusion of ICT in public administration (as in the first point).
- Might be carried out in both the public and the private sectors, but eGOVERNMENT focuses on research funded through public sector programmes, at national, regional and local level. eGovernment research funded entirely by private sources is not included.
- Do not include the activities of the public sector that are specific only to the health and education sectors but might include cross-sector research.

However, as it supports concrete project goals of integrating European eGovernment research, some degree of flexibility has been applied in selecting and analyzing research programmes with a preference for including, rather than excluding, research programmes.

## 3. Overview of eGovernment research programmes in the European Research Area

### 3.1 The context of R&D and eGovernment in Europe

There are a few background conditions of diversity among EU Member States, in terms of institutional setting, research investment and eGovernment development.

As shown by the first chart (Figure 1), European countries differ in the overall institutional setting of their research systems. In some larger countries, the system is quite complex, with multiple programmes being funded by different ministries, councils and agencies (top right in the figure). Other countries, generally smaller, have established a single organization to coordinate single or multiple programmes (bottom line in the figure).

|                            |                               | Programme Orientation      |                            |                             |
|----------------------------|-------------------------------|----------------------------|----------------------------|-----------------------------|
|                            |                               | Single Framework Programme | Multiple Generic Programme | Multiple Thematic Programme |
| Implementation orientation | Multi agency/council/ministry | E I IE                     | B F                        | UK D                        |
|                            | Several agencies/councils     | P CZ LU GR                 | EE LY LV                   | NL AT FI SE                 |
|                            | Single agency/council         | PL CY MT<br>BG SK SI       |                            | NO DK HU<br>RN              |

**Figure 2: The different institutional setting of research funding in Europe (source: OPTIMAT 2005)**

As summarized by a recent study on the European Research Area, "the national landscape for R&D in Europe is extremely diverse, both in terms of relative investment in R&D and the systems for implementing national programmes". What is even more interesting for this context is that "the situation is much more harmonised and coordinated in basic research than in industrial and societal programmes." [15].

Also, the institutional landscape is highly dynamic. The CISTRANA report [5] points out that "it is evident that the various national actors and procedures in many countries have recently undergone something of a transformation. [...] Such changes do not however suggest that any sort of harmonisation process in relation to national procedures is underway or that these changes were intended to facilitate the rise of multi-national research programmes".

These differences are also visible in the level of investment in R&D as a share of GDP, and its growth over time. Figure 2 shows the catching up process in several new Member States and the high spending level (in % of GDP) of the Nordic countries and Germany.

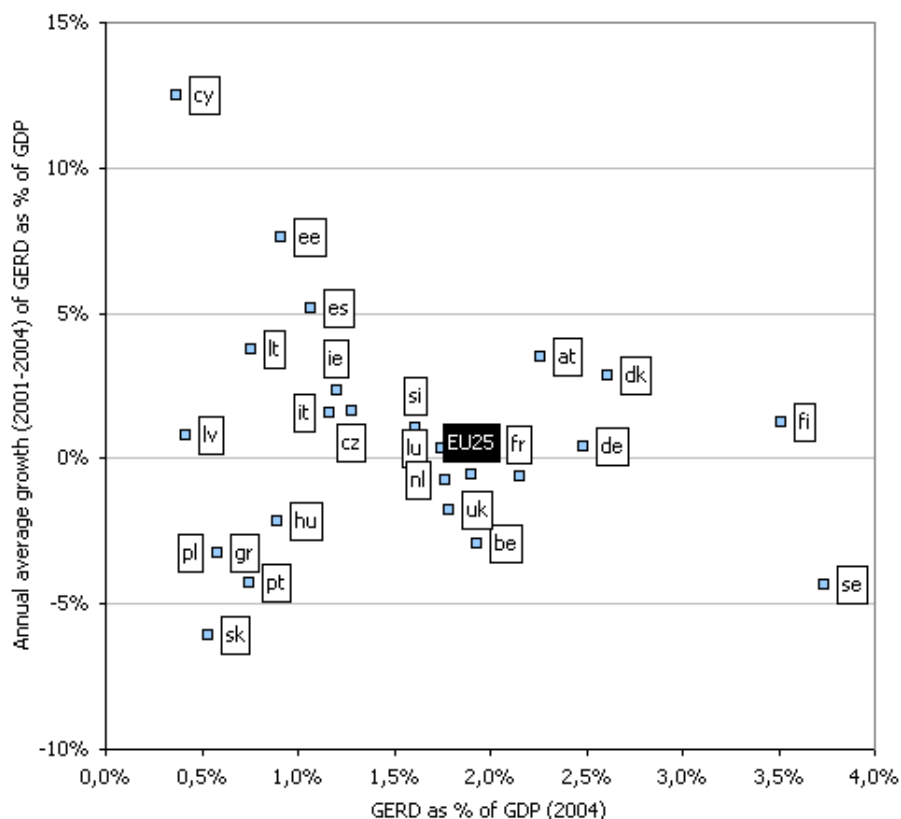


Figure 3 R&D expenditure in EU 25 (source: Eurostat)

Finally, Table 1 shows the differences in terms of availability of eGovernment services. The differences between countries are significant but should be considered with caution, as data only measure one aspect of eGovernment development, i.e. the availability of online services.

| Country | EGovernment online availability (%) | Country | EGovernment online availability (%) |
|---------|-------------------------------------|---------|-------------------------------------|
| AT      | 83                                  | HU      | 50                                  |
| EE      | 79                                  | BE      | 47                                  |
| MT      | 75                                  | DE      | 47                                  |
| SE      | 74                                  | LT      | 40                                  |
| UK      | 71                                  | CY      | 35                                  |
| SI      | 65                                  | CZ      | 30                                  |
| DK      | 63                                  | GR      | 30                                  |
| FI      | 61                                  | LU      | 20                                  |
| PT      | 60                                  | PL      | 20                                  |
| IT      | 58                                  | SK      | 20                                  |
| NL      | 53                                  | LV      | 10                                  |
| IE      | 50                                  | EU25    | 50                                  |

Table 1: availability of eGovernment services in EU25, 2006 (source: Eurostat)

At the same time, in the face of these differences, recent research by IPTS (2004, 2006) shows some common trends in terms of the content of research carried out in different EU countries. An extensive survey of eGovernment researchers and research projects detects a consistent taxonomy of research themes across countries, with back office issues such as data /knowledge management and interoperability being main research topics (continuous line circle in Figure 4). However, for future recommended research (dotted line circle in the figure), a general trend is visible: a move from researching the internal and operational implementation of eGovernment towards researching the impact of eGovernment on high-level policy goals, and the capacity to respond to user needs.

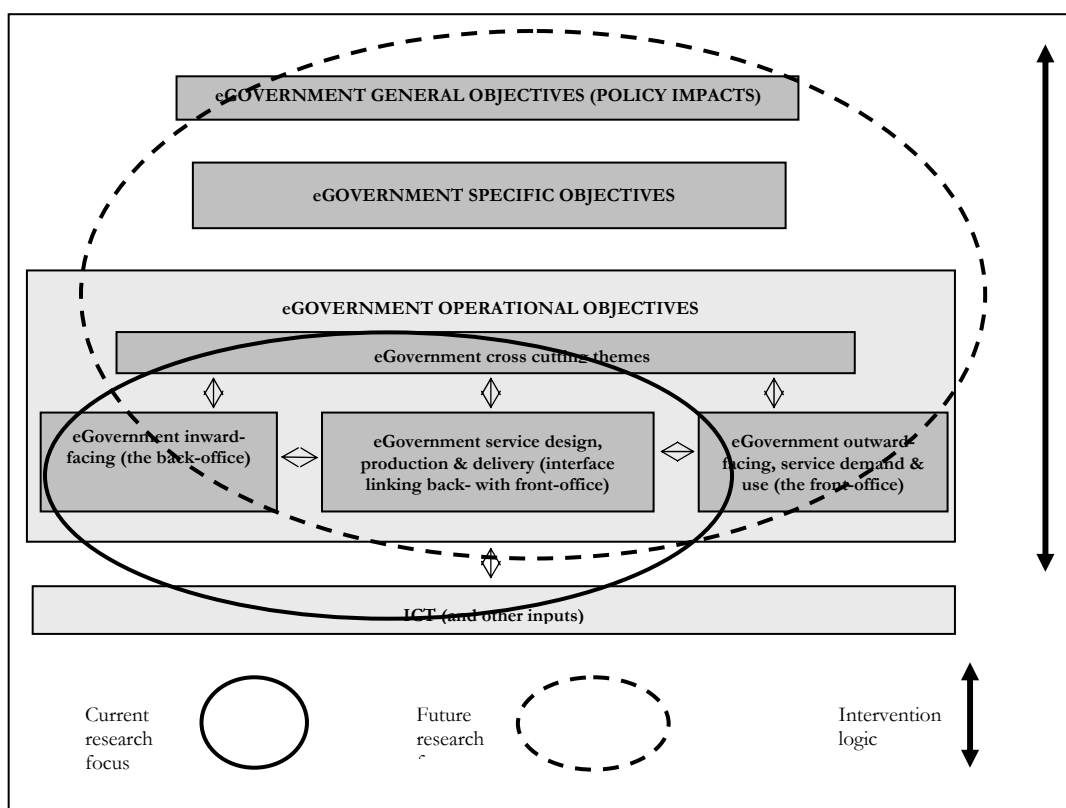


Figure 4: European current and future research themes (source: [13])

These patterns will also be taken up in the conclusions of this report, to assess whether current research programmes on eGovernment address emerging research topics.

To sum up, the background of this report is one of general diversity of the European landscape in terms of research institutions and programmes, investment in R&D, development of eGovernment. At the same time, eGovernment research is in a process of consolidation and changing research topics.

This is the background to be considered, both for the authors when collecting and analyzing the data on eGovernment research programmes, and for the readers when putting the data into perspective.

### 3.2 A country overview

Recent research by CISTRANA (2006) shows that eGovernment is frequently mentioned as a research priority within the IST research programmes. It is mentioned by 14 countries, and is the most common application theme together with eBusiness/eCommerce, before themes such as eHealth, eLearning and security and safety.

However, the fact that it is a political priority is not always reflected in actual funding and programmes. As mentioned by a Polish expert, "[the National Computerisation Plan (NCP)] does not include initiatives/programmes on eGovernment research but underlines the importance of eGovernment research. The plan does not introduce any financial mechanism". With respect to CISTRANA, eGOVERNMENT goes deeper in assessing whether eGovernment research is actually present not only in the overall policy goals but also in the operational funding programmes.

Below, we summarize the results of the country analysis, which is more extensively described in the country fiches (see Annex II). For each country, the table below briefly describes which types of programmes we found, while in the following section we address some specific issues of research programmes.

The programmes are described using the 3 categories described in the methodology:

- DED: dedicated eGovernment research programme
- EXPL: eGovernment as one explicit priority of a wider programme
- POT: eGovernment as one potential application field of a wider programme

It is clear that these three categories also indicate the degree of priority and visibility given to eGovernment research, with DED programmes giving the highest priority and POT programmes giving the lowest.

In most countries, several programmes directly or indirectly fund eGovernment research. At the very least, each country has research programmes funding IST research in general. Therefore, POT is the default option.

**Table 2: Country overview**

|          |   |
|----------|---|
| Austria  | POT programme: FIT-IT, within the national research programme.<br>National competence centre: e-GOV EGIZ centre.  |
| Belgium  | DED programme: Flanders region, managed through IBBT.<br>POT programme at national level  |
| Bulgaria | EXPL Programme (BG_ISNSP) but with limited budget (but only 50.000 €), within the National Research Programme, Bulgaria appears to have a<br>Also, some eGovernment implementation projects had R&D component |

|                |   |
|----------------|---|
| Cyprus         | POT; There are priorities in the National Research Programme where eGovernment research could fit in  |
| Czech Republic | EXPL programme, specifically addressing the theme of knowledge management in government)  |
| Denmark        | POT programme, with no explicit priority even for IST research (bottom-up)  |
| Estonia        | POT programme, as part of national research programme.<br>A competence centre on IT has been created, an Estonian eGovernance Academy   |
| Finland        | EXPL: the FENIX programme has a component on eDemocracy   |
| France         | EXPL the NRP CNRS supports interdisciplinary research programs, mostly on eDemocracy.<br>Many projects on the ground based on bottom-up financing.<br>Lots of activity at regional level. |
| Germany        | EXPL, parts of the Innovation Programme Multimedia are addressing eGovernment research.<br>A national competence centre has been established in the Fraunhofer Institut                   |
| Greece         | POT, part of the Information Society programme  |
| Hungary        | EXPL as the IT RD programme among its objectives aimed at supporting eGovernment research   |
| Ireland        | EXPL DERI programme on semantic web in government context   |
| Italy          | DED Emilia-Romagna region supports research in IST and eGovernment, as part of the IST strategy<br>POT within National Research Programme <sup>9</sup>                                    |
| Latvia         | EXPL, the State research programme " Information technologies" addresses government modernization   |
| Lithuania      | POT, the national research programme and the eGovernment implementation programme indirectly support eGovernment research as a priority   |
| Luxembourg     | POT, as part of national research programme   |
| Malta          | POT, National Research & Innovation Funding Programme includes ICT  |

<sup>9</sup> A mentioned by an Italian expert: "The NRP does not contain specific reference to the field of eGovernment. Nevertheless, there are a number of research areas, in particular in ICT, that are potentially relevant for eGovernment. But they are not connected explicitly to eGovernment R&D. Some projects financed within the framework of NRP (collected through a bottom-up approach) are related to eGovernment key research area, but they are not part of a coordinated research initiative (programme or part of a programme) in the eGovernment field.

|                |  |
|----------------|--|
| Netherlands    | DED Alliantie Vitaal Bestuur supports eGovernment research<br>POT ICT-Regie programme potentially supports eGovernment research  |
| Norway         | DED FIFOS, Demosreg and Høycom   |
| Poland         | POT Information Technologies priority in the National framework Programme  |
| Portugal       | POT, as the Information Society programme of Structural Funds contains a research priority potentially applicable to eGovernment |
| Romania        | POT, as the Information Society project contains a research priority potentially applicable to eGovernment                       |
| Slovakia       | EXPL, BIS programme  |
| Slovenia       | EXPL and several c) under National Research Programme  |
| Spain          | EXPL the programme "Services in Information Society" as part of national Research Programme                                      |
| Sweden         | DED eService in Public Administration  |
| Switzerland    | POT as part of National Research Programme   |
| United Kingdom | POT as part of National Research Programme, with no explicit priority (bottom-up)  |

A dedicated research programme is available in only a few countries: Sweden, Norway<sup>10</sup>, and in some regions, such as Flanders and Emilia-Romagna. While countries and regions with dedicated programmes are also among the most advanced in eGovernment implementation, there is no simple, direct correlation between a dedicated research programme and successful implementation. For example, countries like Denmark and the UK, while being advanced in terms of eGovernment implementation, have no specific programme funding for eGovernment research, and prefer to adopt a bottom-up approach to supporting research. What most countries and regions with DED programmes share is a policy approach which considers the public sector as being an actor of the innovation system, not only as being an enabler.<sup>11</sup> These countries show the presence of strong links – which seem to be lacking elsewhere - between those in charge of research policies and those in charge of IS policies and/or with eGovernment implementation programmes. Such links seem to have an organisational character (joint policy definition, steering groups etc. up to coinciding competences on the above matters within the same institutions) and also to reflect a strong and clear strategic orientation in eGovernment policies.

<sup>10</sup> The Netherlands have a programme but it is very small in budgetary terms (200 000 Euros)

<sup>11</sup> Regarding this approach, which considers an innovative public sector as having a positive impact on the overall innovation system, see also PUBLIN project (<http://www.step.no/publin>) and in Osimo et al., 2006 [7]

New Member States appear to be taking eGovernment research seriously, identifying it as a priority within IST research programmes and often supporting the creation of competence and research centres.

Also, both the desk-based analysis and the interviews confirmed that there are other funding streams which are particularly relevant for eGovernment research:

- Procurement (mostly for socio-economic research)
- Institutional funding
- Creation of centres of excellence
- Including research in deployment projects
- Bottom-up funding (no priority indicated ex-ante)

Overall, interviewees indicated that a significant amount of research is carried out in the research community, also funded by government, but not recognized or coordinated as eGovernment research. This leads to redundancies, lack of mutual improvement, and ultimately to sub-optimal use of public resources.

It is clear that fragmentation exists not only at European but also at national level. There is fragmentation of eGovernment funding streams between disciplines (socio-economic, legal and IST), between institutional levels (national and local), and between policy domains (R&D and eGovernment). Coordination efforts are, however, under way in many countries, often through the creation of an umbrella research/competence centre.

### **3.3 A cross-country analysis**

#### ***Type of programme (DED, EXPL, POT)***

5 countries have dedicated programmes, 11 have EXPL-type programmes, and the rest only have POT programmes.

However this does not necessarily mean that DED-type programmes are more relevant, efficient or effective in supporting eGovernment research. The type of programme does not say anything about the amount of money invested, the number of projects supported, the quality of the output or the impact this research has.

Certainly, one of the unanimously recognized advantages of DED programmes is their capacity to support the aggregation, coordination and structuring of the research field, thereby leading to more solid research. Interviewees also recognized that, in countries with POT funding, EU funds have a specific role in leading and promoting eGovernment research.

#### ***Institutional setting***

Most programmes are part of the national research funding, within the priority for IST research or through funding agencies and councils. In 5 cases (Bulgaria, Lithuania, Emilia-Romagna –Italy, Portugal, Slovakia), eGovernment implementation policies and projects also include eGovernment research, for example by "mainstreaming" research within each implementation project. This does not however necessarily imply that eGovernment

implementation programmes support research closer-to-market than research programmes. For example in Norway, the Research Council is funding prototypes and pilots too.

In many of the New Member States and Countries benefiting from the (EU) Cohesion Funds such as Portugal and Greece, the leading role is played by operational programmes for the Information Society within the Structural Funds programming.

In the countries where there is competence regarding R&D policies, regional governments are also found to play a role in supporting eGovernment research, usually closer to their actual implementation needs or related to specific local contextual features or research strength.

Difficulty in finding information appears to indicate clearly that there is often a lack of integration between research programmes and eGovernment programmes, where the managers of one are not fully aware of the opportunities provided by the other.

Generally, funding for eGovernment research has mostly come either from national research budgets or programmes. Some countries (such as France and the UK), at a certain point, have set IS as a new funding priority and, usually with a bottom-up approach, eGovernment projects have been submitted and funded (in this case, with a more academic perspective and focus), or when (e.g. Germany, Spain, Hungary) research budget/goals have been introduced within IS development programs (including those in NMS supported by Structural Funds), and in this case eGovernment is often explicitly identified (top-down) as a priority, normally with specific research goals (possibly linked to some implementation initiative, see Germany). On the other hand, it is important to underline the fact that eGovernment programmes are almost always entirely focused on implementation and do not seem to provide specific resources for research.

## ***Budget***

Existing DED research programmes are multi-annual and have a budget between 2 and 6 million Euros per year. This is generally met by equivalent co-funding by private players. It is interesting to note that the amount is similar at national level (Sweden and Norway, which however has several different programmes) and regional (Flanders and Emilia-Romagna), thereby showing the important role played by many EU regions in research funding.<sup>12</sup>

It is impossible at this stage to know the amount of resources invested in eGovernment research in EXPL or POT programmes, where eGovernment does not have a pre-determined budget.<sup>13</sup> However we can consider, for example, that a single research project funded in Austria and Finland would have public funding of around 100 000/200 000 Euros on average – and because of the small number of eGovernment research projects we can estimate that in no country with EXPL or POT programmes is the total amount of public funding above 1 million Euros.

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<sup>12</sup> This is confirmed by a recent speech of Commissioner Danuta Hubner, stating that "€40 billion – more than 10 per cent of the total [budget of regional policy] – will be invested specifically in innovation and R&D".

<sup>13</sup> A dedicated survey would be needed to assess how much of the funding of these programmes was directed at eGovernment research projects.

In this context, EU funds play a significant role. For the sake of comparison, the dedicated call for proposals within the 2005/2006 Work Programme provided co-financing to the value of 46 million Euros. But even this amount pales before an estimated 11.9 million Euros spent in eGovernment implementation in 2004 alone (see Table 3). The exact numbers are of course very disputable, as, for example, the very definition of eGovernment can vary among countries. Data refer to different years and dedicated programmes sometimes represent only a part of the funding as explained in section 3.1.

But the size of the difference is such that it leaves little room for uncertainty. For every Euro spent on implementing eGovernment, less than 1 cent is invested in related research programmes.

| <i>Type of programme</i>   | <i>Budget (M €)</i> |
|--|---------------------|
| Total budget of eGovernment research programmes in EU Member States, 2005-2006       | 34                  |
| Budget for eGovernment research in FP6 WP 2005/2006                                  | 46                  |
| eGovernment implementation programmes, EU Member States 2004 (latest available data) | 11,900              |

**Table 3: Spending in eGovernment research programmes and implementation in Europe (sources: eGOVERNMENT, EC, EGEP)**

Thanks to the work carried out by CISTRANA, we are also able to compare eGovernment with eHealth. Total implementation expenditure is much higher in eGovernment but there is (relatively and absolutely) much more funding for research on eHealth than on eGovernment, both at European and Member States level.

| <i>Type of spending</i>   | <i>eGovernment (M€)</i> | <i>eHealth (M€)</i> |
|---|-------------------------|---------------------|
| Budget for eGovernment/eHealth research programmes in Member States 2005/2006 | 34                      | 42                  |
| Budget for eGovernment/eHealth in FP6 WP 2005/06                              | 46                      | 75                  |
| Total IT spending <sup>14</sup> in EU (government and health sectors)         | 30,800                  | 5,700               |

**Table 4: Spending in eGovernment and eHealth research programmes vs. sector spending in IT. Sources: EGOVERNMENT, EC, EITO.**

We have no evidence, however, to claim that a similar proportion of research funding should be carried out in eGovernment and eHealth. These data could very well be interpreted as a reflection of the fact that eHealth needs more research than eGovernment. However, if we take both tables into account, it seems clear that funding for eGovernment research in the European Research Area is very small indeed, and it is possibly worrying that there is so much expenditure in implementation programmes without a proportionate effort to accompany this process with adequate scientific support.

<sup>14</sup> Because there are no data on eHealth implementation programmes, here use IT spending in the government and health sectors as a proxy of implementation programmes.

## *Stages of research*

There is a grey area between research, innovation and implementation in eGovernment. It is often difficult to assess how far genuine research is carried out within a programme rather than simple implementation. Interviewees often mention implementation programmes and projects as directly or indirectly funding research and in general as promoting innovation.

It is important to note that eGovernment research always takes place in the "applied research" area and generally qualifies as being needs-driven or user-driven research. One of the most quoted problems of eGovernment research is the lack of usage of research by practitioners, either because research does not produce the type of results needed by practitioners or because the practitioners are not aware of the research being carried out (see [13]).

Some countries, such as Norway, clearly address the different phases of research and development by supporting: applied research, prototyping, pilots and technology diffusion. Other countries, such as Sweden, require the coordinator of a research project to be a public authority in order to ensure an easier take-up of research output. In both examples, a key issue is the promotion of take-up of research results in order to overcome the separation between research suppliers and users, and between research and implementation.<sup>15</sup>

## *Multi-disciplinarity*

eGovernment is, of course, a multi-disciplinary theme. Most research programmes we have analyzed are embedded within an IST research programme and are therefore centred on technological research with marginal role or socio-economic research.

However, research programmes in Sweden, Norway and Flanders, and the 'Programme interdisciplinaire Societe' de l'Information' in France, deliberately require a multidisciplinary approach. We can therefore say that generally DED programmes have a more interdisciplinary approach than EXPL or POT programmes.

Also, interviewees point out that a very significant amount of investment, in all countries, is devoted to socio-economic research in support of eGovernment policy-making. This, unlike technological research which is funded through R&D programmes, is generally funded through alternative systems, such as procurement (e.g. Slovenia, the Netherlands), partnership with universities (Catalonia in Spain, the Netherlands) and research carried out internally by the public sector (Emilia-Romagna, Italy).

## *Thematic priorities*

Few research programmes are so detailed that they specifically define research priorities. Often, these are defined instead at project level which is outside the scope of our work.

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<sup>15</sup> This key problem is pointed out in the eGOVERNMENT report D2.2 eGovernment research programme management needs map.

The themes most commonly mentioned are eDemocracy (France, Norway, Finland), security, knowledge management (Germany, Czech Republic), semantic web in government context (Ireland), services to citizens and business (Sweden, Flanders), broadband application (Norway, Emilia-Romagna in Italy), and, of course, socio-economic studies in support of eGovernment policies (all countries). Interestingly enough, the research theme "understanding user needs", indicated by previous research as one of the key research challenges, appears not to be considered in any research programmes.

Often, DED programmes take a broader view, encompassing the whole public sector (for example, interoperability of social and health services). In this sense, research might help to overcome the "silo" effects of public services and meet future needs for increasing effort on cross-sector research (see also [13]). This is also demonstrated by the fact that all DED programmes encompass different institutional levels.

### ***Beneficiaries (including foreign)***

Most research programmes are open to different kinds of beneficiaries (public bodies, universities, business), and generally encourage projects presented by mixed partnerships. However it is quite clear that some programmes mainly aim to improve the functioning of public services (Sweden, Norway) while others tend to support universities and research centres (Emilia-Romagna, Flanders), and others (mainly POT) aim to promote innovation in the ICT industry.

### ***Evaluation procedures***

Open calls are generally used in research programmes, and proposals are evaluated by external experts. However, programmes aimed at universities sometimes use consultation/negotiation procedures (the Netherlands, Flanders-B) in combination with open calls. Finally, as previously mentioned, procurement procedures are often used for socio-economic studies for policy support.

More information on this will be provided in a separate project report within WP7 of eGOVERNMENT.

### ***Impact evaluation***

Most research programmes do not have a fully-fledged impact evaluation, mainly because of their recent foundation. However, interviewees point to several "lessons learnt". First, research programmes were often able to generate a significant leverage effect in stimulating private investment at least equal to public funding, for example in Norway and Emilia-Romagna. This opportunity can also be a risk: when the base of potential users of eGovernment applications is small and the market is fragmented, the involvement of the private sector remains a challenge.

Results are not easy to measure and the "double dividend"<sup>16</sup> provided by eGovernment research must be kept in mind. This consists of improving public services and stimulating the competitiveness of ICT sector. In this sense, there is continuous tension between short-term practical needs and long-term research goals, and between quick-fix solutions and basic research challenges [10].

Only Norway has carried out some impact evaluation of its programme for piloting broadband services to local government, which showed very encouraging results.<sup>17</sup>

More information on this will be provided in a separate project report within Work Package 5 of the eGOVERNMENT project.

### ***Research/Competence centres***

There is a widely felt need for consolidation and reaching a critical mass in order for eGovernment research to have an impact. Several countries have created, often in partnership with universities, some kind of eGovernment research hub, as physical or virtual research centres. This is the case, for example, for EGIZ in Austria, IBBT in Flanders, the Fraunhofer eGovernment Centre in Germany, and the eGovernance academy in Estonia). In addition, dedicated umbrella projects have been supported in order to integrate and structure eGovernment research in the UK, for example.

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<sup>16</sup> Austrian Council for Research and Technology Development, 2006

<sup>17</sup> See:

[http://www.hoykom.no/hoykom/hoykomweb.nsf/4a87ff3bf2c03cc38525646f0072ffa9/42de84fc9e2014aac125700c00497969/\\$FILE/Evaluation%20\\_e.pdf](http://www.hoykom.no/hoykom/hoykomweb.nsf/4a87ff3bf2c03cc38525646f0072ffa9/42de84fc9e2014aac125700c00497969/$FILE/Evaluation%20_e.pdf)

## 4. Gap analysis

The gap analysis was prepared by the Slovenian Ministry of Education on the basis of Chapter 4 of this document and the project deliverable D2.2 *eGovernment research programme management needs map*.

This chapter presents a short overview of the gap analysis where goals, identified gaps and measures are introduced (see ANNEX I Gap Analysis for a more detailed version).

The gap analysis is based on data collected in WP2 (Needs Analysis for eGovernment Research Programme Management) on the needs, and in WP3 (Building a knowledge service on eGovernment research programmes) on the current state. Both activities provided solid evidence through a solid method of data collection and analysis. Therefore, the identified gaps are not based on the personal opinion of the authors but on evidence and input from different sources. However, because of the loose and ever-evolving definition of the eGovernment research field, these gaps can and should be discussed, updated and finely tuned in successive project activities.

On the other hand, the measures suggested are based on a consolidated method but mainly rely on the interpretation of the authors. Therefore, suggested measures should be considered as policy options rather than policy recommendations and should be discussed by a wider audience of stakeholders.

### 4.1 Methodology

Gap analysis consists of a comparison between current and desired state in the field of eGovernment research programme management.<sup>18</sup> The differences between these two states – or identified gaps - have been transformed into measures which should be realised in some time frame in order to achieve desired state.

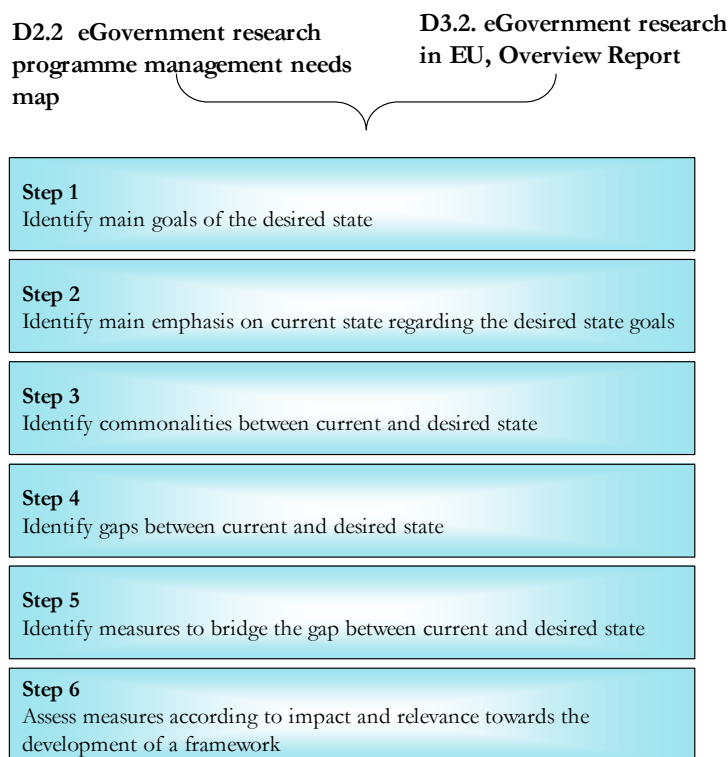
The gap analysis was done in the following main steps:

- Step 1 – Identification of main goals of the desired state in eGovernment research programme management (based on project deliverable D2.2).
- Step 2 – Identification of main emphasis on current state regarding the goals of desired state (based on data presented in the previous chapter and in ANNEX II: Country fiches).
- Step 3 – Identification of commonalities between current and desired state in eGovernment research programme management.

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<sup>18</sup> The methodology used in this work is based on Soft systems methodology (SSM), SWOT analysis methodology (Strengths, Weakness, Opportunities and Threats), ITPOSMO methodology (Information, Technology, Processes, Objectives and values, Staffing and skills, Management systems and structures, Other resources), and the methodology elaborated by the EGOVRTD2020 project.

- Step 4 – Identification of gaps between current and desired state in the field of eGovernment research programme management.
- Step 5 – Identification of measures which will help to bridge the gap between current and desired state in the field of eGovernment research programme management.
- Step 6 – Assess measures according to their impact and relevance for the development of a framework for eGovernment research i.e. according to impact on consolidation of eGovernment research management.



**Figure 5: Gap analysis methodology**

## 4.2 Summary of results

The gap analysis is articulated on the 8 main goals identified by the needs analysis in WP2 (Needs Analysis for eGovernment Research Programme Management), for which specific gaps which should be addressed.

- GOAL 1: Establish organization and research management infrastructure for eGovernment research activities
- GOAL 2: Define long-term eGovernment vision and strategy in correlation with research programme management

- GOAL 3: Define users and stakeholders and the relationship between them
- GOAL 4: Establish correlations between different types of research
- GOAL 5: Increase priorities of eGovernment research
- GOAL 6: Leverage technological advancement in terms of new information and telecommunications technologies, new business models and open source principles
- GOAL 7: Developed pan-European services
- GOAL 8: eGovernment research – European Research Area

Here we describe, for each of the goals, the gap and the suggested measures to address it.

### ***GOAL 1: Establish organization and research management infrastructure for eGovernment research activities***

#### **Identified gap**

The absence of such infrastructure for research management is evident but no measures have yet been taken to overcome it. Since this infrastructure should be established at EU level, it is necessary to get all EU member countries to cooperate.

#### **Measures**

- Establishment of research management infrastructure for eGovernment research activities at European level with:
  - clearly defined central management
  - centres of excellence at a national level
  - a single access point to reach all public agencies
  - define managing mechanisms that would enable ordering, financing, managing and finally fostering the use of eGovernment research results
- Establishment of research management infrastructure for eGovernment research activities at national level
- Establishment of interaction between academic researchers which would be reflected in a high applicability of research results to Public Administration
- Unification and connection of eGovernment research initiatives and activities within government departments
- Seamlessly connect different ICT systems
- Definition of eGovernment research landscape
- Definition of needs of knowledge and information from different user groups
- Discussion of the law problem
- Stimulation of European research collaboration and financing possibilities cleared.

## ***GOAL 2: Define long-term eGovernment vision and strategy in correlation with research programme management***

### **Identified gap**

One of the problems is that key government officials are usually not aware of the impact of research on the development of eGovernment. eGovernment research is not planned and usually depends on political decisions. The development of eGovernment research programmes is not correlated with defined long-term eGovernment vision and strategy. The general public and industry are not involved in the decision on which e-services should be developed next. Other major identified gaps are:

- definitions of eGovernment research areas are not clear
- not enough promotion and further development of eGovernment research management
- no consolidation of eGovernment research programmes.

### **Measures**

- Definition of a long-term eGovernment vision and strategy in correlation with eGovernment research programme management
- Clear definition of eGovernment research areas
- Sufficient promotion and development of eGovernment
- Consolidation of all eGovernment research programmes
- Advance planning of eGovernment research and projects
- No ad hoc political decisions regarding eGovernment development projects which is mainly reflected in the development of e-services with highest political priorities in a very short time, and the development of e-services easily adopted by public.

## ***GOAL 3: Define users and stakeholders and the relationship between them***

### **Identified gap**

There is no clear definition of users and stakeholders. This must be confirmed by all interested parties. A clear definition of the relationship among different users and stakeholders is also lacking. The needs of different users are usually not understood.

### **Measures**

- Clear definition of terms “users” and “stakeholders”
- Clear definition and strengthened relationships between different users and stakeholders
- Clear definition of government goals before building any eGovernment research agenda

- Understanding the needs of different users/stakeholders of eGovernment research
- Raising awareness among different actors on eGovernment research
- Leveraging involvement of various stakeholders

#### ***GOAL 4: Establish correlations between different types of research***

##### **Identified gap**

There is no clear correlation between academic research and the research needed by public administrations and the ICT industry today.

##### **Measures**

- Establishment of strong correlation between different types of research
- Identification of possible types and possible correlations among them
- Definition of demands regarding execution of research
- Definition of demands regarding research users
- Awareness of the existing distinction between academic research and research needed by public administrations and ICT industry
- Establishment of strong correlation between eGovernment research and eGovernment strategies
- Systematic needs identification for eGovernment research
- Definition of activities, priorities and responsibilities among those carrying out research
- Accomplishment of different research related to different research areas which would establish a foundation for the development of eGovernment in Europe

#### ***GOAL 5: Increase priorities of eGovernment research***

##### **Identified gap**

Stakeholders and key government officials are not aware of the importance of eGovernment research as regards the quality of eGovernment. eGovernment research is not a high priority. A consequence of the low priority given to eGovernment research is the low budget provided for research activities.

##### **Measures**

- Promotion of eGovernment opportunities, by governments, public administrators and others.
- Continuously develop competence.
- Ensure efficiency of administration systems and efficient use of resources.
- Benefit from commercial e-services.
- Define longer term perspectives for projects.

- Send important signals to politicians. This will improve the chances of getting funding.
- Define business opportunities in order to attract content providers.
- Assure a systematic approach to eGovernment development
- Increase the priority given to eGovernment research
- Ensure sufficient funding for conducting research

***GOAL 6: Leverage technological advancement in terms of new information and telecommunications technologies, new business models and open source principles***

**Identified gap**

The use of modern and advanced technology, business models and open source principles is not common today. Many ICT systems in public administrations are still not interacting as they are supposed to. Sometimes the reason for this is current legislation and sometimes it is weak compliance between different systems.

**Measures**

- All interested parties should stay open to new information and telecommunications technologies, new business models and open source principles.
- Seamlessly connect different ICT systems
- Stimulation of state of the art information usage
- Stimulation of modern telecommunications technologies usage
- Stimulation of new business models usage
- Stimulation of open source principles usage

***GOAL 7: Developed pan-European services***

**Identified gap**

eGovernment is a complex, multi-disciplinary issue that deals with technological, socio-economic, political, legal, psychological and several other aspects that influence eGovernment in general and are embedded in each eGovernment service. A consequence of inadequate problem-solving is apparent in the development of national eGovernment in many different ways, not always caused just by national, legal or some other objective, understandable reasons. There are too many cases of the wheel being re-invented.

Interoperability between local, regional, national and European administration is not fully developed at this point. Pan-European specifications are sparse and no systematic exchange of know-how and best practice exists yet.

Consistent architectures, common policies and standards are not present at this point.

**Measures**

- To prepare an overview of developed eServices in the EU

- To face challenges at the EU level (coordination of the eGovernment programme and creation of pan-European public values)
- To develop pan-European services
- To define legal frameworks and to eliminate legal barriers
- To unify the agenda of what services are needed for different countries
- To define common European eGovernment research agenda
- Ensure that socio-economic challenges do not impose essentially upon the field of (eGovernment) research and define measures for overcoming those challenges.

### ***GOAL 8: eGovernment research – European Research Area***

#### **Identified gap**

Cooperation between researchers, industry and public administrations is not tight enough. Cooperation is also because it is not stimulated by modern ICT where possible. ERA does not enable a single access point (possibly a web portal) where interested parties could find research results, published calls, possible ways of cooperation with other researchers, public sectors or industry at this point.

#### **Measures**

- Established cooperation and more open communication between the public sector (purchaser) and private companies (vendors)
- A united and coordinated research network should be established
- Encouraged and increased collaboration between researchers, public administration and industry (PPP)
- Strengthened ties between researchers, public administration industry and other users
- Defined common European eGovernment research agenda.

## 5. Conclusions and next steps

In these conclusions, we recall the main findings of the previous chapters and highlight possible strategic options in relation to these findings, which could be undertaken by eGOVERNMENT or other initiatives in this field. Finally, we point to ways of continuing the work presented here.

The data and analysis presented in this report confirm the diversity of European eGovernment R&D programmes. The first and paramount consideration is that eGovernment research, though undergoing a process of recognition and consolidation, is fragmented even within the Member States. eGovernment research is funded through programmes belonging to different policy areas, namely R&D, IS and public management. These different areas and actors have different approaches, strategic goals and instruments, belong to different policy networks and are therefore more difficult to coordinate. European efforts have played an important role in consolidating this research field. In Europe, it appears that there is now more integration at the level of actual research than at the level of research programmes. Research programmes in most countries therefore appear to be replicating, rather than reducing, the fragmentation of research by adding the fragmentation of funding streams.

In this sense, eGovernment research funding appears clearly divided between socio-economic and technological research. In most countries, programmes support only one disciplinary approach depending on the policy area where the programme belongs. Broadly speaking, POT and EXPL programmes belonging to research policies tend to support technological research, while programmes belonging to eGovernment policies focus more on socio-economic research. One of the successes of DED programmes is that they allow a multidisciplinary approach.

Investment in eGovernment research remains marginal. Most eGovernment programmes do not seem to have perceived a necessity to fund any research to accompany or support implementation. According to interviewees, this may be because implementation was seen largely as a technological process and, undoubtedly, much of the technology for eGovernment is perceived as being well-developed. On the other hand, the socio-economic and organisational aspects - concerning the end-users as well as with the changes needed inside the public administration (both in intra- and inter-institutional perspectives) - appear to have been underestimated, both in the actual implementation of eGovernment and as a potential area for research. Acknowledgment of their relevance, facing the often disappointing achievements of eGovernment implementation (e.g. on inter-operability in a broad sense) and low uptake of services by users, might be a reason behind the perceived growing interest in eGovernment research by high-ranking administration officials, mentioned above.

There is a paradox in eGovernment research funding. At the policy level, eGovernment research is mentioned as an important application field of IST research, as we have seen in chapter 3.2. At the same time, in the research community, there are increasing research activities on eGovernment. However only a minority of countries have a dedicated eGovernment research programme, and the budget devoted to eGovernment research is low. It appears therefore that research programmes and funding are a "bottleneck" between high policy awareness at the top and great research effort on the ground.

However, another important finding is that research programmes are not the only or the largest instrument for funding research. Experts agree that institutional funding, public procurement, partnerships with universities and the creation of dedicated research centres are very important in supporting eGovernment research. Public procurement in particular appears to be the most used, mainly in the field of socio-economic research for policy support, but also in some cases for technological research [14].

Further work for coordinating eGovernment research programmes should not overlook the role of public procurement and the other instruments mentioned for supporting eGovernment research.

In terms of research topics, key themes are emerging across countries: eDemocracy and eParticipation; security; knowledge management and the semantic web; and impact evaluation of eGovernment. When we compare this with future recommended research areas, described in the introduction on page 9, we see that the most important theme – "understanding user needs" - is not mentioned as a priority within existing research programmes. There is certainly the need for a more systematic and cross-country collaborative effort for defining the research priorities within eGovernment, including emerging themes such as "users needs" and building on existing work such as the one carried out by IPTS [13] and EGOVRTD2020 [17].

As described in Chapter 4, previous research in this project pointed to a set of specific needs to be addressed. In this report, a list of policy options to address these needs has been proposed, which should be taken into account when drawing up a common framework for eGOVERNMENT.

We have no conclusive evidence that dedicated research programmes are the best solution for supporting eGovernment research. We can say that dedicated research programmes are often successful in consolidating and integrating the research field, avoiding the waste of resources in duplicating activities and overcoming the separation between research and implementation, between socioeconomic and technological research, and between different research institutions. However we have also found alternative measures to support this coordination, such as partnerships, umbrella organisations, and soft coordination.

Finally, with regard to the best means of sustaining the research efforts described in this report, we have seen that fragmentation remains the main characteristic of eGovernment research, especially at programme level. At the same time, themes and problems of eGovernment research management are similar in different countries. Therefore, there is not only a need but also a clear benefit in continuing and consolidating the data collection and research integration efforts described in this report. Clearly, dedicated resources are necessary because of the difficulties in mapping relevant programmes. There are, however, 3 additional ways of facilitating the sustainability of this data collection and integration exercise. The present critical mass of information collected and analyzed provides a basis for integrating the resources of:

- broader data collection and integration efforts, in the framework of the European Research Area, such as ERAWATCH and CISTRANA. The simple "tagging" of eGovernment-relevant research programmes in these 2 initiatives can provide significant benefit to the eGovernment community.

- Managers of research programmes at national level, interested in ensuring the widest diffusion of information on their programmes, could update and complete the information collected by eGOVERNMENT. This is presented here in ANNEX II: Country fiches and it will be published on the project website.
- Last but not least, the people most interested in finding information on research funding are the researchers themselves. On a basis of mutuality, they could provide and share information on available research programmes, by updating and completing the information collected by eGOVERNMENT. Collaboration among researchers and between researchers and programme managers could prove to be the only sustainable solution for better coordination of eGovernment research funding.

For reaping the opportunities of these potential sources of information, new collaborative technologies such as wikis, blogs, content syndication and collaborative tagging could prove very beneficial.

## 6. Acknowledgements

We would like to thank all the people who answered our survey and gave their valuable time for our in-depth interviews. Their collaboration shows the importance attributed to eGovernment research and the real possibility for enhanced collaboration in the European Research Area.

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# ANNEX I Gap Analysis

See separate document on [www.egovernet.org](http://www.egovernet.org).



## ANNEX II: Country fiches

See separate documents on [www.egovernet.org](http://www.egovernet.org).

- A
- B
- BG
- CY
- CZ
- D
- DK
- EE
- EL
- F
- FIN
- HU
- I
- IRL
- ISL
- L
- LT
- LV
- MT
- NL
- NOR
- P
- PL
- RN
- SE
- SI
- SK
- ES
- UK



## **ANNEX III: Documentation on cases of eGovernment research programmes**

See separate documents on [www.egovernet.org](http://www.egovernet.org) .

- Norway
- Sweden
- Emilia-Romagna

## Annex IV DETAILS ON METHODOLOGY

### EXPLANATION OF 4 MAIN TASKS LISTED IN CHAPTER 2.1

#### 1. a comprehensive data collection of existing research programmes,

The data collection was carried out by the consortium from M3 up to M15 of the project.

Early work (up to M6) was carried out only on partner countries in order to frame the research by analysing available examples of research programmes. This led to the definition of a model (described in chapter 2.2) of how eGovernment research could be funded, to be included in the questionnaire. This model was discussed and validated with external stakeholders in the workshops of Brussels and Barcelona.

The second phase (M6-M15) enlarged the data collection to other European countries. For every country, it aimed at collecting information on the national situation of how eGovernment research was funded, along the 4 possible models:

- a) there is a dedicated research programme on e-government;
- b) e-government research is a priority in wider programmes;
- c) some specific e-government research themes (such as e-identity) are a priority of a wider research programmes (in ICT, law, socio-economic research etc.).
- d) there is no programme supporting e-government research

In case of a), b) or c), it collected basic information for each research programme:

- Name
- Short description
- Is it only devoted to e-GOV R&D or includes other themes?
- Responsible body
- Contact person and e-mail
- Web page
- Programme duration
- Budget from public sources
- Budget from private sources
- Thematic priorities within the programme
- Description of measures (direct funding, open calls, grants/loans/guarantees, pilot projects etc.)
- What and the procedure and methods for evaluation and selection of projects?
- Type of research (basic or development; socio-economic or technological; etc.)

- Direct beneficiaries: who can apply? (public authorities, researchers, industry etc)
- Programme making process , stakeholder consultation, and how the priorities were selected
- Is there an evaluation of the programme impact? If yes, describe the main impacts of the programmes and how they are measured.
- Additional information

Details on how the information was collected are provided in the next section.

## **2. A cross analysis of these programmes,**

In order to provide "an integrated view of the research programmes", the national programmes were analysed along a set of criteria:

- Type of programme (DED, EXPL, POT)
- Institutional setting
- Budget
- Stages of research
- Multi-disciplinarity
- Thematic priorities
- Beneficiaries (including foreign)
- Evaluation procedures
- Impact evaluation
- Research/Competence centres

## **3. A gap analysis**

The gap analysis compared the desired state, as described by the stakeholder in WP2 of the project with the existing status of research programmes as described in WP3.

Full details on the methodology of the gap analysis are described in Annex I, chapter II

## **4. An integrated overview of eGovernment research programmes in the European Research Area.**

The final task elaborated on the findings of chapter 2 and 3 in order to draw conclusions and underline challenges in need of policy attention, which were then taken up by WP6 as per project plan

## **EXPLANATION ON DATA COLLECTION METHODS USED**

The initial approach was to rely on a set of national contacts. However, it was soon clear that due to the lack of a national framework and the fragmentation of research funding, no single person has exhaustive knowledge of existing funding streams in each country.

A proactive effort in data collection, combining desk-based analysis and questionnaire-based data collection was needed in order to a) find relevant programmes and b) collect the relevant information on each programme.

With regard to the desk based analysis, the databases of CISTRANA, ERAWATCH, IDABC and ALIPRO were used in order to find out within general research programmes, ICT research programmes and eGovernment implementation programmes:

- programmes potentially including eGovernment research,
- their website if existing, accessed to obtain further information
- contacts for further information, to identify the key people to be interviewed by the questionnaire

With regard to questionnaire-based data collection, the basic questionnaire was used and sent to any relevant contact. The full list of people providing information is provided below.

The nature of the survey – not aiming at collecting views but at information collection; not aiming at statistical analysis – implied that no statistical sampling was necessary. However, as the goal was to obtain a picture as complete as possible, different kinds of sources were interrogated:

- national policy referents in the fields of eGovernment policy or research policy. This was based on the network of contacts of the project (the Interest group) and on additional contacts collected in the desk based analysis
- researchers: the questionnaire was sent to all researchers who participated to the European Conference on eGovernment 2006. Additional researchers were indicated by other contacts were interviewed.
- ERISA sent the questionnaire top its members through its mailing list in August/september 2006.

Information was submitted via e-mail, but often a phone interview was necessary because of the complexity and specificity of the research systems.

## RELIABILITY OF FINDINGS

The data presented here are the most reliable data available on eGovernment research programme because they rely on a unique combination of the best available sources of information.

On the one hand, they provide a comprehensive thematic analysis of existing larger datasets of research programmes: CISTRANA, ERAWATCH, ALIPRO.

On the other, data have been provided by a large network of contributors, from both research and government, from national and regional governments. Data have also been discussed and validated in 2 workshops (Barcelona and Prague) attended by more than 70 experts on eGovernment research.

Because of this, the authors are confident that most relevant funding programmes are described, with high confidence for the coverage of DED programmes, and decreasing confidence for EXPL and POT programmes, where the visibility of eGovernment research is lower.

The following limits of data reliability should be taken into account:

- There is no possibility to ensure 100% coverage of relevant research programmes, as there can always be a programme not known to the interviewees,
- Funding of eGovernment can be not visible at the level of programme documentation, but implemented at more specific and operational levels
- Some kind of data, such as budgets, are less reliable as sometimes refer to planned budget, in others to actual expenditure. In this case, this is duly indicated so in the analysis in order to enable decision-makers to take this into account.
- For language reasons, countries which do publish the programme documentation in English are better analyzed than others.

This collection therefore represents the best available collection of information available on how research on eGovernment is funded. A simple comparison with similar studies [17] shows the depth of the work that has been carried out within EGOVERNMENT.

As recommended in the conclusions, future work for updating these sets of information should:

- be integrated in larger data collection exercise, such as ERAWATCH;
- Aim at involving the managers of research programmes, and the researcher themselves, in updating the contents.

## ANNEX VI: QUESTIONNAIRE

### European Government Research Network

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#### Data Collection – eGovernment RTD programmes in EU Member States

Fragmented research-funding, low visibility and low trans-national coordination of eGovernment-research policies are some of the obstacles on the route to establishing a European Research Area in the eGovernment domain. European eGovernment research would benefit from a research strategy on the European level. It is important to stimulate eGovernment research in the Member States so that the benefits of technical innovation are directly fed into change in administrations.

The EU project eGOVERNMENT, started 1st January 2006, aims at supporting the creation of national eGovernment RTD programmes, as well as stimulate the integration of existing national eGovernment programmes. The consortium behind eGOVERNMENT represents organisations with national programme responsibilities for innovation and research in eGovernment in their respective countries, including both the old and the new member states and associated states. The participants are the Czech Republic, Ireland, Italy, Lithuania, Norway, Poland, Slovenia and Sweden. The Institute of Perspective Technological Studies, part of the European Commission DG JRC, brings a European level perspective to the consortium.

We would like to ask you help in mapping existing e-government research programmes. We have therefore designed this simple form, which we would like to ask you to fill in with the information you have. Any additional reference and suggestion is welcome.

Please send the answer by September 15<sup>th</sup> to [Alexander.Nilsson@VINNOVA.se](mailto:Alexander.Nilsson@VINNOVA.se)

For further information, and an electronic version of the form, check [www.egovernet.org](http://www.egovernet.org) or contact [Alexander.Nilsson@VINNOVA.se](mailto:Alexander.Nilsson@VINNOVA.se)



## Definitions

### eGovernment

“is the application of ICT, organizational change and skills to Public Administrations (PAs) in order to promote modernization and innovation in the public sector.” [DOW p.5]

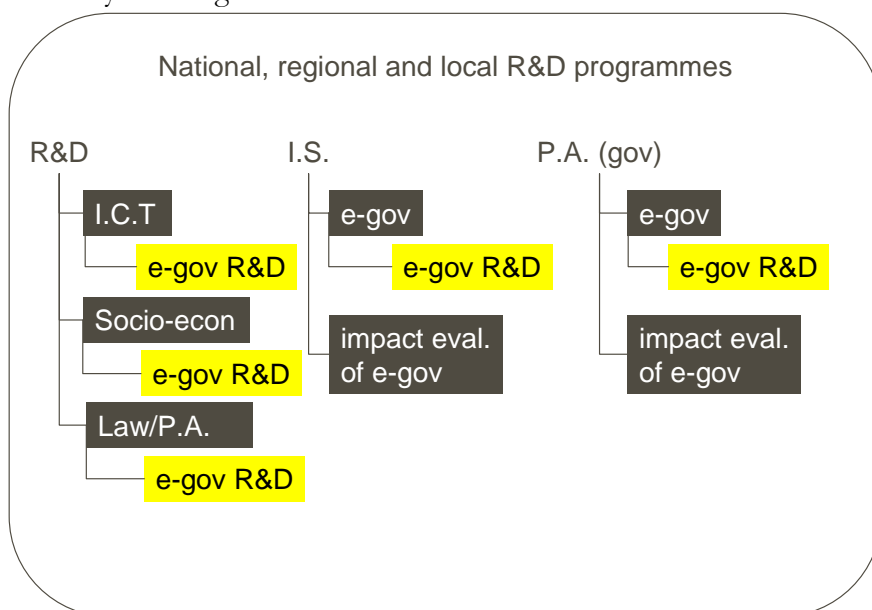
### eGovernment RTD

- Does not include the actual implementation of e-government
- Includes different disciplines with equal relevance, with ICT as a key enabler
- Includes different stages of research, from basic research up to action oriented research and the innovative integration of existing solutions. Does not include the diffusion of ICT in the public administration
- Is carried out in both the public and the private sector, but the eGOVERNMENT focuses on research funded through Public sector programmes
- Does not include the activities of the public sector that are specific only to the health and education sectors

## The scope of the data collection

We have also to make sure that we include all relevant disciplines; therefore we have to assess research policy not only in the field of IT but also socio-economic and legal disciplines.

Finally, we have to include also research programmes at the regional and local level, provided that they fund e-gov R&D.



**Figure 1.** The figure shows the domains that have to be covered by this survey. E-Gov R&D can be funded by different programmes, typically: Research and development policy; Information Society policy (including e-government policy) and Public Administration (modernisation of public administration, etc).

QUESTIONNAIRE ON E-GOVERNMENT RESEARCH PROGRAMMES

|  |
|--|
| Details of respondent<br>Name .....<br>Position .....<br>Country .....<br>e-mail ..... |
|--|

*How is e-government research financed in your country?*

- a) there is a dedicated research programme on e-government (at the national and/or sub-national level)
- b) e-government research is a priority in a wider programme (e-government, ICT, technological R&D, socio-economic R&D etc.)
- c) some specific e-government research themes (such as e-identity) are a priority of a wider research programmes (in ICT, law, socio-economic research etc.)
- d) there is no programme supporting e-government research

Other: specify .....

**In case you selected d)**, please indicate, if possible, the name of a programme manager who could be interested in developing an e-government research programme. This could usually be a manager of R&D programme, e-government programme, Information Society programme.

Name .....  
 Position .....  
 Contact information: .....

**In case you selected a) b) or c)**, please fill one of the following tables for each of the programmes concerned.

|  |  |
|--|--|
| <i>On a national, regional and local level, please describe EACH programme that support e-Gov RTD (replicate as necessary)</i> |  |
| <b>No 1.</b>   |  |
| NAME   |  |
| Short description  |  |

|  |  |
|--|--|
| Is it only devoted to e-GOV R&D or includes other themes?  |  |
| Responsible body   |  |
| Contact person and e-mail  |  |
| Web page   |  |
| Programme duration   |  |
| Budget from public sources   |  |
| Budget from private sources  |  |
| Thematic priorities within the programme <sup>19</sup>   |  |
| Description of measures (direct funding, open calls, grants/loans/guarantees, pilot projects etc.)                             |  |
| What and the procedure and methods for evaluation and selection of projects?   |  |
| Type of research (basic or development; socio-economic or technological; etc.)   |  |
| Direct beneficiaries: who can apply? (public authorities, researchers, industry etc)   |  |
| Programme making process, stakeholder consultation, and how the priorities were selected                                       |  |
| Is there an evaluation of the programme impact? If yes, describe the main impacts of the programmes and how they are measured. |  |
| Additional information   |  |
| <b>No 2, 3 etc.</b>  |  |

<sup>19</sup> It's possible to refer to key research areas listed in [http://europa.eu.int/information\\_society/activities/egovernment\\_research/focus/index\\_en.htm](http://europa.eu.int/information_society/activities/egovernment_research/focus/index_en.htm)

|               |  |
|---------------|--|
| Same as above |  |
|---------------|--|

*Are there any planned activities or expected changes relevant to e-Gov RTD, priorities and policy development in your country over the next years?*

|  |
|--|
|  |
|--|

*Are there any centres of excellence on e-Gov RTD*

**For each: [Name] – [Contact information] – [e-GOV work] – [specific theme of Competence]**

|  |
|--|
|  |
|--|

## ANNEX V: RESPONDENTS (NOT PUBLIC)

We hereby list only the people that actually provided information.

|    |  |
|----|--|
| AT | Herbert Leitold (EGIZ)<br>Josef Malkolm (Ministry of finance)                                  |
| BE | Van Gils Diane (Fedict)<br>Nico Verplancke (IBBT)<br>Hans Arents (National government)         |
| BG | Boyan Jekov (CCIT)   |
| CH | Gianluca Misuraca (EPFL)<br>Christoph Glauser (IFAAR)<br>Alain Sandoz (Vauban Techn.)          |
| CY | Kypros Economides (Research Promotion Foundation)  |
| CZ | egovernet partner  |
| DE | Ernst Burger (BMI govt)<br>Dirk Arendt (Fraunhofer)<br>Olaf Katenkamp (WissenMedia initiative) |
| DK | Jeremy Millard   |
| EE | Tarmo Kalvet (Praxis)<br>Karin Rits (Ministry of economy)                                      |
| ES | Museros Recatala, Jose Maria (MITYC)<br>Jose Esteves (IE.edu)<br>Jaime Castellano (RED)        |
| FI | Klaus Oesch (Fenix programme)<br>Paaso Pia (TEKES)   |
| FR | Jean-Gabriel Ganascia<br>Amar Lakel (univ Bordeaux)<br>Patrice Flichy (Univ Marne la Vallee)   |
| GR | George Kordelis (Archetypon)<br>Yannis Charalabidis (univ of Athens)                           |
| HU | Peter Bakonyi (MTA SZTAKI)<br>Bottka Sándor (nkth.gov)   |
| IE | egovernet partner<br>John McAleer (south west regional authority)                              |
| IT | egovernet partner  |
| LT | egovernet partner  |
| LV | Anatolijs Zabašta (Ministry of electronic affairs)   |
| NL | Barthel, drs. J.P. (ictregie.nl)<br>John Kootstra (Minbzk)                                     |
| NO | egovernet partner  |

|    |  |
|----|--|
| PL | egovernet partner<br>A. Bruzda (malopolska region)   |
| PT | Jaime Quesado (MCTES.pt)   |
| SE | egovernet partner  |
| SI | egovernet partner  |
| SK | Milos Cebik (EEIP a.s.)  |
| UK | Paul Foley (De Monfort University)<br>Nicolas Guernion (EPSRC)<br>David Newman (Belfast univ)<br>Roger Burrows (Univ York) |