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# Top of the web

## User Satisfaction and Usage Survey of eGovernment services

December 2004



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### **Note for the Reader**

Readers should note that the report presents a snapshot based on a voluntary survey of six countries and services. The sample is therefore not intended to provide full statistical coverage but has shown consistent results between the 2003 and 2004 survey. Any extrapolation of findings to show potential impact for E15 or EU25 should be considered in that context.

Information in the survey can refer in different parts of the report to either a subset of EU countries, EU15 or EU25

# 1. Executive Summary

## Objectives

E-government and public e-services<sup>1</sup> have been on the international agenda for several years now, but how far has Europe progressed when it comes to the usage of public e-services? E-services have been implemented or launched by all EU countries, and the range of initiatives is continually developing. But there are still remarkably few statistics on the usage of the individual e-services compared to services offered off-line. There is also very little information about the benefits gained by the citizens and business using the services.

This report presents the results of a survey of more than 48,000 actual users of a range of e-services in a number of countries. The survey considers their usage of, and satisfaction with these services and gives some indications of where we are, where we could be if we follow the current leaders, and goals that we could aspire to in the future.

It also provides an indication about the time and, therefore money, saved by citizens and business thanks to the use of the eGovernment services analysed in the survey.

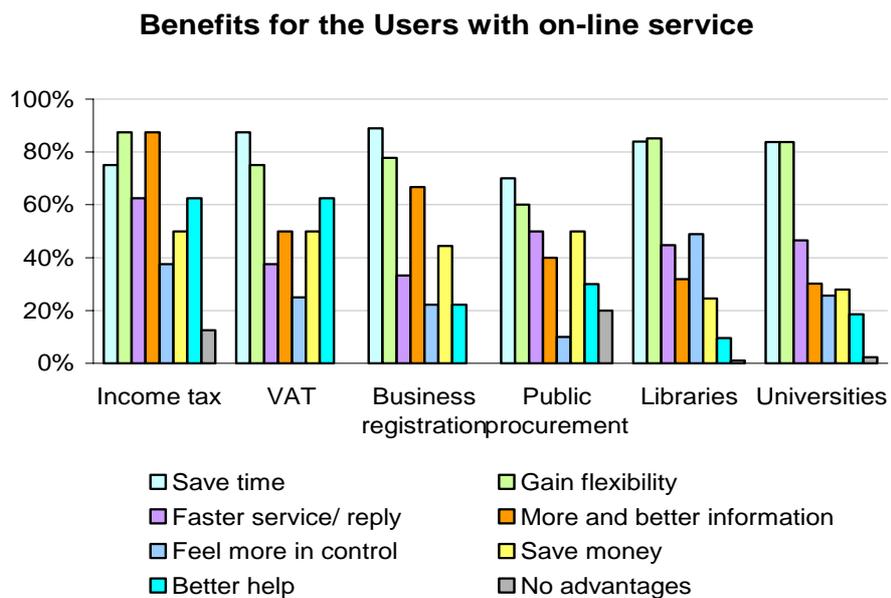
Economic savings are also estimated by multiplying the time saved by average wages. This is only a rough indication and doesn't take into account economic and social benefits gained by freeing resources which become available for productive economic activities.

For example, in the case of the online **income tax declaration** the potential **savings in EU15 are more than 100 million hours** of citizens each year.

For online **VAT declaration**, about **10 € are saved per online VAT transaction** with a potential for **savings in the EU25 above half a billion €**.

However, saving time and money are not the only benefits perceived by users. Other benefits such as gaining flexibility, faster service/reply, etc. are also considered as essential. As way of example please see below one of the tables which is discussed later in the document.

**Figure 1-1: Service types – advantages with on-line services**



<sup>1</sup> eGovernment services for citizens and businesses

The survey consisted of two phases:

- Gathering information from service providers on the extent to which public services are being used via on-line channels compared to traditional channels;
- Analysing how well these on-line services are meeting the needs and expectations of the actual users, through an online questionnaire linked to the service.

The survey has been designed to engage and inform the service providers (normally Public Administrations). They have been involved in gathering key information and the evaluation they received from their users. Through this report, the survey also presents the potential value of developing the e-services, as well as indications of how other service providers work with the quality of their websites.

The survey is not intended to provide a complete picture on the actual usage of e-government in Europe, rather a snapshot of the opinion of a significant number of actual users of current public e-services.

### **Study methodology**

The study methodology comprises the measurement of the usage of on-line e-government services and their comparison with usage through traditional channels to calculate the on-line percentage. This indicates the current take-up as well as the potential for further take-up. It is in principle a simple calculation, but as we have experienced, both in studies from last year and the previous years, many of the e-service providers have not yet reached the level of maturity where they monitor on-line transactions. This measurement is then supplemented by a survey of actual users to give a measure of user satisfaction and provide information on the benefits users actually realised. By applying values to these benefits (typically cost and/or time saving) and considering the potential for further take-up, we can obtain indicative benefits for developing the services further.

In order to obtain high response rates, the 2004 survey has focused on six specific services:

- Reporting personal income tax returns;
- Reporting business VAT returns;
- Registering a new business;
- Submitting a proposal for a public procurement
- Searching a public library catalogue;
- Enrolment in higher education.

These have been chosen for their maturity and as a range of differing types of services. By taking these, we are able to quantify the status of the take-up and satisfaction for some of the frontrunner services and indicate some potential for the development of e-government in Europe. 253 e-service providers answered the questionnaire about the usage of their on-line transactions.

The study on *user satisfaction* is based on a large scale, on-line survey among users of public websites containing public e-services. The survey measures quality as *user satisfaction* and the user's perception of usability, benefits and value of the service. A total of **48,228 users** answered the questionnaire<sup>2</sup>, with 19,896 answers originating from citizens and 28,332 from business users. While the 48,228 responses are not a representative sample, they come from a large heterogeneous group of respondents spread across countries and types of services. The results are therefore interesting and of value as they present the largest survey so far on how the users of European websites perceive the benefits of public e-services. Although only a snapshot, our experience indicates that the results are replicable and robust. In fact the results of this second survey are consistent with those of the first survey results from 2003.

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<sup>2</sup> For more information about the weighing of and securing the validity of data, see Section 2.4.2.

### **Findings of the study on usage, on-line percentages and service value**

High on-line percentages in themselves are not always seen as a success criterion, but at this stage of developing on-line services, it is still an important factor. It is therefore surprising that there are still remarkably few statistics on the usage of the individual e-services compared to services offered off-line. The study found the following indications of usage for the services considered:

- **Reporting personal income tax.** The usage of this service on-line ranged from 1.3million to 30 million transactions per year. The on-line percentage is on average around 5-10% with the EU (15) leaders at around 30-35%. The average user saved 71 minutes, representing a saving of 7.3 million hours in 2003. According to service providers, maximum expected take-up could be as high as 80-90%, indicating a potential benefit of ore that 100 million hours per year for EU(15) citizens.
- **Reporting business VAT.** Transaction numbers range from 440,000 to 3 million per year representing from 3% to 45% on-line, with an average of 17%. With an average time saving of 38 minutes per transaction, this saved businesses approximately €29,3 million in 2003. Service providers indicate maximum take-up could be around 70%, with some indicating it could be as high as 90%. This offers significant potential for savings to more businesses. At €10 saving per transaction, this could be more than 230 million € per year for EU15.
- **Registering a new business.** For business registration, the on-line percentage is fairly high, up to 40%. However, there are administrative challenges in developing this service area. Nevertheless, just as in the reporting of VAT, the time saved by businesses has a monetary value, in this case €2.2 million in 2003.
- **To place a proposal concerning public procurement.** There is still much work to be done on the supply side, before it is possible to effectively measure the demand side. Within public procurement, half of the participating service providers point to improving efficiency as the main reason for developing e-services. This indicates that *the back office improvements on efficiency are equally important for the development of e-government* regarding this service.
- **Public libraries (Catalogue search).** Participating public libraries with a maturity level 3<sup>3</sup> service, have an on-line percentage under 5%. Libraries on maturity level 4, have an on-line percentage well above 5% with the majority above 50%. There is a clear connection between high maturity level and high on-line percentages, indicating that fully mature services are more successful when it comes to getting the users to go on-line. User value is also high, with users saving on average 81 minutes, representing a saving of 1,021 working years in the countries surveyed. In other words, *when you are in the public e-library business you have to go all the way and provide the full service.*
- **Universities (to sign up for advanced studies).** Because there is a large group of service providers who do not know how much the e-services are being used (mainly true for services on maturity level 2) and because there are big differences on the maturity levels and on-line percentages, the take-up in general is difficult to assess. The on-line service of universities can still be developed even though it is the service with the highest maturity in the category of permits and license services.

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<sup>3</sup> See Annex E for explanation of the maturity levels.

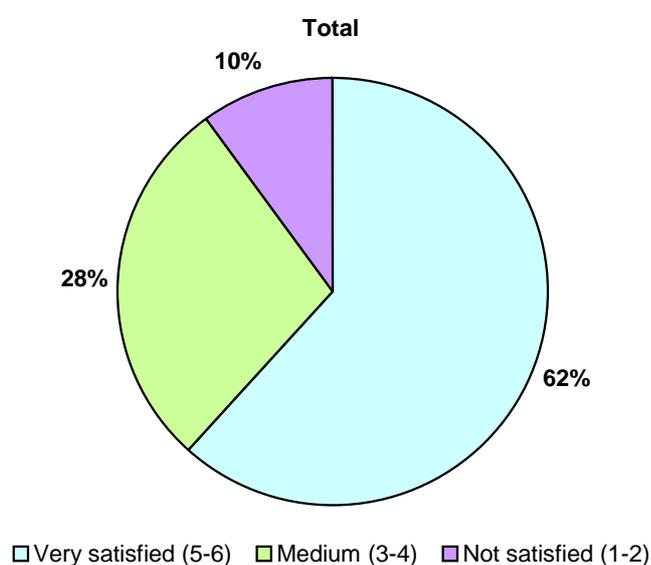
These 6 services are frontrunner public e-services on the supply side. The analysis of their take-up<sup>4</sup> gives an indication of how the demand side, i.e. users, reacts to the supplied public e-services. However, it is not possible to make generalised conclusions about take-up of on-line services, because there are large variations in the results and some of the services, even though they are frontrunners, have not reached an appropriate level of maturity.

The usage survey indicates the leading service providers within each category already provide some significant value for their users with even greater potential revealed as being within reach of most.

### **Findings of the study of user satisfaction**

The study shows how the users perceive the quality of public e-services. Generally the user satisfaction is high. More than 60% of the users are very satisfied with the service, as illustrated in the following figure.

**Figure 1-2: The level of User satisfaction**



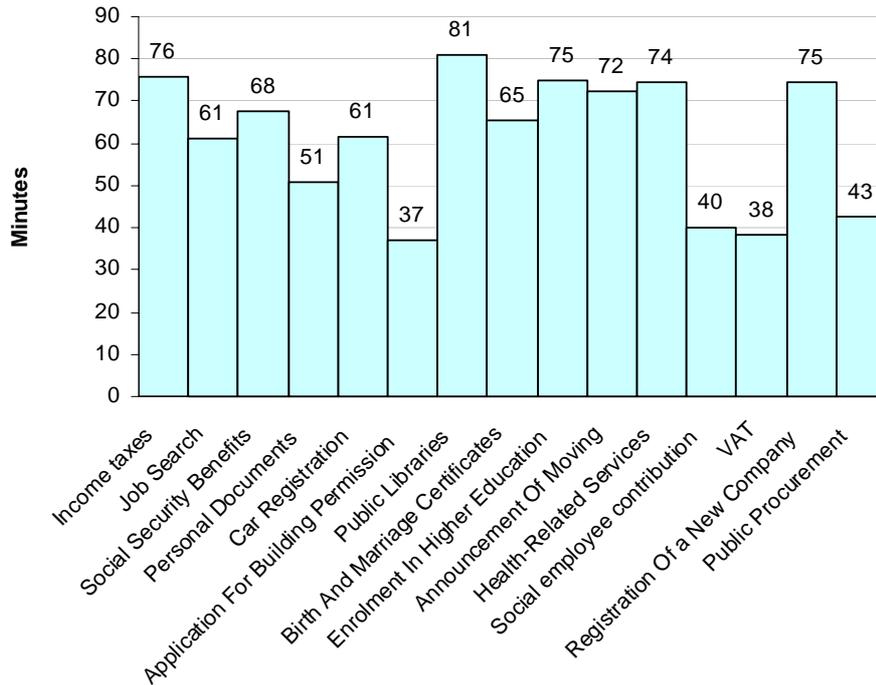
Furthermore, more than 75% of the users indicate that they will recommend the service to people they know. The result is a clear indication that these early users are e-service ambassadors in Europe and a driving force in disseminating knowledge about public e-services.

In the transformation of services from off-line to on-line, the benefits most widely reported by users are *saving time* and *gaining flexibility*. These benefits are closely related with the channel improvement. The users can access the service on-line at home, 24-hours-a-day, as opposed to only during office hours at the local public service center. The survey also shows that there are significant amounts of time to be saved using the public services on-line compared to off-line. The average on-line transaction for citizens saves approximately 69 minutes compared to the same transaction completed off-line. The most important reason for users to use the service on-line – namely saving time – is to a high degree being rewarded and that there is a great potential for time saving in further development of the on-line service. For each transaction completed on-line, the average saved time by businesses is approximately 61 minutes. The following figure show how much time the users save on the average using the different services.

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<sup>4</sup> Take-up is defined as to what extent the users use the e-services, in this survey measured by on-line percentages.

**Figure 1-3: Average time saved per transaction per service**



The time saved for citizens is a positive societal benefit that might encourage more on-line use. The time saved by businesses provides direct economical benefit. All in all there is a huge potential for saving both time and money for users of public services by going on-line.

However, service improvements (other than the convenience of having the service on-line) are only experienced by 30-40% of the users. This indicates that many of the current generation of public e-services are off-line services converted for on-line use without further development and optimization of the services. Fundamental process integration (back office) and improved service delivery (front office) is needed to create integrated services and thus achieve the combined benefits of both strategies.

The survey identified that improving general usability along with being able to easily find the service are still important issues to be addressed to improve user satisfaction. However, the overall picture is that the majority of the users are satisfied.

## Summary of Main findings

Area	Main findings
<b>Usage &amp; on-line percentages<sup>5</sup></b>	<ul style="list-style-type: none"> <li>○ On-line percentages are between 30-40% for a few leading service providers. The average for the front-runner services are 5%-10%</li> <li>○ The first indications of usage reveals a large potential to increase these on-line percentages by developing the services, increasing the value for the users</li> <li>○ The main reason quoted by service providers for developing on-line services is to improve the quality of the services</li> </ul>
<b>Value</b>	<ul style="list-style-type: none"> <li>○ Current users already experience great value with the on-line services</li> <li>○ More than 80% save time by using the e-services</li> <li>○ The average time saved by citizens and businesses is just <b>over 1 hour</b>.</li> <li>○ Reporting VAT on-line saved businesses more than <b>€29 million</b> in 2003.</li> <li>○ Reporting income tax <i>on-line</i> saves citizens more than <b>7 million hours</b> in 2003</li> </ul>
<b>Overall user evaluation</b>	<ul style="list-style-type: none"> <li>○ 62% of all users are <i>very satisfied</i> with the public e-services</li> <li>○ Less than 10% are not satisfied with the public e-services</li> <li>○ 77% of the users will recommend on-line services to others, representing a significant <b>hidden</b> potential as <b>ambassadors for change</b></li> </ul>
<b>Usability problems</b>	<ul style="list-style-type: none"> <li>○ Usability is still an important issue for improvement of public e-services</li> <li>○ Not being able to find the needed service or information is a common usability problem</li> </ul>
<b>Service improvements</b>	<ul style="list-style-type: none"> <li>○ Real service improvements (other than the convenience of providing the service on-line) are only experienced by 30-40% of the users</li> <li>○ The most important action item in order to improve value for <b>citizens</b> is to make the services <b>easy to use</b> and to provide <b>better help</b> regarding the e-service on the website</li> <li>○ The most important action item in order to improve the value for <b>businesses</b> is to make websites <b>easy to find</b> and <b>offer savings</b></li> <li>○ Fundamental process integration (back office) and improved service delivery (front office) is needed to create integrated services and deliver maximum benefits.</li> </ul>

<sup>5</sup> On-line percentage refers to the percentage of transactions performed on-line compared to the ones performed through traditional channels.

## 2. Background for the Survey

In 2002 DG Information Society commissioned the study "Top of The Web", a survey on user satisfaction and usage of public e-services in European Union Member States, Norway and Iceland. A consortium consisting of Rambøll Management A/S (Denmark) and EWORX S.A. (Greece) was entrusted with the responsibility of carrying out the study. The first survey was conducted in 2003 and the second in 2004.

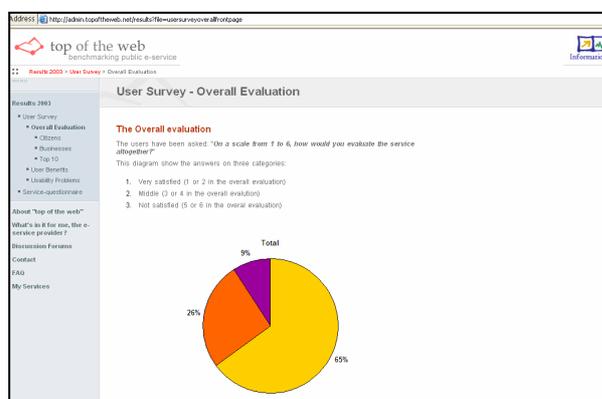
Top of The Web is related to the European Union's eGovernment Action plan - eEurope 2002 which was succeeded by the eEurope 2005 Action plan. eEurope 2005 is part of the Lisbon strategy to make the European Union the most competitive and dynamic knowledge-based economy by 2010. One objective of the action plan is to modernise public services. The objective of this study is to contribute with inspiration to this development, by focusing on the demand side of public e-services.

Former reports and studies in Europe have focused on the supply side and related developments, such as the European Commission's measurement on on-line availability and back-office reorganisation, carried out in 2001-2003. This study however, focuses on the demand side of public e-services in order to close the knowledge gap in this area. The demand side is essential to stimulate the service development. Usage of the services is necessary to achieve any benefits on both sides and therefore user satisfaction is an important factor.

The main aim of this study is therefore to measure the take-up of e-government services, to discover how citizens and businesses perceive the value provided by these e-services and to assess their satisfaction. Furthermore it is important to raise the awareness of e-service providers as to how they can improve the services they offer, from the user's point of view. This study is designed as a dynamic process based on activating and informing the webmasters/e-service providers.

This report presents the results and conclusions for the second year of the survey (2004). Results from the first year are available in a separate report. The results are also made available to the webmasters/e-service providers in the form of benchmarking and statistics on the website:

[www.topoftheweb.net](http://www.topoftheweb.net)



### 2.1 The objectives of the survey

The objectives of this survey are to measure indicators of usage on the demand side of e-government i.e. what kind of public e-services are used by citizens/businesses, and how do these services meet to the needs and expectations of citizens/businesses. The survey will thus focus on both quantitative and qualitative aspects:

- Gather information on the extent to which public e-services are being used, measured in *on-line percentages* of the total number of transactions.
- Analyse the user satisfaction of on-line public services in terms of *needs and expectations*

In order to meet the objectives described above, the survey has been based on a methodology, which to a very high degree involves the providers of the public e-services in question, as well as the users of these services. The involvement of webmasters/e-service providers can improve the awareness of delivering benefits for the users of public online services.

This report presents the results on the survey on user satisfaction and usage of public e-services. The survey has been designed to *inspire the service providers*. Therefore the outcomes of the study are, first, the involvement of the service providers and the evaluations they receive from their users. Second, it includes this report presenting the potential value by developing the e-services as well as indications of how other service providers work with the quality of their websites. This report has been designed to inspire service providers and others with interest in the field. For further explanation, see Annex A.

## 2.2 Conceptual model for the demand side of public e-services

Developments in Europe and the rest of the world creates challenges for the public sector. On the one hand, citizens and businesses have high expectations of accessible and efficient services and administration. On the other, limited or reducing resources. E-government is an enabler to realise better and more efficient administration. Public e-services<sup>6</sup> is a part of e-government, which specifically holds a potential for developing more efficient and user-centred ways to deliver public services and thereby address some of the challenges mentioned above.

E-services have been launched or implemented by all countries included in the study, and the range of initiatives is continually developing. Two different approaches for improvement of services are identified in this development:

- *process integration* (back office), and
- *service delivery* (front office).

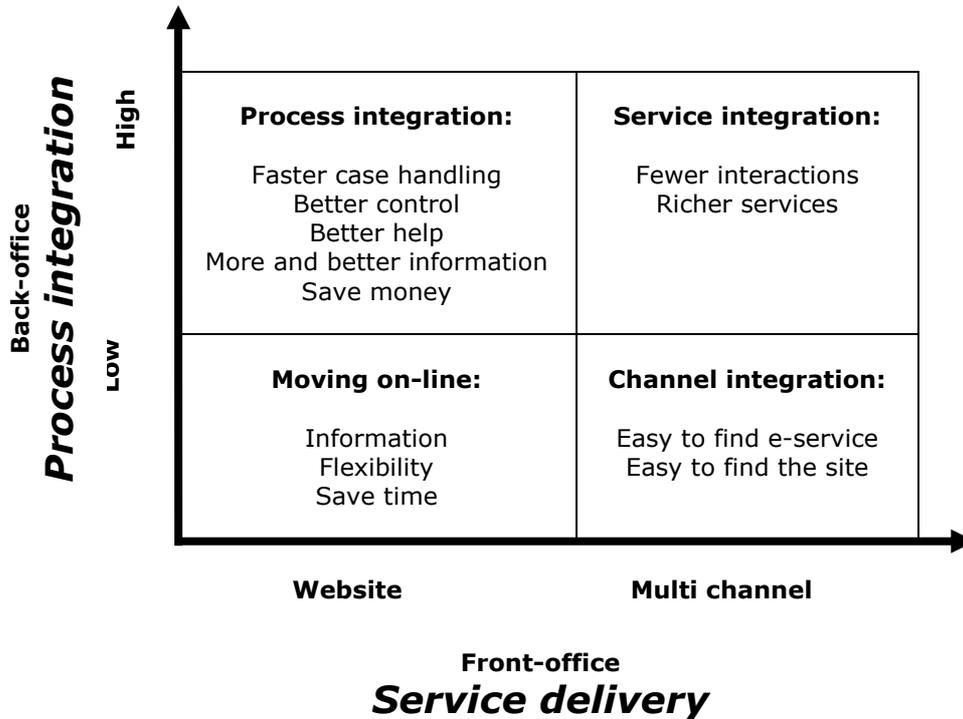
The concept of *process integration* refers to the degree to which the service is re-engineered by the responsible authority in the transformation from an off-line service to an e-service. The concept of *service delivery* refers to the channel and distribution strategies in the provision of government services. Considering these approaches together gives an indication of the maturity level<sup>7</sup> of the services and the potential for service improvements. The potential demand side benefits are illustrated in the following figure.

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<sup>6</sup> eGovernment services for citizens and businesses

<sup>7</sup> See Annex E for explanation of the maturity levels

**Figure 2-1: Possible demand side benefits of the two strategies**



By moving the services on-line, the users immediately get the benefits of increased flexibility and time saved, because of the channel improvement. There could also be a number of benefits from *process integration* (back office reorganization). These include further service improvements like faster case handling, better control over the process, more and better information, better help in filling out forms and sometimes even saving money, all depending on what the supplier chooses. The benefits of the *service delivery* approach include that the website and the service can become easier to find or reach. Finally, *service integration* means achieving the combined benefits of channel integration and process integration<sup>8</sup>.

This model has been used to design the questionnaires for the survey so that it relates to relevant issues of e-government.

### 2.3 Methodology used in the survey

The framework and methodology are introduced in this section. A further explanation of the methodology can be found in Annex A.

#### 2.3.1 Framework

More than 3,500 webmasters/e-service providers have been contacted and they have been used as the access point to citizens and businesses across Europe. The list of service providers originates from the survey of on-line availability, and for

<sup>8</sup> The full explanation of the conceptual framework was explained in the report of 2003 and can be found in Annex B. 12

stratification, sampling and so on, we refer to Cap Gemini Ernst & Young, 2004: "on-line availability of public services" p.6-7.<sup>9</sup>

The types of e-services measured in the above study are the 20 basic services agreed on by the Member States. 12 of the services relate to citizens and 8 relate to businesses<sup>10</sup>.

Citizens:

- Income taxes
- Job search
- Social security benefits
- Personal documents
- Car registration
- Application for building permission
- Declaration to the police
- Public libraries
- Birth and marriage certificates
- Enrolment in higher education
- Announcement of moving
- Health-related services

Businesses:

- Social contribution for employees
- Corporate tax
- VAT
- Registration of a new company
- Submission of data to the statistical office
- Custom declaration
- Environment-related permits
- Public procurement

The participating countries are the 15 Member States of the European Union (2002) as well as Norway and Iceland.

### 2.3.2 *Methodology used to measure the usage of public e-services*

To measure usage, a questionnaire for the webmaster/e-service providers has been designed. This questionnaire has been designed to measure two main indicators.

*The usage* - the measurement of the usage of on-line e-government services and their comparison with usage through traditional channels to calculate the on-line percentage. This indicates the current take-up as well as the potential for further take-up. Note we do not gather information about how many users there are for the service (e.g. some users can use the same service more than once).

Furthermore the questionnaire also includes questions about which of the seven benefits the suppliers decide to give the users and how they spread the knowledge about the service.

In 2004, the survey has focused on *six specific services*, in order to obtain high response rate. The six services have been chosen to indicate the potential for the development of e-government in Europe. By taking the most mature services and choosing different types of services, we are able to indicate a status for the frontrunner services.

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<sup>9</sup>

[http://europa.eu.int/information\\_society/eeurope/2005/doc/all\\_about/cgey4\\_measurement\\_final.pdf](http://europa.eu.int/information_society/eeurope/2005/doc/all_about/cgey4_measurement_final.pdf)

<sup>10</sup> For further characteristics of the service types, see Annex E.

This part of the survey has been conducted as telephone interviews, with the service providers on central governmental level supplying the services:

- To report income tax
- To report value added taxes
- To register a new business
- To place a proposal concerning public procurement.

And as online questionnaires to the multiple service providers of the services:

- To search for a specific media (public libraries)
- To sign up for advanced studies (universities)

The questionnaire was translated into five languages and the text was adjusted for each service. An example of the questionnaire is presented in its full length in Annex C.

### 2.3.3 *Methodology used to measure the user satisfaction of public e-services*

A user questionnaire has been used to measure the user satisfaction and the user's perception of the quality. The providers of the public e-services were asked to place the on-line questionnaire on the website containing the e-service. The questionnaire is a so-called "pop-up" questionnaire, or is activated by the users via a link on the website. This way the citizens and businesses were asked questions while in the actual user situation, which helps to secure the credibility of the answers.<sup>11</sup>

An obvious result of this survey methodology (on-line questionnaire) is that it excludes the non-user and *potential user* from the data collection. Identifying reasons for not using e-services would of course also be of great use to the improvement of e-services across Europe. Nevertheless, this would result in a new set of methodologically challenges. We recognise therefore that the chosen methodology has its limitations.

How citizen and business users perceive quality of public e-services is a crucial factor in its use. In the survey, we measured three issues indicating the user satisfaction and perceived quality of an on-line service:

1. Usability – The users are asked five questions about whether they have experienced any problems using the service:
  1. Was it easy to find your way to this website?
  2. Did you find what you were looking for?
  3. Is it easy to use the service?
  4. Are you satisfied with the speed by which the pages appear on the screen?
  5. Is the language clear and easy to understand?

If a user experiences problems with any of these aspects, he/she may be less likely to use the public e-services in the future.

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<sup>11</sup> The questionnaire is presented *after* the user has finished using the specific e-service. This is done not to interfere with the actual user situation and to ensure that the experience is still fresh at mind.

Furthermore these questions measure the level of usability as experienced by the users<sup>12</sup>. The first two questions measure the *effectiveness* of the service (the degree to which users are able to complete tasks and achieve the intended goal), as experienced by the user. Questions three to five relate more to the *satisfaction* (whether users find the service easy to use,).

2. Benefits – The benefits experienced by the users are also measured in this survey. Seven suggestions of possible benefits have been made to the users to choose from. Two are the benefits of *moving on-line* as mentioned in the conceptual model:

1. Save time
2. Gain flexibility.

The other five are further service improvements, possible benefits of high *process integration* also mentioned in the conceptual model:

3. Getting more and better information
4. Receive better help
5. Getting a faster case/reply
6. Getting better control over the process
7. Save money.

These cover the value and the utility of the service. If users feel they are gaining something they are more likely to use the public e-services.

To measure the time saved, (the benefit experienced most often by the majority of users in 2003), the users were asked the number of minutes they have saved using the service on-line compared to off-line. This should help to understand the overall value and potential for time saving within these on-line services .

3. Overall evaluation – The users are asked to rate the service on a scale from one to six. The most important factors in this evaluation are the user's overall *satisfaction* with the service and whether the users' *expectations* are met or not.

Furthermore all aspects of the service can influence the overall evaluation, therefore it is relevant to analyse the answers to this question in relation to the answers about usage and benefits, to see how the different aspects influence the overall evaluation of the service.

The users are also asked how many times they have used the service within the last year to check whether this has an effect on their evaluation of the service.

The User-questionnaire has been presented to the users in 13 languages. It is presented in its full length in English, in Annex D.

## 2.4 Response rates and weighting

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<sup>12</sup> The International Standards Organization (ISO) defines usability as the "effectiveness, efficiency and satisfaction with which a specified set of users can achieve a specified set of tasks in a particular environment." 15

2.4.1

*Response rates for the webmaster/service provider survey*

253 webmasters/ service providers of the six services have answered the questionnaire in total. The following figure shows the response rates.

**Figure 2-2: Response rates - webmaster/service provider survey**

	Contacted	Answered	Response Rates
<b>Income tax</b>	17	10	59%
<b>VAT</b>	17	8	47%
<b>Business registration</b>	17	11	65%
<b>Public procurement</b>	17	11	65%
<b>Public libraries</b>	1,321	142	11%
<b>Universities</b>	844	71	8%
<b>Total</b>	2,233	253	42%

The first column 'Contacted' is the number of service providers we tried to contact. We tried to locate one central service provider in each country for each of the four services (income tax, VAT, business registration and public procurement) by phone. We contacted as many as possible of public libraries and universities by mail.

The response rate was much higher for the phone interviews (between 47% and 65%) than for the questionnaires distributed by mail (8% and 11%). Still the data from both types of survey are sufficient to measure the usage and compare the service types, because a large number of answers are available.

2.4.2

*Response rates for the user survey*

The target group for the user survey is huge and unknown and differ between service categories, therefore it cannot be stratified. A total of **48,228 users** have answered the questionnaire, with 19,896 answers originating from citizens and 28,332 from business users. These answers derive from 64 different websites where the user questionnaire has been employed. While the 48,228 are not a representative sample, they originate from a large heterogeneous group of respondents, who are spread across countries and types of services, and thus the results are quite interesting in themselves.

Below the response rates to the user survey for the participating countries are shown:

**Figure 2-3: Countries – response rates – user survey**

	User questionnaire Started	User questionnaire Answers	Response rates
AT	21	10,913	27%
BE	2	647	18%
DK	11	29,118	25%
FI	3	118	10%
FR	1	527	30%
DE	4	931	31%
GR	1	13	31%
IS	0	0	0%
IE	2	485	4%
IT	6	4,029	62%
LU	0	0	0%
NL	0	0	0%
NO	0	0	0%
PT	6	306	30%
ES	5	1,104	8%
SE	0	0	0%
GB	2	37	28%
<b>Total/ Average</b>	<b>64</b>	<b>48,228</b>	<b>25%</b>

*User questionnaire started* refers to how many public websites in the different countries who participated in the survey by implementing a user questionnaire. *User questionnaire answers* are the total number of answers to the questionnaires. The *response rate* to the implemented user questionnaires was 25% in average. This means that 25% of the users who were presented to the questionnaire supplied an answer.

The answers are unevenly spread on both service types and countries. To get valid results the answers have been **weighted**, so that the answers for each of the websites count equally. This means that even a large number of answers from the Danish website for reporting VAT will not dominate the overall results.

Furthermore, we have only included the answers from surveys with more than 10 respondents. In total 217 service providers have started the User survey but only 64 of the surveys have more than 10 answers.

The response to the survey in 2003 was more evenly spread out on countries and service types. In 2003 all service types and countries were represented and 28,114 users answered the questionnaire in 2003. Nevertheless, the results from the survey in 2004 in general confirm the results from 2003.

The survey is not intended to provide a complete picture on the actual usage of e-government in Europe, rather a snapshot of the opinion of a significant number of actual users of current public e-services.

### 3. Usage of Public e-services

In this chapter the usage and on-line percentages for six different e-services are analysed, in order to measure the adoption of e-government from different angles.

The on-line percentages<sup>13</sup> indicate the current adoption level. We have also asked the service providers what would be the maximum on-line percentage possible, considering that not all users are on-line and not all transactions can be carried out on-line. The maximum on-line percentage and the usage (on-line and off-line) indicate the potential for further adoption. From these measurements and the measurements from the user survey on average time saved, the value and potential value of the services are indicated in time saved.

For each e-service area, examples of service providers with useful experiences on high usage or on-line percentages, service integration and/or service promotion are given. To sum up the results, the six services are seen together.

#### 3.1 Income taxes

This service is categorized as an income generating service for citizens and it is provided at national governmental level. The service is a way for citizens to report/update data about their income, etc., which are the basis for their income taxes. In general the citizens need to use the service once each year.

The measure of successful e-government in this area does not necessarily equal the on-line percentages. With back-office integration this service can become less needed, if for example the data are collected another way. For example if a smaller number of citizens need to report changes, it could be seen as successful back-office integration. Furthermore, other channels (for example the telephone) are often used for making this service available to the users, which can be just as easy and valuable for the users, but do not *count* in the on-line percentages.

##### 3.1.1 *Usage and on-line percentages*

The figure below shows the usage and on-line percentages for the seven countries that provided the on-line service in 2003 for Citizens and who answered the questionnaire. Ireland and Austria only provided the service for one-man businesses, Ireland had an on-line percentage of 20% with maximum estimated to 45%<sup>14</sup> for this group and Austria had 5% on-line users. Austria also launched the service for citizens in May 2003 but do not have any statistics on the usage yet. Finland will launch the service for their 1,500,000 users by 2005.

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<sup>13</sup> On-line percentage refers to the percentage of transactions performed on-line compared to the ones performed through traditional channels.

<sup>14</sup> We have asked the service providers what would be the maximum on-line percentage possible, considering that not all users are on-line and not all transactions can be carried out on-line.

**Figure 3-1: To report income tax - usage and on-line percentages**

Income tax				
Country	Transactions			Time saved (hours)
	Total	On-line	On-line %	
Norway	3,149,000	1,102,150	35%	1,395,600
Denmark	1,306,000	404,860	31%	512,655
Spain	16,192,040	2,326,796	14%	2,946,312
Sweden	6,800,000	748,000	11%	947,157
Germany	30,000,000	1,200,000	4%	1,519,503
Belgium	5,657,163	57,703	1%	73,067
<b>Total</b>	<b>57,447,040</b>	<b>5,781,806</b>		<b>7,394,294</b>

The usage of this service varies from 1,300,000 transactions to 30,000,000 a year. These numbers of course depends on the number of citizens in the specific countries and whether or not all citizens need to report all information to the government or if they only have to report changes to data already collected by the government.

To report income tax for citizens is a simple service, in the sense that almost all types of transactions can be carried out on-line and the expected maximum on-line percentage possible is therefore high, between 80% and 90%. The **take-up** on the demand side is not there yet and the service providers still have a long way to go before they reach even an 80% take up. The on-line percentages vary from 1% to 35%. But as mentioned before, the maximum on-line percent may not be the success criteria.

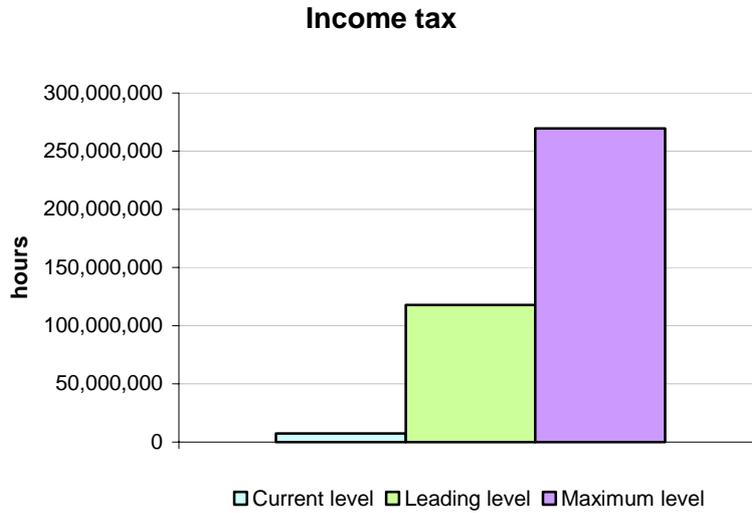
### 3.1.2 Value for the users

In 2003 more than 5,700,000 transactions were carried out on-line in the six countries. We know from the user survey that on average the user save 75 minutes by using the service on-line compared to off-line. This means that more than **7.3 million hours of the user's time were saved in 2003 alone.**

If the *maximum level* of usage (80%) is reached in of EU (15) there is a potential saving of more than *269 million hours* of citizens' time each year. [This calculation is made on the rough assumption that the total number of tax payers in EU (15) comprises of all inhabitants between the age of 15 and 64. The specific number (266 mill. people) is from Eurostats statistical Pocket Book - Living conditions in Europe – 2003 Edition)] This might not be a realistic goal in the first couple of years. However, looking at the leaders of on-line transactions (in percent) in EU (15) can help to set a *common and reachable goal* for the on-line use within EU (15). If the on-line percentage of these leaders (35% on-line transactions) is reached the total time saved almost *117 million hours in total every year in Europe.*

The following figure illustrates these potential savings in EU (15) with the e-service to report income tax.

**Figure 3-2: Potential savings on on-line usage**

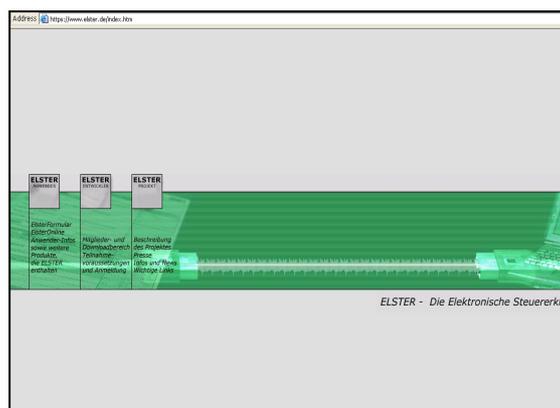


The current level saves the citizens in the participating countries 7 million hours. The maximum level is the potential savings if the maximum level on 80% on-line transactions is reached in EU (15), whereas the leading level presents a more realistic *potential saving*, if the service is provided on-line in all the countries and reaches a high take-up on 35%.

Even so, saving time is not the only benefit for the users. To *gain flexibility* and to *get more and better information* are the benefits the service providers point to as the advantage of the e-service. In Italy and Austria, the users can save money by using the service on-line, otherwise there is not a big variation from country to country, in regard to which advantages the service providers give to the users with the on-line service of reporting income tax.

**3.1.3 To report income tax - A Good Example - <http://www.elster.de>**

The Elster project of the German tax administration is designed to allow users anywhere in Germany to complete their tax declaration electronically via the Internet. They have a very high number of tax declarations (30,000,000 in total), and a great potential for utilizing the on-line service. The on-line service is at maturity level 4<sup>15</sup>, which means that it is possible to fill out and mail an electronic form - concerning the tax return - on the website, followed by an automatic reply (e.g. in the shape of a tax assessment).



<sup>15</sup> See Annex E for explanation of the maturity levels

At the moment about 4% of the tax returns are received on-line and 10% of the tax returns received off-line are down-loaded from the website. This is not an example of the highest on-line percentage, but an example of great value and great potential value. The time saved by users using the service on-line as opposed to off-line is more than **680 working years in total**. Compared to the high maximum on-line percentage there is a huge potential for time savings due to the high usage.

The service provider points four out of the seven benefits out. As such there is a wide range of benefits for the users. This diversity in benefits can help reaching more users and thus increase the use of the service.

The main marketing of the service has been off-line advertisement and digital media (compact discs) with introductions to the on-line possibilities. All service providers participating have used the traditional marketing channels (off-line).

## 3.2 VAT

This service is a way for businesses to report the value added tax related to their products and sales. This service is categorized as an income generating service for businesses. This service has the highest maturity level according to the supply side measurements (Cap Gemini: 2004). Because it is a service most businesses have access to and most businesses need to use, it is a good indicator for the businesses take-up of e-government.

### 3.2.1 Usage & on-line percentages

The following figure shows the usage and on-line percentages for the five countries from which we have answers, and who provided on-line service in 2003. Iceland, Portugal, Germany, France and Spain also answered the questionnaire, but did not provide the necessary quantitative information.

**Figure 3-2: To report VAT – usage and on-line percentages**

Country	VAT			Money saved on time saved
	Total	On-line	On-line %	
Denmark	1,010,000	454,500	45%	4,696,703 €
Norway	1,184,000	236,800	20%	2,447,039 €
Finland	3,000,000	480,000	16%	4,960,214 €
Belgium	2,982,055	157,751	5%	1,630,161 €
Sweden	440,000	13,200	3%	136,406 €
<b>Total</b>	<b>8,616,055</b>	<b>1,342,251</b>		<b>13,870,523 €</b>

The usage of this service ranges from 440,000 up to 3,000,000 a year. This number is very dependent on number of businesses, the national taxation system and business/public service traditions, etc.

The potential maximum of online transactions according to the service providers, varies from 25% to 90%, but has an average of 70%, which is still fairly high. The on-line percentage varies from 3% to 45% with an average of 17% indicating the **take-up** on the demand side of the e-service. And since it is obviously vital for most businesses to report the VAT it is clear that there is a large utilization potential within this service area.

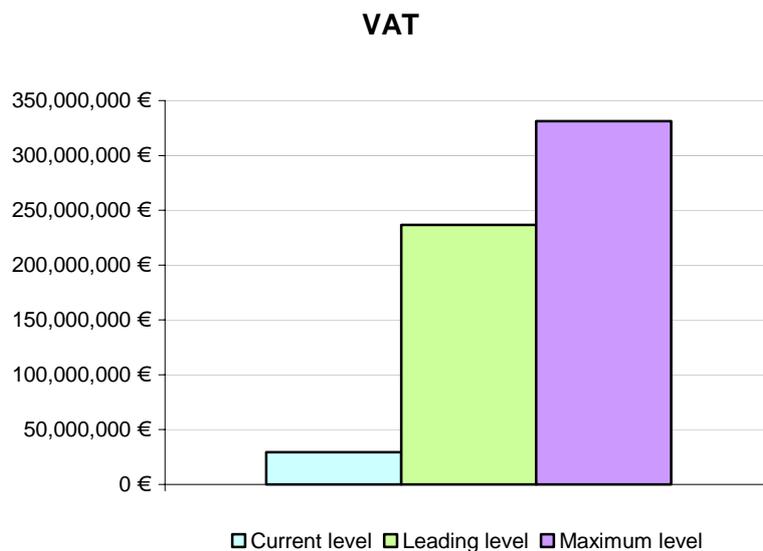
### 3.2.2 Value for the users when it comes to reporting VAT online

More than 2,800,000 transactions were carried out on-line in 2003 in this service area. With this type of e-service, businesses around Europe save time and thereby money. With an average time of 38 minutes saved each time using the service online compared to offline, the **total time saved** amounted to approximately **29,3 million €<sup>16</sup>**

The maximum level of on-line use is estimated by the service providers, to be around 70%. If this maximum level is reached in EU (15) then there is a potential of saving is more than 330 million €. [This is assuming that there are 11,455,000 businesses in EU (15) and that they use the service to report VAT 4 times a year. The statistics are from Eurostats statistical Pocket Book - Business in Europe - 2003 Edition.] If we look at the leader of on-line percentage the level is 50%, indicating a more realistic goal. If this level is reached on average in EU (15) the potential savings is more than 230 million € every year.

The following figure illustrates the potential savings in EU (15) with the e-service to report VAT.

**Figure 3-4: Potential savings on on-line usage**



The current level is, as described above, saving the businesses in the participating countries app. 30 million €. The maximum level is the potential saving if the maximum level on 70% on-line transactions is reached, whereas the leading level presents a more realistic potential saving of time if the service is provided in all the countries and a high take-up on 50% is reached.

However, saving time is not the only advantage for the business. To gain flexibility and get more and better information are the most common advantages with this service, but a wide range of benefits are provided to the users, many of the service providers point to the benefit of getting better help in filling out the form.

<sup>16</sup> Assuming that 7.5 hours per day and 240 days is average for a year's work, which for the businesses is worth the average salary for a years work, app. 29.000 €. Eurostats statistical Pocket Book - Living conditions in Europe - 2003 Edition, says 28.962 € in average earnings for full-time workers in Industry and Services for EU (15).

### 3.2.3

#### To report VAT - A Good Example - [www.toldskat.dk](http://www.toldskat.dk)

A good example of service integration and a high on-line percentage is the Danish Custom and Tax Authorities. At the moment, the online percentage is 45%, which is a very high take-up, but expected maximum online percentage of 90% is not reached. The website is directed towards the two target groups: citizens and businesses, and the website links are as well to other relevant services. For businesses there are downloadable forms for many different services besides the on-line service 'to report VAT'.



The time saved for the users using the service in 2003 was 34 minutes on the average. Multiplied by the number of on-line transactions on this service, this comes to approximately 137 working years. Since this time is saved by businesses, it leads to a direct economic benefit, and the average salary in Denmark is approximately 41,000 € a year<sup>17</sup>. This means that **Danish businesses have saved more than 5,617,000 € in 2003 on this service alone**. However, a crude calculation, this indicates the huge potential for not only for saving time, but also to provide economic savings for the users of the public e-services.

The main benefits for the users, pointed out by the Custom and Tax Authorities, are *saving time* and *saving money*. Almost 28,000 of their users have filled out the user survey. The users agree that the main benefits are to save time and gain flexibility, but 50% also feel more in control and almost half of the users save money. As part of a campaign it has been possible to save money by using the on-line service although only a small amount, between 2 and 6 Euro, and only if you paid within a certain time limit.

The marketing effort has been large-scale, with off-line advertisement initiatives and direct contact with the businesses to improve the on-line use of the service. A large direct marketing campaign has resulted in 35,000 more users within a couple of weeks.

The main reason for providing the on-line service is *to improve the service level*. The e-service is mainly aimed at the users and can as such help to attract more users on-line. However, this improvement of going on-line does not contain any direct savings to the public service itself. The main saving point for the public administration lies in the back office integration, in this specific case, in the integration to the tax payment system that insures that tax collection is initiated automatically as soon as the user has reported the tax on-line. This shows that the first steps in the e-government development (moving on-line and channel integration) are necessary to disseminate the use of the on-line service, but that the real savings for the public administration lies in process and service integration.

As we can see above, the Danish Custom and Tax Authorities have succeeded in giving the users benefits. Furthermore, the users are very satisfied with the quality. More than 80% of the users participating in the survey found the service to be very satisfying (5-6 on the evaluation scale) and less than 1% found the service not satisfying (1-2 on the evaluation scale).

<sup>17</sup> The figure according to "Eurostats Statistical Pocket Book - Living conditions in Europe" is 40,962 €

### 3.3 Business registration

This service is categorized as a registration service aimed only at businesses. The service target groups are potential new businesses and already established businesses changing registration information, etc. Due to the nature of this service, it is not used as often as the above services.

Furthermore the service is not fully developed in most of the countries (it has a lower maturity level). One of the main problems in the development is that before the businesses have registered they do not have a reliable way of identifying themselves to the public administration.

#### 3.3.1 Usage & on-line percentages

Eleven countries have answered the questionnaire about this service, but only four of these provided the service on-line. Norway began to provide the on-line service in May 2003. Finland, the Netherlands and Luxembourg only offer a service on maturity level 2, where you can download a form and send it by normal mail. The following figure shows the usage and on-line percentages for the countries that supplied the necessary information.

**Figure 3-3: To register a business – usage and on-line percentages**

Business registration				
Country	Transactions			Money saved on time saved
	Total	On-line	On-line %	
Spain	?	?	40%	
Italy	412,000	82,400	20%	1,648,771 €
Sweden	39,705	7,941	20%	158,894 €
Norway	24,000	720	3%	14,407 €
Finland	25,000	16,250	65%	325,152 €
The Netherlands	100,300	?	?	
<b>Total</b>	<b>451,705</b>	<b>90,341</b>		<b>2,147,224 €</b>

The usage of the service varies from 24,000 to 412,000 transactions. From this the on-line percentage varies from 3-40% indicating the **take-up** on the demand side. There is room for improvement. However, there are, as mentioned, some important issues concerning the basic registration procedure that can influence the maximum level of on-line transactions.

#### 3.3.2 Value for the users

The actual number of online transactions in the participating countries is more than 95,000, when Finland's service with downloadable forms is counted it is more than 110,000 transactions<sup>18</sup>. Just as in the reporting of VAT, the time saved here for businesses represents a real economic saving. The average time saved (as indicated by the users) is 75 minutes. This means that the overall money saved on time saved is more than **2.2 million €** for the users in 2003, even with the few providers.

It is difficult to calculate the potential savings since there are no apparent statistics on the number of new businesses registered every year. However, if we assume that the Norwegian [Norway had 440.000 businesses in 2003 and 2400 new businesses = 5%] case is representative for the situation in EU (15) then the number of business

<sup>18</sup> The average time saved is calculated for all services regardless of maturity. Therefore we do not limit the calculations to the on-line services.

registrations each year are approximately equal to 5% of the total number businesses. This means that there would be more than 570,000 registration transactions on an EU (15) level.

The feedback on potential maximum on-line percentage has not been sufficient enough to use as a base for the calculation of the potential savings. But if we take a rough average of the current online percentage then 30% of all these transactions could be done online thus saving users more than **68 million €** every year.

This gives an indication of the potential savings in the use of e-services. And this doesn't include the possible savings on the administrative side, but only for the users.

And again, time saved, is not the only advantage. The service providers offer more and better information about how to register a business and in four of the countries the businesses can save money by using the service on the Internet.

### 3.3.3 To register a new business - A Good Example - <http://www.cameradicommercio.it>

The Chamber of Commerce handles business registration in Italy. They have a large on-line percentage and the highest number of transactions of the participating countries. The maturity level of this service is 3, which means that it is possible to fill out and mail an electronic form concerning the registering of the new business.



On the website they offer information on how to set up a business and make it possible to find business data. The main reason for providing the service 'to register a new business' on-line is to improve the service level and advantages for the user, to *save time, save money and gain flexibility in the transaction*.

The expected maximum percentages of on-line transactions are 90%. If the average time saved using this survey is constant, it means that more than 310 working years can be saved for the businesses every year in Italy.

## 3.4 Public procurement

The public procurement service measured in this survey is the possibility for businesses to submit an offer concerning national public procurement on-line or by downloading a form and sending it by mail. It is categorized as a returns service for businesses and the target group can be all businesses supplying public organizations.

This service is still very much under development and it is not possible to locate one central provider in each country. The service does exist, but on different levels and within various specific areas. The on-line percentages are therefore not equal to the total percentage of e-procurement compared to off-line procurement in a country.

### 3.4.1 Usage & on-line percentages

Nine service providers have answered the questionnaire, but four of them only had information about public procurement on their website. Three provided an on-line service (the Austrian, Finnish and German websites) and four of the providers have a service where it is possible to download a form (The Irish and Finnish websites, plus the German and Austrian websites have both possibilities). In the following figure, the available data about usage and on-line percentages are presented.

**Figure 3-4: To submit an offer in regard to public procurement – usage and on-line percentages**

Provider	Public Procurement Transactions				Downloads %	Money saved on time saved
	Total	On-line	downloads	On-line %		
Edita (private)(FI) Federal government (Procurement office) (DE)	2,500	2,475	5	99%	0%	28,302 €
BBG Bundesbeschaffung GmbH (AT)	?	-	-	10%	10%	
eTenders Public Procurement (IE)	1,000	5	950	1%	95%	10,898 €
Ríkiskaup (Purchasing Agency) (FI)	?	-	-	-	33%	
	3,000	-	?	-	?	

For the participating service provider, the usage of public procurement varies from 1,000 to 3,000 transactions a year and the on-line percentage is between 1% and 99%. Furthermore, some of the service providers also have the opportunity for the users to download a form. The use of the downloaded form varies from 10% to 95%. The on-line percentages cannot be directly compared because of the different character of the service providers and therefore the take-up is not easy to assess.

### 3.4.2 Value for the users

It seems that there is still much work to be done on the supply side, before it is possible to measure the demand side. Still for the two websites that provided the necessary information 2,480 on-line transactions were carried out in 2003, saving the businesses app. 39,000 € on saved time. The average time saved for the users is approximately 42 minutes. There are other advantages for the users, according to the service providers. For example several of them provide a faster reply with the web service.

### 3.4.3

#### Public procurement - A Good Example - [www.etenders.gov.ie](http://www.etenders.gov.ie)

The Irish e-Tenders is a good example of Internet services regarding public procurement, because they have a centralised governmental public procurement where they have reached 33% of the users. The service is for public procurements above 50,000 €.



The Irish e-Tenders site is designed to help businesses find information on government and public sector procurements by providing links and a search engine that can be used to search for notices issued by public bodies across Ireland. It has the service to view and print a form concerning the placement of proposals for national public offers (and send the printed form by post). It is on maturity level 2, but they are developing a two-way transaction, to be implemented shortly.

The benefits of the on-line service are *to save time, to save money and get more and better information*. The templates helps the businesses fill in a proposal, which saves them time. The supply side save time as well because the proposals are more standardized. The on-line possibility under development will save the businesses even more time, because they will be guided to answer only relevant questions. According to the service provider the businesses also save money on advertising by using this service.

Information has been provided about the service off-line as well as on-line. Furthermore, information seminars and large marketing campaigns will be initiated when the new service is developed and ready to use.

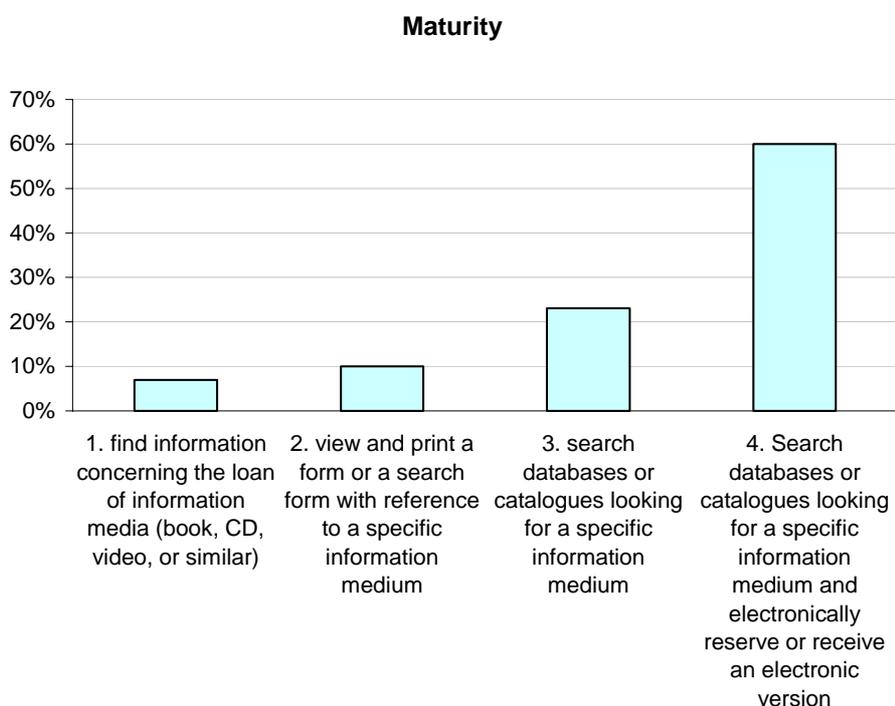
### 3.5 Public libraries

To search in a catalogue (for a specific book or medium) is categorized as a returns service for citizens provided by public libraries. With on-line services, the available media becomes more accessible and easier to find for the users. The on-line possibility potentially creates higher usage and more value for the citizens. The target group is potentially all citizens and the service can be used many times a year.

This service is the most mature service for citizens and the barriers on the supply side are therefore at a minimum. It is therefore a good indicator of the potential for public e-services for citizens.

We have received responses to the questionnaire from 142 public libraries, with the following distribution regarding maturity.

**Figure 3-5: Libraries distribution regarding maturity**



There are few libraries without an on-line service and they had a very small number of transactions in 2003. Usage and on-line percentages are therefore only interesting for the mature services. We have received 108 answers from libraries all over Europe, with maturity level 3 or more.

**3.5.1 Usage & on-line percentages**

The usage of the service for libraries with *maturity level 3*, varied between 2,000 and 300,000 last year. For the libraries with *maturity level 4*, the usage varied between 2,000 and 2,500,000 transactions in 2003, which means that there are both small and large service providers, offering this service. The figure below shows the average on-line percentages for the two maturity levels.

**Figure 3-6: Usage and on-line percentages for public libraries**

Libraries	Transactions	Average On-
	total	line %
3. Search databases or catalogues looking for a specific information medium	2,000-300,000	14%
4. Search databases or catalogues looking for a specific information medium and electronically reserve or receive an electronic version	2,000-2,500,000	52%

The highest on-line percentages are reached by services with maturity level 4. All the participating public libraries on maturity level 4, have an on-line percentage above 5%. Furthermore, the majority have an on-line percentage above 50% indicating a

high **take-up**. In other words, when you are in the public e-library business you have to go all the way and provide the full service.

Furthermore, there is a clear connection between high maturity level and a high number of transactions. This could mean two things, both that libraries with many users are faster in developing fully mature on-line services, and/or that fully mature on-line services attract more users.

### 3.5.2 Value for the users

As mentioned, the value of the on-line service is that the service becomes more accessible to the citizens. Part of that accessibility is the time you save by searching for the media at home instead of going to the library.

On the average, the users who answered the user questionnaire for this service saved 81 minutes each time, by using the service on-line instead of off-line. In total, the service providers who answered the questions about usage and on-line percentages had 2,268,992 on-line transactions in 2003. This means that the users of these services saved **1,021 working years all together**. Again the survey is indicating great value for the users.

### 3.5.3 Public Libraries - A Good Example - [www.stadtbibliothek.wien.at](http://www.stadtbibliothek.wien.at)

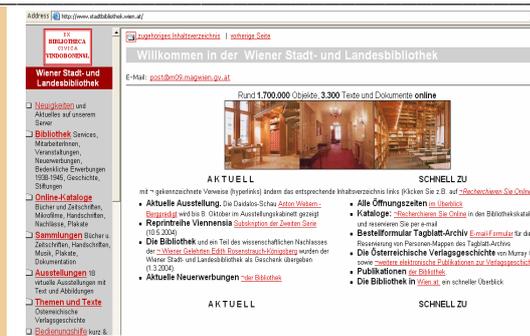
The Vienna City Library has a high on-line percentage of 73% and they are at maturity level 4, which means that the user are able to complete the full case handling on the website - search databases or catalogues looking for a specific information medium (book, CD, video, or similar) and

electronically reserve or receive an electronic version of the item. They have app. 1,700,000 items and 3,300 texts available on-line. The library has 14,500 transactions a year and more than 10,500 of these were completed on-line.

The main benefits pinpointed by the users as being most significant are *saving time* and *gaining flexibility*. Both these benefits are also pointed out by the service provider as the main reason for the on-line service.

The service provider has taken many different measurements to promote and increase the use of the service. Public PC's with access to the service, off-line and on-line information and advertisement of the service and the gathering of many services in a 'single access' portal have all helped getting the users on-line.

The main reason for the on-line service has been to improve efficiency. With the high level of integration and the high number of on-line transactions, this goal has been a good driving force in providing the on-line service.



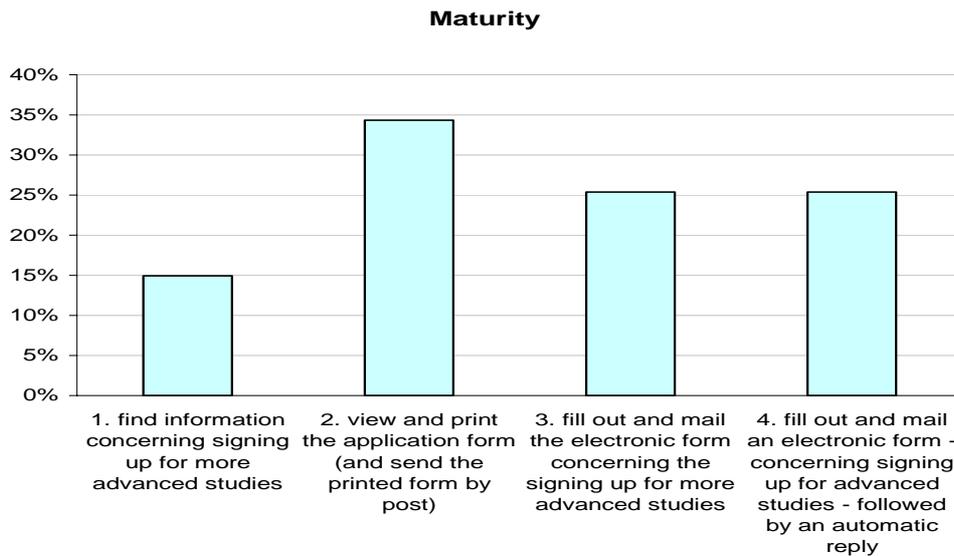
## 3.6 Universities

As part of the administration of universities, future students can sign up for advanced studies. The service is probably only used once or twice for each user. The universities thus have a smaller target group than most of the other five services we have measured in this part of the survey.

The development of on-line services can be complicated depending on how much more information the future student has to supply, when they sign up for advanced studies. In many cases a downloadable form is the easiest way if other papers have to be supplied along with the application.

We have received responses to the questionnaire from 70 universities, with the following distribution regarding maturity.

**Figure 3-7: Universities distributed according to maturity**



### 3.6.1 Usage and on-line percentages

The usage of the service for universities with **maturity level 2** varies between 1,300 and 21,500 transactions. The majority of the service providers do not know what percentage of the received forms were downloaded. Only three providers have those numbers, and the percentages are between 20% and 30%.

The usage of the service for universities with **maturity level 3** varies between 180 and 20,000 transactions. This means that both large and small universities have developed on-line services. The usage and on-line percentages were not supplied for the majority of the service providers who answered that they are at **maturity level 4**. The figure below shows the usage and on-line percentages for Universities with maturity level 3 and 4.

**Figure 3-8: Usage and on-line percentages for universities**

Provider	Universities			Maturity level
	Transactions		On-line %	
	Total	On-line		
ULG (BE)	14,500	870	6%	3
Institut Universitaire Internationale (LU)	180	126	70%	3
Háskoóli Islands (IS)	1,000	200	20%	3
Technische Universität Graz (AT)	1,200	1200	100%	3
IESEG - School of Management (FR)	3,500	2800	80%	3
Universidad Nacional de Educación a Distancia (ES)	200,000	60,000	30%	4

Some of these service providers with on-line possibilities also have the option to download an application form and send it by normal post besides the on-line possibility. This increases the percentages of web users, but we do not know by how much.

Because there is a large group of service providers who do not know how much the e-services are being used (mainly true for to the services on maturity level 2) and because there are big differences on the maturity levels and on the on-line percentages, the take-up in general is difficult to assess. The on-line service of universities can still be developed even though it is the service with the highest maturity in the category of permits and licenses services. It is difficult to pinpoint an overall strategy for this service area, other than to overcome the barriers of submitting further data with the application on-line.

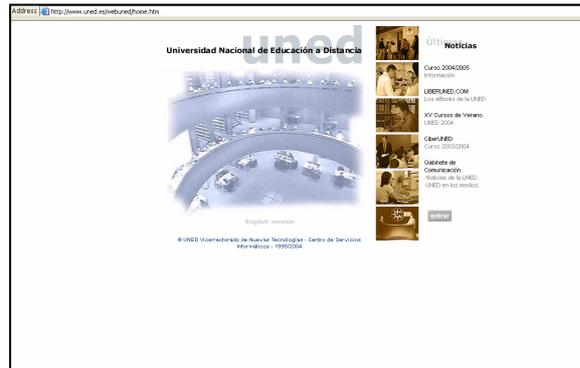
### 3.6.2 *Value for the users*

On the average, the users save 75 minutes by using this service on the websites. To save time is not the only advantage the users can gain with the on-line service, but it is the most common benefit offered, together with gaining flexibility. More than 40% of the service providers provide a faster service or a faster reply when the Internet service is used.

### 3.6.3

#### Universities - A Good Example -

<http://www.uned.es/webuned/home.htm>



Universidad Nacional de Educación a Distancia (UNED) in Spain is a university for remote studies and they have a fully mature service, meaning that it is possible to sign up for advanced studies by filling in an electronic

application and to receive an automatic reply. They have a large number of users 200,000 signed up for advanced studies in 2003. The high number of users relates to many different courses and programmes.

The main reason for providing the on-line service is to *improve the quality of the service*. On the website it is possible to find information about courses, how to sign up, what qualifications are needed and much more. The benefits offered with the on-line service are *to save time, gain flexibility, achieve a faster case handling reply and get more and better information*.

The university spreads the knowledge about its services by taking part in a national portal for universities - <http://www.universia.es/>. Furthermore they provide PC's with access to the service.

On this basis they have a high on-line percentage. 30% of their applications are received on-line. 40% of their applications are downloaded forms, sent in by post.

The value for the users is thus very high. On the average, the users save 75 minutes by using the Internet services and in 2003 approximately 140,000 applications were filled in on-line or downloaded and sent in by post. This equals **175,000 hours** in saved time for this *one* service.

## 3.7 The six services seen together

In this section we sum up the results on usage, benefits and marketing efforts, for the six services and compare the results.

The six services are different types of services; there are three services for citizens and three services for businesses and all four service clusters are represented<sup>19</sup>. Furthermore the services are the frontrunners in their type of service regarding maturity.

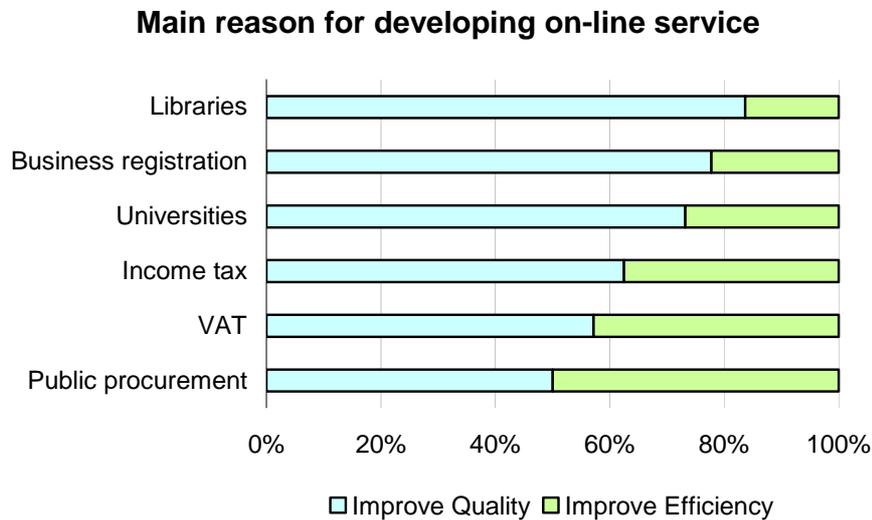
### 3.7.1 Main reason for developing on-line services

The majority of service providers go on-line to improve the quality of the public services. However, some services need more process integration and thereby improvement of efficiency than others in order to improve the quality of the service.

The following figure shows whether the service providers of the six services chose the improvements on quality or efficiency as the most important reason for developing e-services.

<sup>19</sup> See Annex E for characteristics.

**Figure 3-9: Quality or efficiency as the main reason for developing on-line services**



**3.7.2 Usage and on-line percentages**

The six services are frontrunner services on the supply side and they represent a broad range of different service types. As such, the take-up of these six services indicates how the demand side reacts to the public e-services. However it is not possible to assess a general level of on-line usage, because there are large variations in the results and some of the services, even though they are frontrunners, have not reached a level of maturity, where they monitor the transactions.

On this account there are still remarkably few statistics on the usage of the individual e-services compared to services offered off-line. Therefore this study does not pretend to provide the full picture on the actual usage of e-government in Europe, but it does provides the first samples and indicators on where we are, where we could be if we follow the current leaders, and the goals to which we should aim at in the future.

The two services with the greatest maturity and the highest usage relevant for all citizens or businesses accordingly are *public libraries* and *VAT*. These are also the services with the highest on-line percentages in average. The *value* of these services, at this point, are already huge in terms of saved time, which is only the first benefit of public e-services according to the conceptual model presented in Chapter 2 and Annex B. Still there is a potential for a much larger value if higher on-line percentages are achieved. For the other services as well, there is a great value for the users in saved time at this point, indicating an even higher potential value in the future.

High on-line percentages are seen as a success criterion in this survey and at this stage of developing on-line services, even though other criteria becomes relevant with the development of the services.

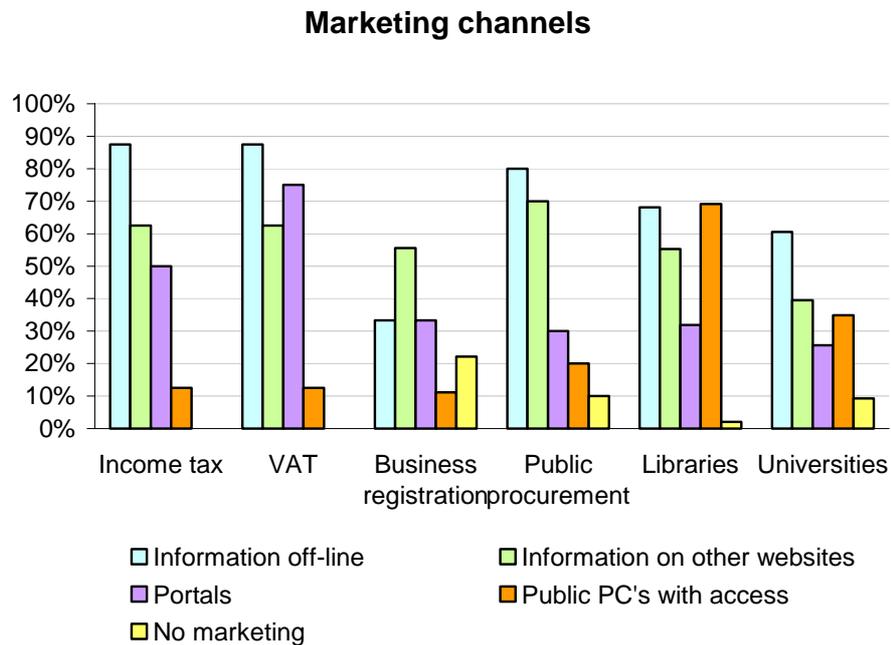
Across the differing service types there is no indication of whether there is a connection between the number of transactions and high on-line percentages. It is more likely that the high on-line percentages follow the maturity level. We clearly

saw the correlation for libraries and it can be seen for other services as well. For that reason there is a possible gain by developing the fully mature service to achieve a high number of on-line users.

### 3.7.3 Marketing

Off-line information and information on other websites are the methods most often used to spread knowledge about the e-services. The following figure shows which channels the service providers of the different services use to market their services.

**Figure 3-10: Service types - marketing**



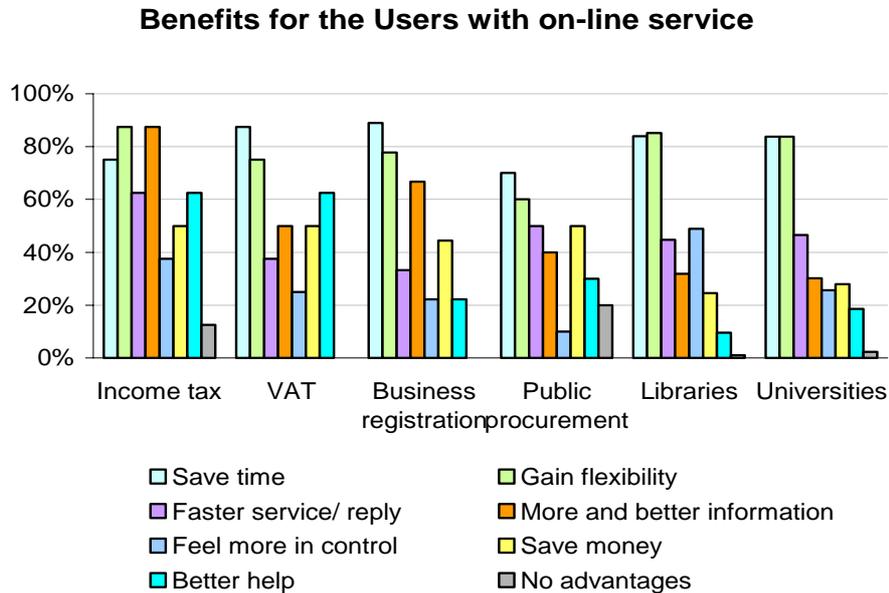
Portals are mostly used at a governmental level, while public PC's with access to the service, are used more often by the multiple service providers.

It is not possible to see a clear pattern of which marketing channels are best to enhance on-line percentages.

### 3.7.4 Benefits

We have asked all service providers to point to the benefits of their Internet services as they see them for their users. They all mentioned the benefits 'saving time and gaining flexibility' – the benefits of moving on-line. The responses are shown in the following figure.

**Figure 3-11: Service types – advantages with on-line services**



Besides the first generation services, approximately half of the service providers for *businesses* offer the advantage of *saving money* with the on-line service, while the service provider for *citizens* gives the advantage of a *faster service or a faster reply*. This indicates that the service providers think about how they can attract users, assuming that even small savings can be important for businesses, especially if the service is used often. It is important as well for citizens to get a fast reply/service to feel they are receiving good service.

The majority of the service providers of *income generating services* (to report income tax and VAT) make an effort to ensure *better help* in filling out the forms, to also ensure that the data is filled in correctly, making it easier for them on their part to process the data. Furthermore the service providers *on the governmental level* provide *more and better information* with the Internet services. Information is part of the traditional governmental service and it also helps the citizens and businesses to use the services correctly.

**The value** of the services for the users can be benchmarked on the average time saved<sup>20</sup>. The service with the highest value measured in saved time, is the libraries with 81 minutes on average each time the service is being used. The service with the second highest value is to register a new business. These two services are also the services with highest on-line percentages. The smallest amount of time saved is on the service to report VAT, but because this service is used often the total value in saved time for a business is still high<sup>21</sup>.

<sup>20</sup> This data is collected through the user survey.

<sup>21</sup> An average, for all the servicetypes on how much time is saved, is presented in Chapter 3.

## 4. User Evaluation of the Public e-services

In the following chapter, we present the results of the user survey on public e-services. The survey indicates how the demand side reacts to the public e-services that are currently in use. In relation to the qualitative objectives of the survey, we are able to point to some aspects that can inspire the further development of public e-services in this part of the report, thus supplementing the first part with a more future-orientated view.

The issues dealt with in the survey and in this chapter are: The user's overall satisfaction (4.1), perceived benefits for users (4.2), usability of public e-services (4.3) and how to get satisfied users (4.4).

We know from the service provider survey that the main reason that the majority of the service providers develop on-line services is to improve the quality. The results from the user survey indicate the areas webmasters and e-service providers can improve, as well as which areas they should focus on in the future.

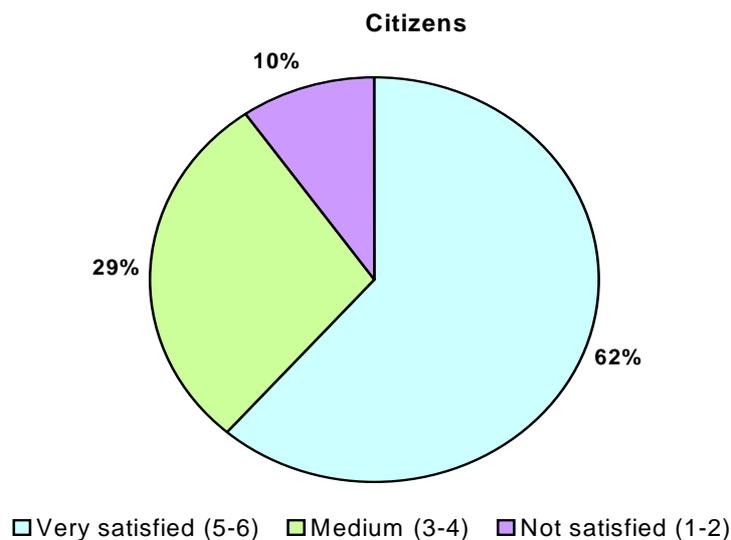
### 4.1 The user's overall satisfaction

The respondents have been asked to evaluate the e-services on a scale from 1-6, where 1 is *very bad* and 6 *very good*. The user evaluation of the websites indicates whether users are satisfied with the service, whether or not their expectations are met and which factors they find most important.

#### 4.1.1 Citizens

The majority of the citizens who participated in the survey are very satisfied with the quality of public e-services. In the overall evaluation, 70% rated the service between 4 and 6. More precisely 62% of the citizens rated the e-services 'good' or 'very good', 29% rated the service medium, and 10% rated the service bad or very bad, see the figure below.

**Figure 4-1: Citizens - overall evaluation of the services**

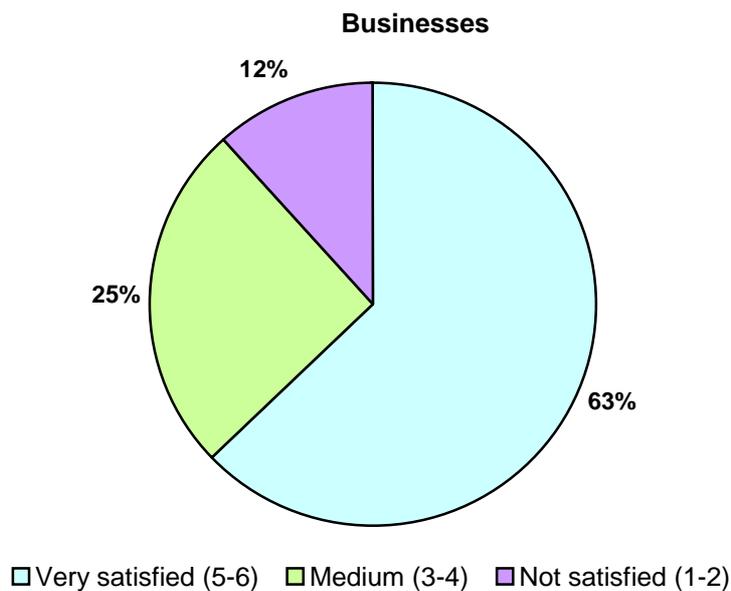


The positive evaluation of the websites indicates that citizens are satisfied with the public e-services, and that their expectations generally are met. The results from the survey in 2003 differ only a little and as such the results are confirmed.

#### 4.1.2 *Businesses*

The high overall satisfaction also applies to the businesses that use the on-line services. 63% are very satisfied, but 12% still find the service quality unacceptable.

**Figure 4-2: Businesses - overall evaluation of the services**



It is possible that the websites evaluated in the survey are the more successful and mature ones and thus leading to a positive result. However, the overall satisfaction is high and the majority (77%) of citizens and businesses indicated that they would recommend the service to others. This is a good sign for the continuous development and penetration of e-government in Europe.

Those who rate the e-services 'good' are also likely to recommend the e-services to others: 86% of the satisfied users (mark 5 or 6) will recommend the service further, 43% of the unsatisfied users (mark 1 or 2) will do the same. Thus, more than half of the users who rate the service bad will still recommend them to others. This indicates that they still consider the on-line possibility an advantage and improvement of the service, even though they are not completely satisfied with the way the service is implemented on-line. To fulfil the expectations of this significant group of users, it is necessary to continuously develop the quality of the service on a number of parameters. These parameters are further described in the following sections.

## 4.2 Perceived benefits for the users

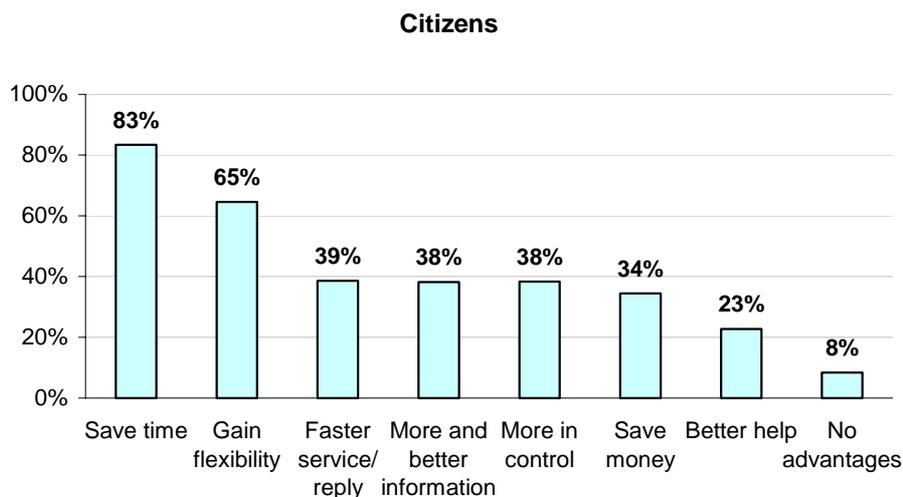
This section deals with how users perceive the benefits of public e-services. It is important that they see an advantage in using the e-service if the aim is to improve the quality. It is also important that the users see an advantage if the aim is to get as many users on-line as possible to improve efficiency.

For future development it is interesting which benefits the users experience in relation to the conceptual model for e-government services.

#### 4.2.1 Citizens

Almost all the citizens using the e-services find the online service beneficial. A mere 8% do not experience any benefits. Saving time and gaining flexibility are the most often mentioned advantages.

**Figure 4-3: Citizens – experienced benefits with Internet services**



Time and flexibility are the advantages most of the citizens experience using the e-services. Citizens appreciate the change of channel from having to go to an office or use the phone, to go on-line whenever they like. It is the value of 'going *on-line*' instead of *in line*' that is appreciated. These are the advantages that in the conceptual model relate to the first step of 'Moving on-line'. Service improvements that relates to higher steps of process integration like faster service reply, more and better information, to save money and the feeling of being more in control of the process are only perceived as an advantage by 30-40% of the citizens. Compared to the 2003 survey, the result is almost identical.

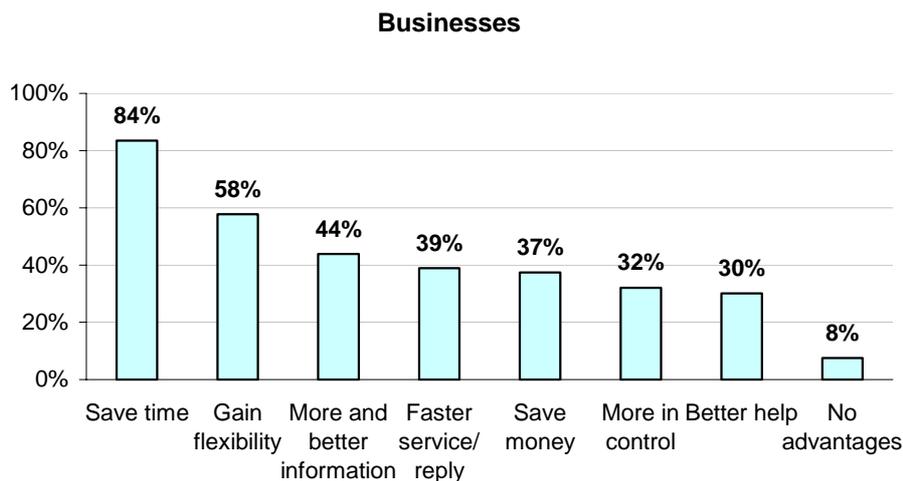
On the basis of citizen experiences, the majority of e-services could be labelled 'First generation' and reaping the internal and external benefits of e-services will require continuous efforts and improvements by webmasters, IT-suppliers, etc.

#### 4.2.2 Businesses

Public e-services can be an important instrument to ease the workload for businesses. Due to their obligations to report to public authorities, e-services have the potential to decrease their administrative burdens and improve on the communication between the public administration and the private sector. This can be done by providing business users with appropriate information on web-pages and allowing reporting and application via the Internet. More advanced e-services for business make it possible to share information from different authorities and reuse information to help the user spend less time fulfilling reporting obligations, etc.

Generally business users see the same benefits as citizens. Again only 8% do not see any advantage in using the public e-services in question and again time-saving and flexibility score high on the list – especially time-saving. More fundamental service improvements like getting a faster service/reply, more and better information, better help and saving money are only experienced by approximately 35-45% of the businesses.

**Figure 4-4: Businesses – experienced benefits with Internet services**



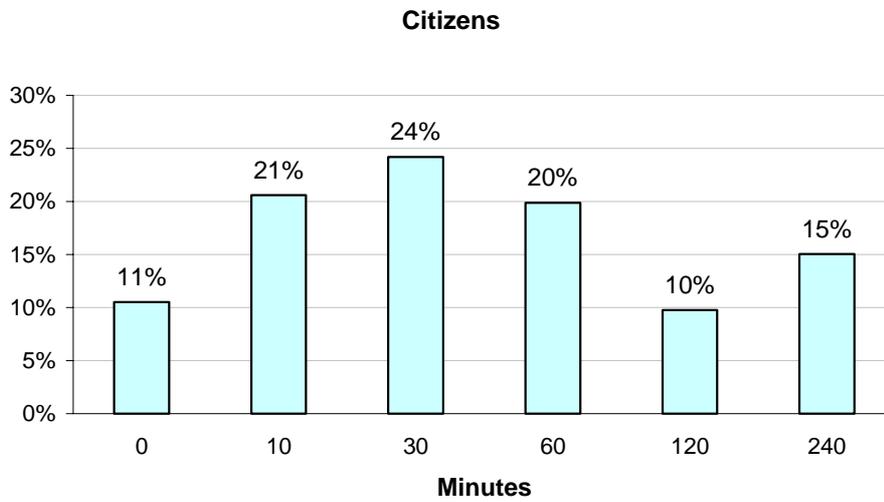
It seems that public e-services have succeeded in providing the extra services of on-line use. This result differs only a little from the 2003 survey and the conclusion must be that the e-services are a success on the channel improvements, but there still is a potential for more advanced services with greater benefits for the users.

#### 4.2.3 *Time saved*

Saving time is the most experienced benefit with almost all public on-line services. How much time the users save each time they use the on-line service instead of the off-line service, is an indication of the value for the users.

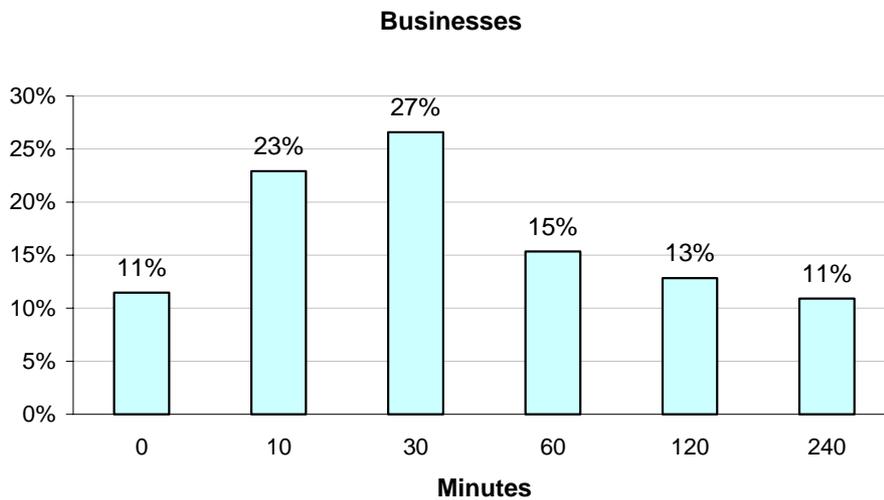
*45% of the citizens save at least an hour, each time they use one of the public e-services. On average the citizen saves 69 minutes each time a service is used on-line instead of off-line. The following figure show how much time the citizens have saved by using the Internet services.*

**Figure 4-5: Citizens - time saved by using Internet services**



For businesses the time saved means money saved. 11% of the businesses who completed the questionnaire find that they do not save any time at all. 39% of the business users save at least an hour, each time they use the public e-services. On the average a business saves 61 minutes each time. The following figure shows how much time the businesses have saved by using the Internet services.

**Figure 4-6: Businesses – time saved by using Internet services**

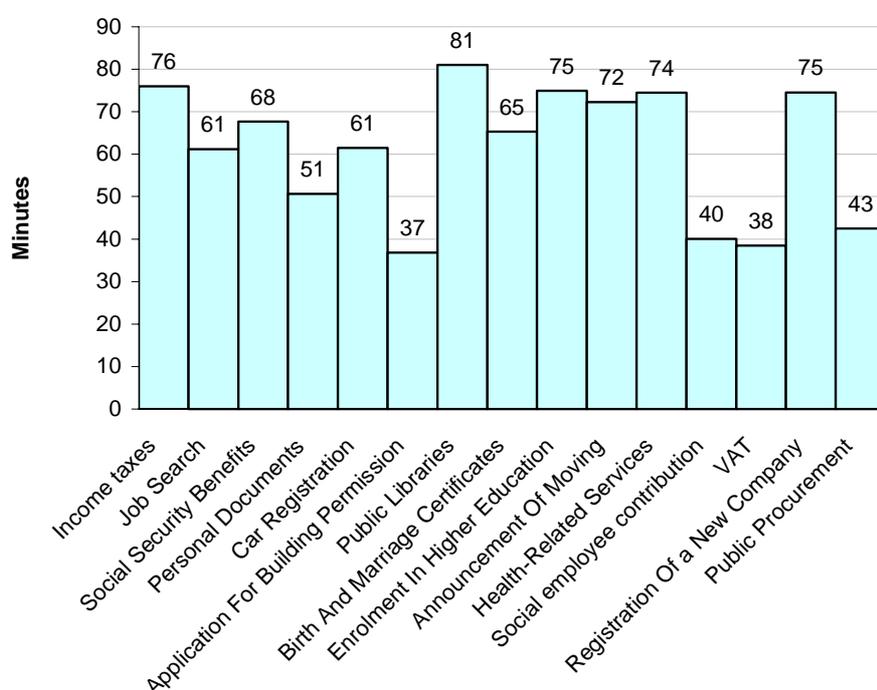


The amount of time saved does not seem to depend on which country we are looking at. The same pattern appears, with a deviation of 1-2 percentage points, regardless of which countries are included in the data. Therefore the above pattern seems to be valid for the European public services for citizens and businesses. Also the average does not vary depending on the country by more than a few minutes.

For a citizen or a business with frequent communication with public administration and many transactions with the public services the on-line service can provide a large saving on time spent. However, emphasizing this point does not mean that this is the only benefit gained by using the on-line services. It is merely an indication of the possible scale of the user advantages and by focusing on the most common benefits it become evident that the potential gain for the citizens and businesses is high.

While the amount of time saved by using the e-services does not vary significantly from country to country, the time saved varies from service to service. The average time saved for each service is shown in the figure below<sup>22</sup>.

**Figure 4-7: Average time saved per transaction per service**



The service with highest value for citizens regarding time saved per transaction is to search for specific media in public libraries. For businesses, it is registration of a new company.

### 4.3 Usability of public e-services

The usability of the e-services is evaluated on five criteria in this survey. Usability is defined as the ease with which visitors are able to use a website (see Section 2.3.3 for a more elaborated definition). Usability should not be confused with functionality, which is focused on functions and features. Increased functionality does not

<sup>22</sup> The services: declaration to the police, statistical submission, environment related permits, custom declaration and corporate tax are not included in the figure, because we do not have sufficient data to calculate average time saved.

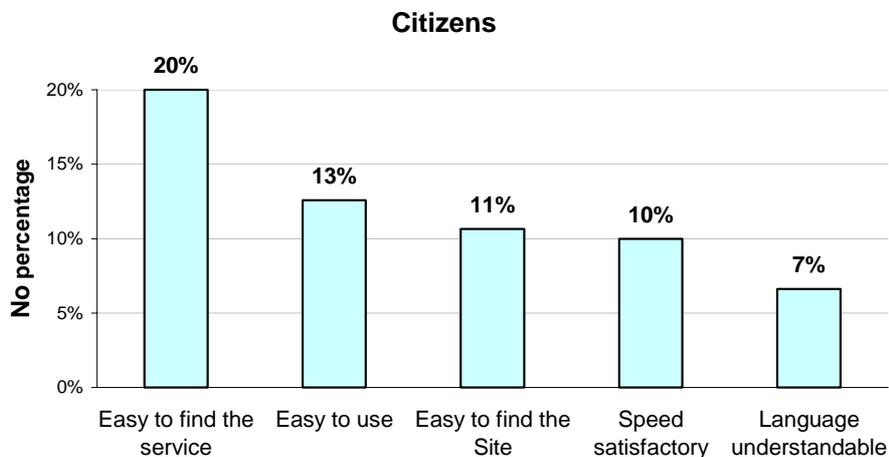
necessarily mean improved usability, and if a product has a high number of features, but users find it difficult to use it, then the usability will be low.

If the users experience many usability problems he/she might be less likely to use the service in the future. Identifying the usability problems that are most often experienced by the citizens and businesses is relevant for the future development of public e-services.

#### 4.3.1 Citizens

The majority of the citizens do not experience problems or annoying factors in the use of public e-services. The figure below illustrates how many of the citizens said "no" regarding the different criteria's fulfilment on the websites.

**Figure 4-8: Citizens – experienced usability problems**

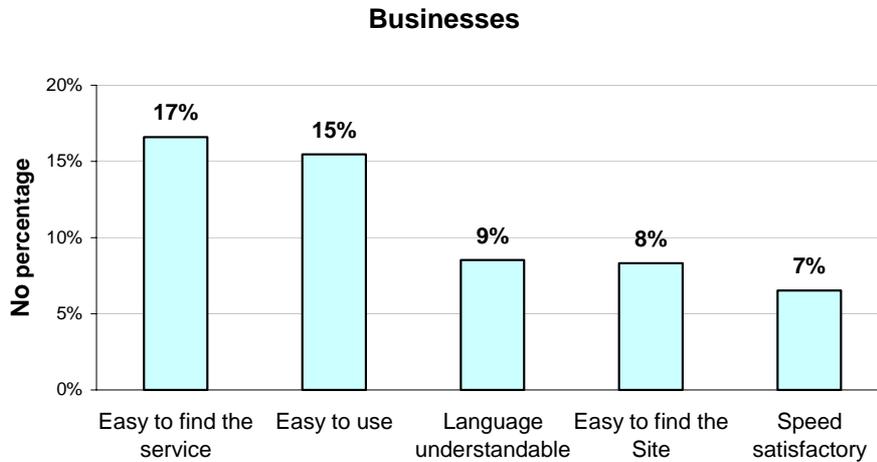


'Easy to find the site' relates to the question "Was it easy to find your way to this website?", whereas easy to find the service relates to the question "Did you find what you were looking for?". 20% did not find what they were looking for (easy to find the service), making this the largest usability problem and 13% did not think the service is easy to use. These results are similar to the 2003 results, with a slight improvement. In general this is positive since usability is considered to be a very important part of the continuous use of the e-service. Still the last problems should be overcome. The strategy of service delivery where service channels are integrated offers some possibilities for the service providers to make the websites and the e-services easier to find for the users.

#### 4.3.2 Businesses

In general the majority of businesses do not experience usability problems. The figure below illustrates how many of the businesses said "no" regarding the different criteria's fulfilment on the websites.

**Figure 4-9: Businesses – experienced usability problems**



'Easy to find the site' relates to the question "Was it easy to find your way to this website?", whereas easy to find the service relates to the question "Did you find what you were looking for?". The usability criterion that has the highest degree of failure (17%) is 'to find the service'. This is a problem since many potential users might be lost before even reaching the service if it is too difficult to find. The second largest problem is that the service is not easy to use. These results are similar to the 2003 survey result. If these criteria were fulfilled to a higher degree, public websites would be improved. Users must not experience too many problems using e-services if the aim is to encourage more on-line use.

#### **4.4 How to get satisfied users**

In this section we will take a closer look at the best way the e-service providers can improve their services, as seen from the user point of view.

Calculations have been made comparing how much more likely it is that a user is *very satisfied* if his/her specific expectation regarding usability or benefits is met compared to if these expectations are not met. The result is an odds-ratio for each usability aspect and each benefit which is a number that expresses how much the aspect means for user satisfaction. A high odds-ratio means a high degree of importance.

##### **4.4.1 Citizens**

The odds ratios show that it is very important to citizens that the usability criteria are met. An problem experienced is felt as a cost for the users, and if the cost exceeds the benefit they will probably not use the public e-service. Therefore the e-service providers of the services that relate to citizens should focus on making the websites user-friendly.

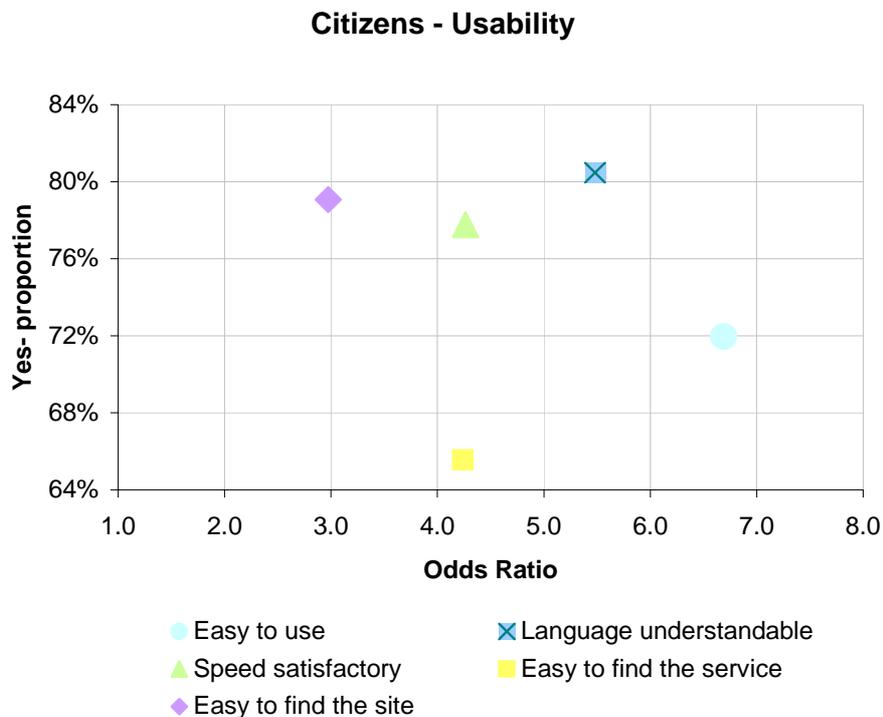
**Table 4-1: Odds ratios for citizen satisfaction**

Citizens	Odds ration
Easy to use	6,69
Language understandable	5,48
Speed satisfactory	4,26
Easy to find the service	4,24
Easy to find the site	2,97
Save time	1,69
Get better help	1,53
Get a faster service/ reply	1,48
Feel more in control	1,39
Get more and better information	1,34
Save money	1,25
Gain flexibility	1,00

The most important factor is that the e-service is easy to use, for example that it is easy to navigate through. It is almost 7 times more likely that the citizen is satisfied if this aspect is fulfilled than if it is not. Among the benefits, *to save time* and *get better help* scores highest in securing citizen satisfaction. Meaning that if the user experience these benefits, there is a higher possibility that he/ she will be satisfied with the service.

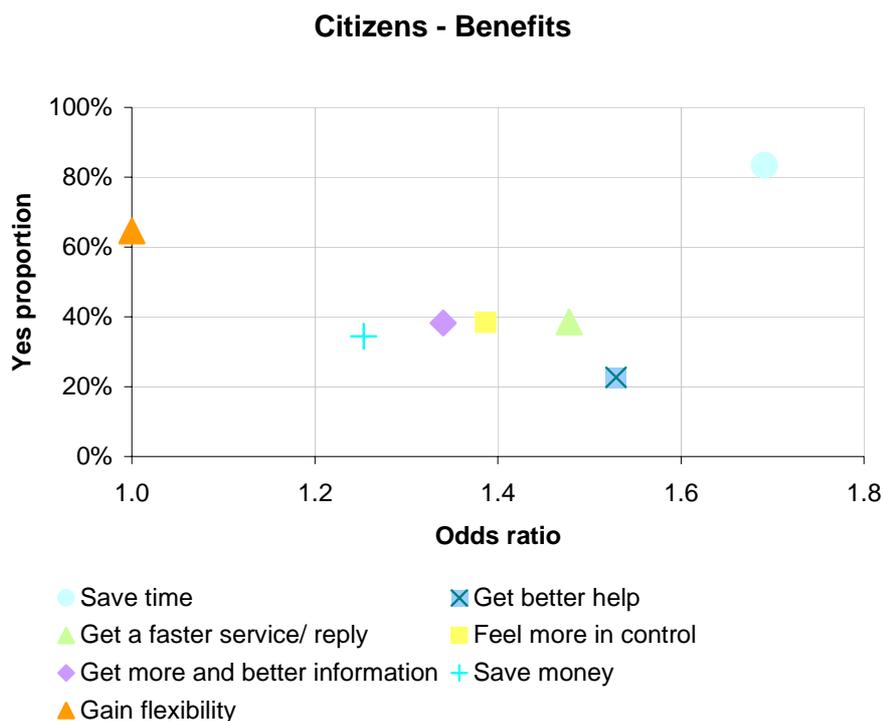
To get a better view of the most important action areas for improvements of public e-services, the odds-ratios for each aspect should be seen in conjunction with the experienced status for that aspect. This is shown in the following diagrams. The first diagram indicates how many percent of the citizens who felt that the usability criterion is fulfilled now (yes-proportion) and how important it is (odds-ratio).

**Figure 4-10: Importance of usability – citizens**



The figure shows that the most important usability factors for user satisfaction are that the service is easy to use and also that this is only achieved by 72% of the participating websites according to the users. Therefore this is clearly a very important area to improve the quality of public e-services for citizens. To make the service easy to find is also an important focus area.

**Figure 4-11: Importance of benefits - citizens**



The figure shows that benefits e-service providers could focus on to improve public e-services in the future are all the service improvements of process integration. Benefits such as faster service/reply, more control over the process and simply receiving more and better information help improve the user's satisfaction but is not experienced by more than 20-40% of the users. Better help facilities for example in filling out on-line forms, is a benefit that many do not provide. Therefore these are possible areas for improving citizen satisfaction.

Even though saving time is the second most important factor for attaining citizen satisfaction, it is already accomplished by most of the public e-services.

**4.4.2 Businesses**

For businesses as well as for citizens the usability aspects are the most important. The table below shows the connection between various factors and business users' evaluation of the participating websites.

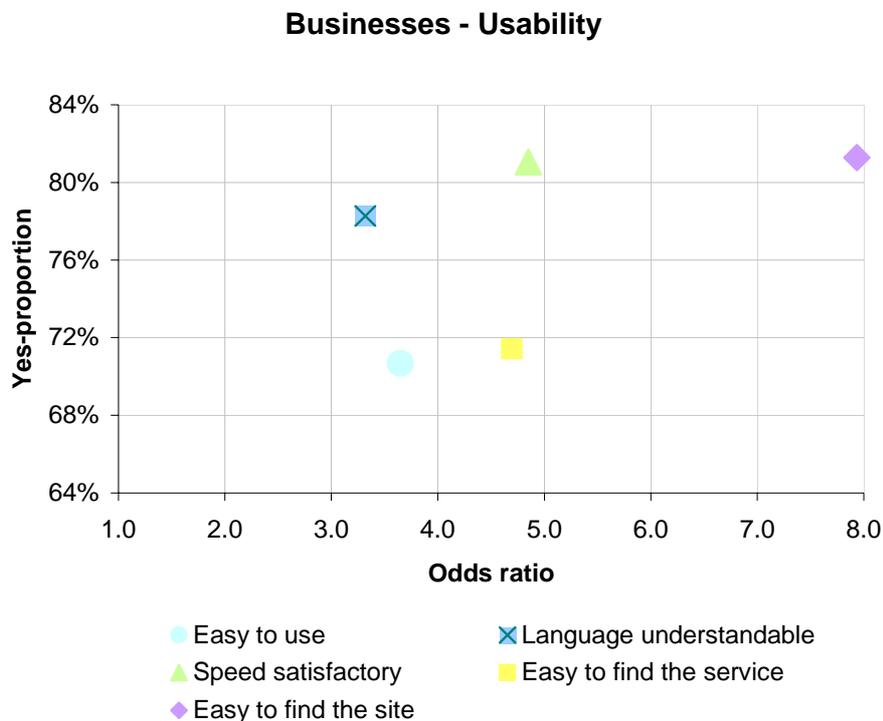
**Table 4-2: Odds-ratios for business satisfaction**

Businesses	Odds ration
Easy to find the site	7,94
Speed satisfactory	4,85
Easy to find the service	4,70
Easy to use	3,65
Language understandable	3,32
Save money	1,43
Get more and better information	1,42
Save time	1,41
Gain flexibility	1,38
Get better help	1,31
Feel more in control	1,21
Get a faster service/ reply	1,00

The table shows that usability is very important to business users' evaluation of e-services. The top five most important factors are all related to usability and within these the most important factors are that the site and the service are easy to find and that the speed is satisfactory.

Again to get a better view of the most important action areas for improvements of public e-services, the odds-ratios for each aspect should be seen in conjunction with the experienced status for that aspect. This is shown in the following diagrams.

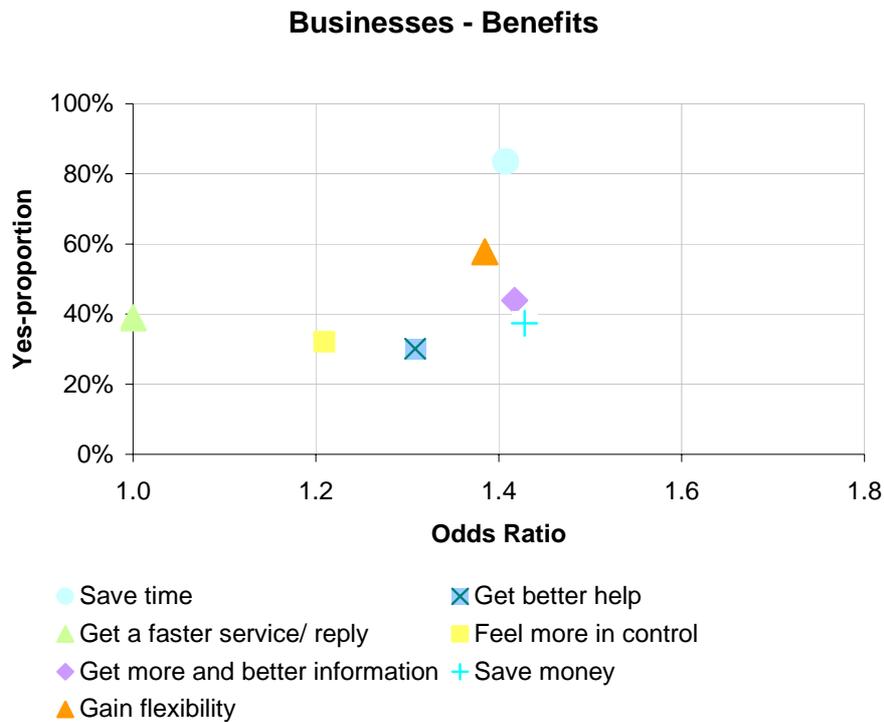
**Figure 4-12: Importance of usability - businesses**



The most important action areas to improve the usability of public e-services are to make the websites easy to find because this aspect has the highest influence on the user satisfaction (odds ration 8.0). The service and information on the websites

should also be easy to find and easy to use, because these are important aspects. Only app. 70% felt that this is achieved by the participating websites. However, it is still important to keep in mind that the website has to function quickly (speed satisfactory). Most of the websites in this survey appear to handle this aspect well.

**Figure 4-13: Importance of benefits - businesses**



The figure shows that in order to increase value for businesses, the service provider could choose to offer actual savings by using the on-line service, because saving money is important for the user satisfaction and is only experienced by 40% of the users of the participating websites. Other most important action areas are to provide more and better information and better help because this influences user satisfaction and is only experienced by 30-40%. Still they also have to ensure that the businesses save time and gain flexibility, but these are fulfilled in most cases by being on-line.

Usability is very important to the citizens and businesses, so the (few) websites with usability problems should focus on that aspect. In general there is a large potential in developing the benefits to include further service improvements. The action areas for the e-service providers of public e-services to improve the quality for citizens and businesses support a scenario of the different kinds of situations in which a user finds himself/herself. Citizens use the service at home and other places and therefore it is important that the services are *easy to use*. Businesses are interested in saving money and they use the service as part of their workday. It is therefore important to them that they can use the service quickly and they can finish the task in a short time by easily finding *what they are searching for*.

## Annex A: Explanation of Methodology

This annex has been added to further explain the methodology behind the survey.

### Introduction

Unlike the more static nature of the ongoing eEurope benchmarking activities, Top of the Web is an initiative that sets a process in motion. A process where the starting point is that quality reviews and involvement can be used as tools to create interest and dialogue between service providers and citizens/businesses about what *good e-service* really is. A process with the goal of ensuring a common understanding that quality is anchored on a decentralised level. This idea has had an impact on the complete survey design and methodology.

### Meeting the objectives

The objectives of the survey are to:

- Gather information on the extent public to which e-services are being used, measured in *on-line percentages* of the total number of transactions.
- Analyse the user satisfaction of on-line public services defined as responding to *needs and expectations*

**The first objective** is being met by collecting quantitative data about on- and off-line use of public services. Since there is no broad European data source where this data can be found it has been vital to involve the service providers themselves in the data collection. The number of service providers with exact statistics about on- and off-line use is still fairly low, especially for the more immature services. This means that it has been difficult to collect a complete picture of the overall use of e-services in Europe. A significant reason for choosing this approach was the hope that by involving the service providers in the data collection it will be possible to create awareness about the importance of measuring on-line use – as well as off-line use – in the continuing improvement of the different e-services. In order to get a higher number of answers, a focused study on six frontrunner services with accessible service providers was carried out in the second survey.

**The second objective** of analyzing the level of user satisfaction relates to the idea of involving the users. The qualitative aspects of the demand side of public e-services can be addressed in several ways. We are aware that absolute quality is not the same as user satisfaction. User satisfaction is influenced by the user's expectations as well as the experience with the service. With a user survey the result is therefore influenced by the user's expectations and knowledge. With an expert review on the other hand, the results is influenced by a set of predefined variables of quality. In this survey it has been essential that **quality** is seen as the **user perception** of e-services. The choice to define quality this way is based on experience with the Danish Top of the Web project, where it has been found that expert reviews do not generate the most valuable information. Such an expert review often lacks the caption of what is the most important issue; the user's perception of the on-line public services.

### Choosing and reaching the target group for the user survey

Having made the methodological choice to involve the webmasters and users to this extent has naturally influenced the survey methodology.

The first obvious result of this survey methodology (on-line questionnaire) is that it excludes the non-user and *potential user* from the data collection. Identifying reasons 48

for not using e-services would of course also be of great use to the improvement of e-services across Europe. Nevertheless, this would result in a new set of methodologically challenges.

The chosen methodology thus has its limitations. The target group for the **user survey** is huge and unknown and therefore cannot be stratified. Furthermore, target groups differ between service categories and possibly also within service categories. However, these limitations have been considered and the benefits of involving the e-service providers and users to create more awareness have outweighed the possible limitations.

The selection criteria for the **websites** are that they contain the 20 basic public e-services, agreed on by the Member States, as indicators of e-government. As for stratification, sampling and making the actual list of URL's, we refer to the source (Cap Gemini Ernst & Young, 2004: "on-line availability of public services" p. 6-7). The webmasters are free to choose whether or not they want to participate because we *wish to include as many as possible*. Furthermore all the users of a participating website are presented with the questionnaire again to reach as many as possible.

All in all this survey does not claim to be based on a completely representative sample of respondents. However it is the aim, within the broad and complex user group, to get an indication of the user satisfaction on European e-services and the areas of success and necessary improvement.

### **Results of the study**

The results of the study are first, the involvement of the service providers in the evaluation they get from their users, which they can benchmark with the other participants' results. Second, it includes this report presenting the total results of the survey on user satisfaction and usage of public e-services. This report has been designed to inspire service providers: by presenting statistics on the benefits offered with e-services, what the common usability problems are and which factors are important to the user's satisfaction plus good examples on high usage or on-line percentages, service integration and/or service promotion. The potential value by developing e-services as well as indications of how other service providers work with the quality of their websites is laid out for the service providers and others with interest in the field.

In an earlier interview with Gartner Research on the 'eEurope Benchmarking Programme', the then Commissioner of the DG InfoSoc, Mr. Erkki Liikanen anticipated such an approach when he says:

*"As far as best practice exchange is concerned, this is not about copying someone else's solution and considering it to be the only truth. Instead it is about accelerated learning from each other." E. Liikanen.*

The consortium believes that the survey methodology will provide the survey with the involving and inspirational dimension that was aimed for – by offering the providers of public on-line services a user evaluation of their website plus inspiration on how to develop public e-services. This will, based on our experiences with the Danish project Top of the Web, automatically generate awareness concerning the quality of public on-line services.

## Annex B: Conceptual Model

This annex has been added as a more thorough explanation of the conceptual model as presented in the first report.

E-government services have been launched or implemented by all countries included in the study, and the range of initiatives is continually evolving. This subsection provides a conceptual framework for understanding the various strategies for e-government services and the underlying need for development of the internal IT infrastructure of public institutions and the impact on user benefits.

The figure below serves to illustrate the correlation between process integration (back office) and service delivery (front office). The correlation is illustrated by a matrix showing where strategies of improved process integration and service delivery produce different generic public e-services.

**Figure B-1 Strategies for development of e-services**

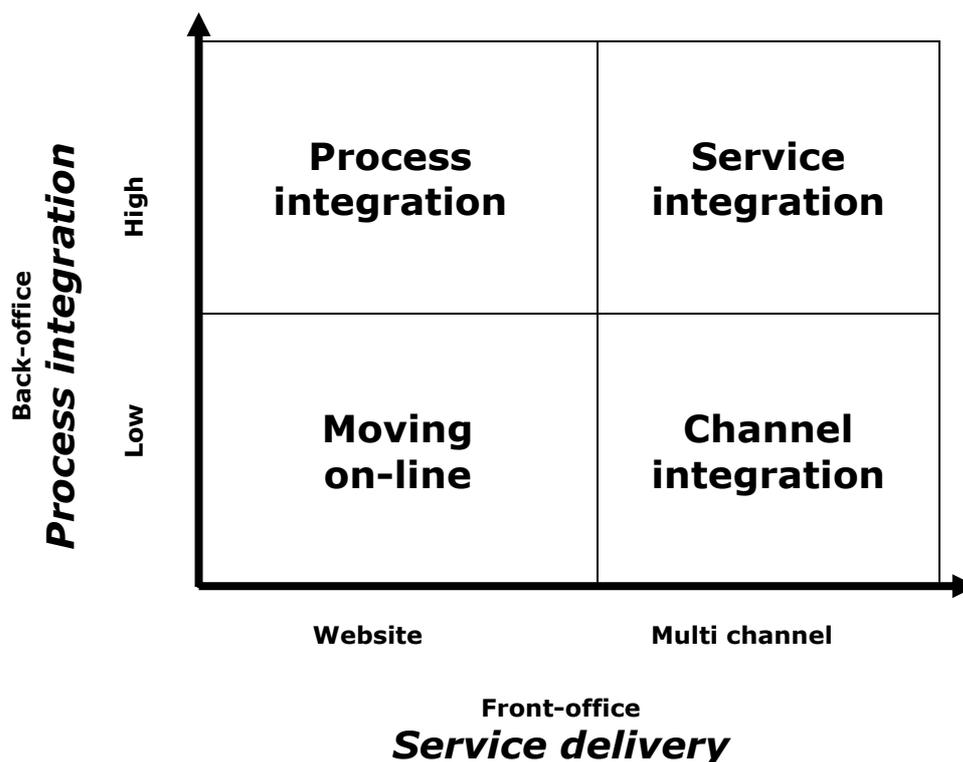


Figure B.1 above illustrates that the most advanced e-government services are a result of a fundamental re-design of key processes (*process integration*) and improvement of front office (*service delivery*).

The concept of *process integration* refers to the degree to which the service is re-engineered by the responsible authority in the transformation from an off-line service to an e-service. A low degree indicates that the service is basically maintained, and

just made available on-line. A high degree of process integration means that an intensive effort in re-thinking the service has been made. It is possible with the on-line services, given the new opportunities offered by new technologies and integration of these back-end systems, to provide a more advanced user experience.

The concept of *service delivery* refers to the channel and distribution strategies in the provision of government services. Relevant channel and distribution strategies are critical for future advancement of e-services to achieve accessible, customer-focused and responsive services. The development of e-services should not only focus on making the service available on the Internet, but also examine the different delivery platforms of the service: agencies, offices, telephone hotlines, etc. A multi-channel access mix with a range of different contact points: government office, help desk, telephone hotline, shops, Internet, will enable the development of an improved and more coherent government service.

Each of the four quadrants of the matrix (figure B.1) is described below. Furthermore benefits on the demand side for the different stages are presented.

#### **Moving on-line - low process integration and one website service delivery**

Simply moving a service from off-line to on-line, and making it available on the Internet is a significant service improvement for many users. Information and transactions are now available 24x7x365. The user benefits are more flexibility and saving of time.

#### **Channel integration - low process integration and multi-channel service delivery**

The Channel integration strategy focuses on making the service available at multiple access points off-line and on-line. Moreover, on-line penetration of the service can be improved by establishing links, pop-up windows, etc. to make users more aware of the existence of the service. Making the service available at multiple access points off-line and on-line, including Internet, agencies, hotlines, etc., improves access to the services. Because the services are made available *where* and *when* they are needed, it becomes easier to find Internet pages and easier to find services.

#### **Process integration - high process integration and one website service delivery**

The process integration means re-engineering of the service by analysing and optimising the underlying workflow and each single element of the service. By automating and simplifying processes, the government can achieve increased productivity combined with a higher service level. Process integration can enable the service providers to provide service improvements beyond the improvements that come with moving on-line. Integration of single-standing IT applications such as databases, administrative systems and the front office systems are critical for process integration because they allow for reuse of data within the institution, and more intelligent use of data. The result can be the speeding up of case handling, which is a huge benefit for users. The process integration also enables the service providers to leave a larger degree of control over the process to the users, as we have seen with home banking. It also opens the opportunity for further service improvements such as more and better information and saving money.

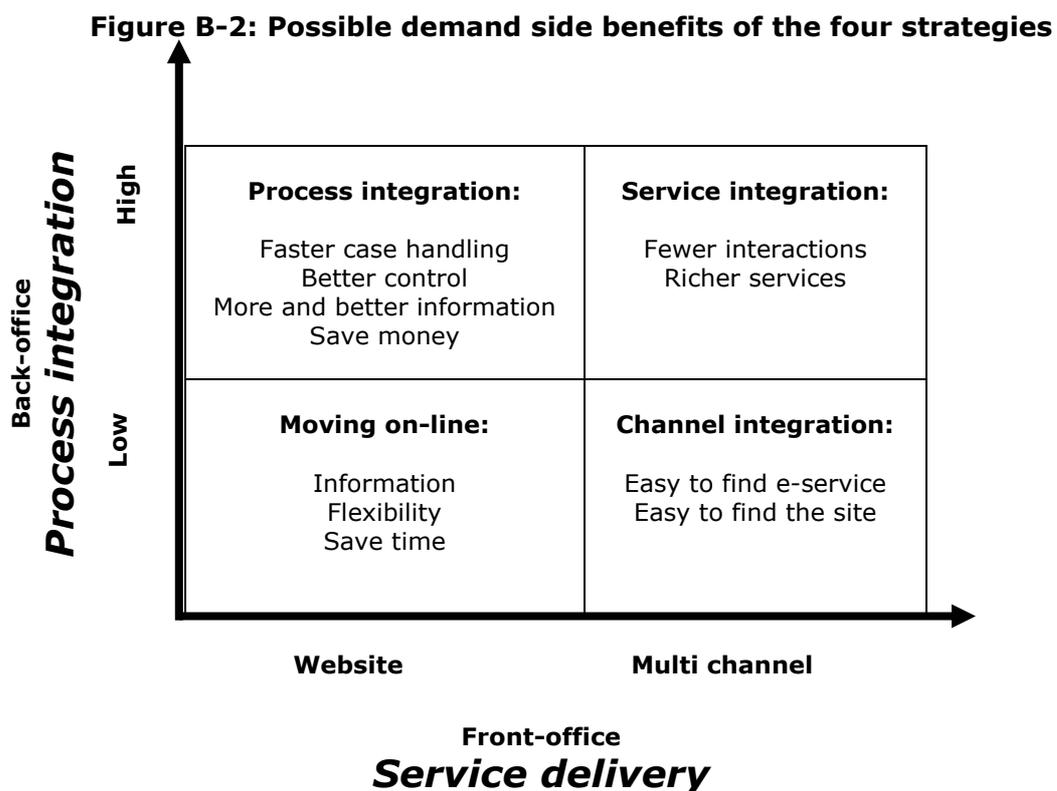
#### **Service integration high process integration and multi-channel service delivery**

The service integration strategy means a decrease of necessary correspondence with governments, and *fewer* interactions between government institutions and the user. With service integration the combined benefits of channel integration and process integration are achieved. Furthermore one effect is efficient reuse of information, where one public institution uses information technology to coordinate information requested from other public authorities in order to prevent superfluous collection and

registration of data. This enables *one-stop-government*, which means that citizens and companies only need to report the same information once or only have to visit one website to complete their interaction with the governmental institutions.

Another possibility is pre-completed formulas by combining various data from the same or different government institutions, to deliver more accurate information to users. This last step opens up innovative uses of technology to offer an improved and richer service.

The figure below serves to illustrate the demand side benefits in relation to the different strategies.



The development described above from moving on-line to service integration means moving to a higher level of service and thus add value for the citizens and business. Another development is individually adapted services, personalised to the specific needs of the user. Through the use of new technology, the user will be offered information that is of specific and relevant interest.



## Annex C: Webmaster/Service Provider Questionnaire

This is an example of the questions presented to the webmasters/e-service providers for the quantitative part of the survey. The text depends on the service type and therefore this is only an example using the service type 'to report income taxes'.

### **How far, is it possible for the user to get in the case handling process, using the service on the internet?**

The user can...

- find information about his/her tax return
- view and print a form for reporting the tax return (and send the printed form by post)
- 1.  fill out and mail the electronic form concerning the tax return - via the homepage
- complete the full case handling via the homepage. That is, fill out and mail an electronic form - concerning the tax return - via the homepage, followed by an automatic reply (e.g. in the shape of a new tax form or an annual statement)
- do not know

The following section contains a number of questions about the amount of on-line as well as off-line users. **If you do not have the correct numbers, we would be happy, if you could give an estimate.**

The following concepts are used:

Off-line: The income tax return is received on paper (or by phone, personal attendance, or similar)

On-line: The income tax return is received electronically via the Internet service

### 2. **How many income tax returns did you receive in 2003 in total?**

(Both off-line as well as on-line)

\_\_\_\_\_ Returns

Do not know

### **How large a percentage, of the income tax returns you received in 2003, was received on-line?**

\_\_\_\_\_ %

Do not know

### **How large a percentage, of the income tax returns you received in 2003, was downloaded**

**from the homepage?**

\_\_\_\_\_ %

Do not know

**The reason for providing services online is often both to improve efficiency and the public service. Which of the reasons are at present the most important for you?**

3.  To improve efficiency?  
 To improve service level?  
 Do not know

**Are there any specific advantages for the user if he/she decides to use the internet service?**

Please, tick all the applicable boxes

The user...

- saves time  
 saves money  
 gains flexibility (e.g. can carry out the process anytime he/she wants to)
4.  achieves a faster case handling/reply  
 receives more and better information  
 receives better help and assurance that the form has been filled in correctly  
 gets a feeling of being in control of the process  
 gets other advantages  
 no  
 do not know

**Have you made an attempt to popularize the knowledge about the on-line service?**

Please, tick all the applicable boxes

Via...

6.  computers that provide access to the service (e.g. at the city hall, libraries, and similar)  
 on-line advertisement (on homepages on the Internet)  
 off-line advertisement (handbills/brochures in the

mail, e.g. in the shape of brochures enclosed in bills or similar, advertisement in magazines, cinemas, TV, or similar)

- a gathering of many services on a sector, regional or national portal
- other ways
- no
- do not know

**How many percent of your transactions can be carried out on-line at a maximum**

(provided that not all user have Internet access and not all transactions can be carried out online)?

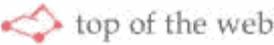
7.

- \_\_\_\_\_ %
- Do not know

**Thank you for your participation**



## Annex D: User Questionnaire

<b>Demonstration User Questionnaire Site</b> <a href="http://www.topoftheweb.net">http://www.topoftheweb.net</a>							
da de el en es fi fr is it nl no pt sv							
Dear User, Would you help us to improve the service: Some service? If so, please use <b>2 minutes</b> of your time to complete the questionnaire!							
	Yes	No	Don't know				
Was it easy to find your way to this website?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
Did you find what you were looking for?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
Is it easy to use the service?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
Are you satisfied with the speed by which the pages appear on the screen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
Is the language clear and easy to understand?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
Do you gain one or more of the following advantages by using this service on the Internet? Please check off all boxes necessary. You ...							
save time			<input type="checkbox"/>				
save money			<input type="checkbox"/>				
gain flexibility (e.g. you can carry out the process anytime)			<input type="checkbox"/>				
get a faster service / reply			<input type="checkbox"/>				
receive more and better information			<input type="checkbox"/>				
receive better help and assurance that the form has been filled in correctly			<input type="checkbox"/>				
get a feeling of being in control of the process			<input type="checkbox"/>				
gain no advantages			<input type="checkbox"/>				
	Yes	No	Don't know				
Would you recommend this service to friends and colleagues?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>				
On a scale from 1 to 6, how would you evaluate the service altogether?							
1	2	3	4	5	6	<input type="radio"/>	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Very bad		Very good			Don't know		
How many times have you used this service during the past year?							
0-1 times		2-5 times		6 or more times			
<input type="radio"/>		<input type="radio"/>		<input type="radio"/>			
How many minutes have you saved by using the service on-line compared to off-line?							
App.	0	10	30	60	120	240	minutes
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



## Annex E: Service Type Characteristics

The types of e-services measured in this study are the 20 basic services agreed on by the Member States. 12 of the services relate to citizens and 8 relate to businesses:

Citizens:

- Income taxes
- Job search
- Social security benefits
- Personal documents
- Car registration
- Application for building permission
- Declaration to the police
- Public libraries
- Birth and marriage certificates
- Enrolment in higher education
- Announcement of moving
- Health-related services

Businesses:

- Social contribution for employees
- Corporate tax
- VAT
- Registration of a new company
- Submission of data to the statistical office
- Custom declaration
- Environment-related permits
- Public procurement

They represent different **types of services**. Four different types of public services are identified (originates from Cap Gemini Ernst & Young's survey on on-line availability):

- **Income generating:** Services where finance flows from citizens and businesses to the government (Income taxes, Social contribution for employees, Corporate tax, VAT, Customs declarations)
- **Registration:** Services related to recording object- or person- related data as a result of administrative obligations (Car registration, Birth and marriage certificates, Announcement of moving, Registration of a new company, Submission of data to statistical offices)
- **Returns:** Public services given to citizens and businesses in return for taxes and contributions (Health related services, Declaration to the police, Social security benefits, Public procurement, Public libraries, Job search services)
- **Permits and Licences:** Documents provided by governmental bodies giving permission to build a house, to run a business etc. (Personal documents, Application for building permission, Enrolment in higher education, Environment related permits)

Four **levels of maturity** are identified (originates from Cap Gemini Ernst & Young's survey on on-line availability):

- **Level 1 – Information:** The information necessary to start the procedure to obtain this service is available on-line.
- **Level 2 – One-way Interaction:** The publicly accessible website offers the possibility to obtain a non-electronic way (by downloading forms) the paper form to start the procedure to obtain this service. An electronic form to order a non-electronic form is also considered as level 2.

- **Level 3 – Two-way interaction:** The publicly accessible website offers the possibility of an electronic intake with an official electronic form to start the procedure to obtain this service. This implies that there must be a form of authentication of the person (physical or juridical) requesting the service in order to reach level 3.
- **Level 4 – Full electronic case handling:** The publicly accessible website offers the possibility to completely treat the public service via the website, including decision and delivery. No other formal procedure is necessary for the applicant via “paperwork”.

Even though the objective of this survey is not to assess the level of maturity of the public e-services, we needed to address the matter anyway in the survey on usage. This was necessary in order to know which questions to ask regarding on-line percentages and to link the answers to the maturity level of the specific service. On-line percentages can only be measured with on-line services (min. level 3). Therefore these four levels of maturity were ‘translated’ into a meaningful maturity-categorization of each of the 20 services.

**Types of service providers** (originates from Cap Gemini Ernst & Young’s survey on on-line availability):

- National governmental level
- Regional governmental level
- Cities and municipalities
- Specific multiple service providers
  - Public libraries
  - Hospitals
  - Universities/ institutes of higher education
  - Police offices.

The type of service provider for the different service types can vary from country to country.



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