

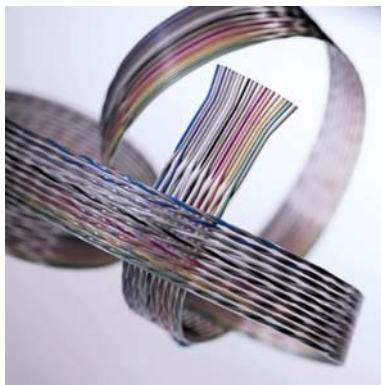
**Kommunikations- und
Technologieforschung**



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Report 04/2007

Serie: The Information Society



Benchmarking in a policy perspective

- Take-up of Advanced Services

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September 2007



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The views expressed in this draft report are those of the authors and do not necessarily reflect those of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the information provided in this document.

The data used for the present report comes from the Eurostat Community Surveys on ICT Usage and e-Commerce in Enterprises 2003, 2004 and 2005 and has been provided by Eurostat. No further data quality and consistency checks have been carried out by the authors; the data was used as provided by Eurostat and the European Commission.

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Bonn and Brussels, June 2007

1 Introduction to the Project “Benchmarking in a Policy Perspective”

1.1 Objectives

The project “Benchmarking in a Policy Perspective” was started by the European Commission in January 2006.

The objective of the “Benchmarking in a Policy Perspective” project initiated by the European Commission is to carry out an in-depth analysis of the results of the annual Information Society Surveys of households and enterprises and to relate them to a number of specific themes. The aim is to address areas beyond simple ICT connectivity and highlight intensity of use and wider impact on individuals, enterprises and communities.

1.2 Topic Reports

The project develops nine Topic Reports for which an in-depth analysis of available survey results, current survey practice and available indicators is carried out and recommendations on measurement are given. A final report includes a summary of key findings.

Table 1-1: Topic Reports of the Project “Benchmarking in a Policy Perspective”

No.	Topic	Date
1	e-Business and the reorganisation of business processes	March 2006
2	Use of broadband	May 2006
3	Take up of advanced services	July 2006
4	Public services on line (including eGovernment and eHealth)	September 2006
5	eInclusion	December 2006
6	Digital literacy	April 2007
7	Recommendations for E-Commerce Questionnaire modules	August 2007
8	Security and confidence	November 2007
9	Summary report of key findings	December 2007

The topic reports cover, with varying focus, the following main items:

- Review of the basic concept and policy issues related to the theme,
- An analysis of past and current Community survey results to provide an overview of progress in the EU,
- A comparison with existing empirical evidence on the same issue to assess the robustness of the results and provide additional qualitative analysis,
- An investigation of international sources to compare EU achievements with its main competitors,
- A proposal for re-wording or expanding the questionnaire used by EUROSTAT for future surveys.

2 Topic Area Definition, Review of Concepts and Policy Issues

Chapter 2 will provide a brief definition of the topic area followed by an overview of relevant policy issues.

2.1 Definition of topic area and basic concepts

In the "i2010 Benchmarking Framework" issued on 20 February 2006, the i2010 High Level Group has formulated proposals for benchmarking i2010 including indicators they deem worthwhile for use and pursuing as part of the Eurostat Community Surveys on ICT usage in the future.

In this document they describe the field of advanced services as follows:

With convergence, content is becoming available in new, diverse formats and includes content that is the digital version of traditional content. The growing availability of business content, public domain content and information, television and radio programmes, movies, games, music, and books in digital form is facilitating the creation of new services. This includes content created by individuals or groups of users, such as personal websites, weblogs or digital pictures that have a growing impact on the social aspects of the information space. The information space is also made up of a wide range of services that are not based on the provision of on-line content. Communication services and applications (email, SMS, MMS, VoIP, video conference, etc.), financial or commercial transaction services or location services associated to mobile devices.

The experts continue with a description of the current availability of measurements and data on the availability and usage of advanced services and based on that start with the definition of indicators suggested for inclusion in the above surveys.

As to the availability of advanced online services they state that there is currently no comprehensive measurement of the availability and purchase of such services. In the current situation measurements will have to be based on the compilation of different sources that might not be all compatible and complemented by market data. They propose pilot studies which will help identify the sources.

On the usage of advanced online services they propose a service focus which should be also included to monitor actual usage, service development and impact. The current version of the household survey includes only a limited number of questions on the use of the internet. Monitoring convergence requires measuring adoption of advanced services by consumers. The household survey includes questions on regular use of internet and use of internet for specific purposes. These should be kept as core indicators. But the question on the use of internet for specific purposes should be reviewed and probably expanded. Core indicators should be complemented by specific modules from the household survey. They propose a detailed module in the 2008 survey on internet usage, including user feedback on the problems encountered when using online services and benefits perceived.

They propose the following indicators:

1. Percentage of individuals regularly using the Internet (population: age 16-74; "regularly" defined as at least weekly, "use" to include all locations/methods of access. Background variables for breakdown/tables: age, gender, employment, status, education level, bandwidth) [eEurope indicator A.2 plus bandwidth]
2. Percentage of individuals doing specific online activities in the previous 3 months broken down by activities, bandwidth, education, and age. (activities: sending/receiving emails, using the Internet for advanced communications, finding information about goods and services, accessing/receiving online media subscriptions (such as newspapers, newsletters), using digital broadcasting services (such as web TV or online radio), playing/downloading games and music, using Internet banking, purchasing and buying on line, and using the Internet for learning purposes) [extended eEurope indicator A.5]

2.2 Policy Issues

Key policy issues related to the topic of broadband use and the use of advanced services include the following objectives:

- to accelerate deployment of broadband by private households and organisations;
 - to support the full exploitation of broadband networks by the research community;
 - to stimulate the deployment of a secure broadband infrastructure;
 - to create a positive environment for private investment;
 - to support the upgrade and efficiency of technology for optical fibre access networks, mobile broadband wireless services (beyond 3G), broadband access satellite systems, convergence of fixed and mobile networks, while taking account of security and privacy issues (wireless, always-on);
 - to support Member States in ensuring effective competition in local telecommunication networks in order to speed up the development of the European broadband network;
 - to foster the use of digital television for interactive services, by 2007, the Commission will have analysed the community acquis affecting information society and media services and will bring forward proposals for change where necessary.
- to foster the development of rich content by providing increased legal and economic certainty to encourage providers to offer new services and on-line content;

Main (recent or current) EU policy initiatives and instruments in the area are:

- The **Barcelona European Council** asked for measures to foster the use of digital television for interactive services;
- The **European Broadband Strategy** in the framework of eEurope 2005 which among other things asked Member States to supply all schools and universities with broadband Internet access for educational and research purposes by end of 2005. Museums, libraries, archives and similar institutions that play a key role in eLearning should also be connected to broadband networks;
- **eEurope 2005** also foresaw support of broadband deployment in less favoured areas, using structural funds and/or financial incentives;
- the **i2010** strategy “A European Information Society for growth and employment” includes as a key objective the creation of “A Single European Information Space offering affordable and secure high bandwidth communications, rich and diverse content and digital services”;
- the strategy also proposes a revision of the ‘**Television without Frontiers**’ directive to modernise the rules on audiovisual media services, in order to boost the creation and circulation of European content;
- Public consultation on the “Digital Divide report” highlighting possible EU initiatives to bridge broadband gap;
- The **i2010** Strategic Framework asks for the completion of a **Single European Information Space** which “promotes an open and competitive internal market for information society and media”;
- The **Public Sector Information Directive** is designed to make it easier for content producers to use and add value to information produced by the public sector, both providing useful content for the development of the Information Society and making public sector content more accessible to more people;
- The policies listed above under “Security including trust, confidence and consumer protection” are also of relevance here because of the vital importance of confidence and perceived security risks for people’s e-commerce related behaviour;
- Promotion of exchange of good practice and monitoring take-up of broadband and advanced services, through **progress reports**.

Sources for empirical data which are not contained in the eEurope 2005 list of policy and supplementary benchmarking indicators include:

- eUser population survey in 10 EU Member States (2005);
- Industry surveys (Forrester, GfK, TNS, NOP).

Selected sources for data about main competitor countries:

- Pew Internet surveys (USA, various years);
- Data from surveys conducted on behalf the National Telecommunications and Information Administration (USA, various years);
- Industry surveys (Forrester, TNS, NOP).

Again, the key resource providing homogenous data on the use of advanced services for Japan, the US, Canada and Australia from one source which will mainly be used for comparing the European situation and developments with those of its main overseas competitors in the present report will be: Booz Allen Hamilton: Business in the Information Age: the International Benchmarking Study 2004.

3 Current Situation and Progress – Empirical Evidence from EU Surveys

3.1 Overview

The present report will analyse the take up and use of advanced services by businesses and households on the basis of the Eurostat survey data.

The key issues addressed in the household surveys include the purpose and nature of activities on the internet by individuals and households which reach beyond the more “traditional” services and include more advanced services such as web TV and web radio but also the use of the internet to make phone calls, peer-to-peer file sharing for exchanging movies, music, etc. and the creation of web pages.

The indicators used and questions posed in the enterprise surveys cover the use of ICT in key business processes ranging from the marketing and sales of products and services to the after sales support services and those services enabling for improvements to and a better management of customer relations (CRM systems) including mobile services.

The report will provide an analysis of the observable trends of the use and uptake over time and thereby provide a comparison of the performance in these areas by countries to answer questions such as:

- Are advanced online services already used by individuals and households to a recognisable extent?
- Who are the major users and what are the determinants of use (e.g. gender, age, education)? How do these vary across the different types of advanced services?
- Are there national and country specific peculiarities and if so, how can these be explained? Are country rankings very specific to the part of uses considered or does the data confirm that there exists an overall correlation between different variables of connectivity and usage?

With respect to the enterprise surveys research questions include the following:

- Does the data confirm a growing demand for and use of ICT to support marketing, sales and after sales services of businesses? Do data show the emergence of new business applications and uses by enterprises?
- How does the use of advanced services by companies vary across the different countries and how can these differences be explained? What are the key determinants for using advanced services?
- Where feasible and appropriate, the study will also provide an analysis according to industrial sectors following the NACE classification and company size. The latter will reveal information on issues such as: does company size matter and does the data indicate a catch-up by SMEs, and if so, in which areas?
- Some attention will also be paid to the emerging field of mobile services to see who the frontrunners in this area are going to be?

A comparison of the Eurostat data with existing empirical evidence on the same issue from international sources to compare EU achievements with those of its main overseas competitors will also be included in the present report where possible.

3.2 Analysis of European Community Survey Results

The focus of the analysis of the European Community Survey data for the “advanced services” topic will – where data is available - be on the indicators contained in the “Benchmarking i2010 Proposals” under this heading.

Several of these indicators, but not all, are available in the Eurostat 2005 Community Survey on ICT Usage and e-Commerce in Enterprises and the Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals under the headings:

Community Survey on ICT Usage in Households and by Individuals

- Purpose and nature of activities on the internet (C7: "For which of the following activities did you use the internet in the last 3 months for private purposes?"), with the following options:
- Telephoning over the internet / videoconferencing (option: b)
- Listening to web radios / watching web television (option: f)
- e-Skills (E3 "Which of the following internet related activities have you already carried out?"), with the following options:
- Using the internet to make phone calls (option: d)
- Using peer-to-peer file sharing for exchanging movies, music, etc. (option: e)
 - Creating a web page (option: f).

Community Survey on ICT Usage and e-Commerce in Enterprises

- Module B: Use of internet (B8 "Did the web site of your enterprise provide the following facilities during January 2005?" (your enterprise as provider of internet services):
- Marketing the enterprise's products
- Facilitating access to product catalogues and price lists
- Customised page for repeat clients
- Delivering digital goods or services
- Providing after sales support
- Providing mobile internet services.

Data is from 2005, and were possible a comparison to data from older surveys such as (2002) 2003 and 2004 will be carried out.

The analysis will – where appropriate - include breakdowns as provided by Eurostat and include an analysis according to:

- Average number of persons employed (company size)
- Main activity of enterprise (industry sector according to the NACE classification), and
- Location (Objective 1 / non-Objective 1 region)

for those indicators for which Eurostat provides data from the Community Survey on ICT Usage and e-Commerce in Enterprises, and according to:

- age
- gender
- education
- location
- (employment situation)
- type of locality
- (broadband household dweller)

for those indicators for which Eurostat provides data from Community Survey on ICT Usage in Households and by Individuals.

Use of Advanced Services by Households and Individuals

Overall the usage figures of advanced services in households and by individuals in Europe are still rather low. The advanced services asked for in the survey are still in their infancy in terms of penetration and use for private purposes.

Web radio and web TV are the services which are mostly used. When only looking at the new member states, the citizens are most active with respect to the use of advanced services in peer-to-peer file sharing for exchanging music, movies etc.

The most intensive users of advanced services come from the Nordic countries, Estonia and Luxembourg. The late comers include Greece, Ireland, Austria and Italy from the old member states and Cyprus and Slovakia from the new member states. Especially in Greece and in Ireland usage figures are extremely low.

In those countries which are either a frontrunner or a late comer, the high versus low usage figures can be observed throughout the different types of advanced services.

The new member states use VoIP more intensively which may also reflect the current situation with respect to telephone tariffs in these countries and the attempt of households to find more efficient alternatives in terms of cost-benefit ratio.

Due to the rather poor data availability over time in many countries, time series analysis is hardly possible.

An analysis differentiating according to socio-demographic variables shows that in most countries strong differences exist with respect to age, gender and level of education. The typical user of advanced services in Europe is a young man with high education level.

One can assume that with an increasing penetration and use of advanced services this will even out. In the frontrunner countries we find first pointers to other groups of citizens (e.g. the mid-aged citizens) already catching up.

It seems worthwhile noting that the usage behaviour is somewhat different in some countries with men with low education are frequently the more intensive users of peer-to-peer file-sharing for exchanging movies, music etc. compared to other advanced services.

In regions which are more thinly populated usage levels are lower compared to urban areas.

Percentage of the population who have used advanced services of different types in Europe 2005

	Country	VoIP / Videoconferencing *)	Web radio / TV*)	Making phone calls	Peer-to-peer file-sharing	Create a web page
EU25	European Union (25 countries)	3.9	10.4	6.6	9.1	8.4
EU15	European Union (15 countries)	3.7	11.5	6.5	9.3	8.9
NMS10	New EU Member States (10 countries)	4.7	6.2	6.9	8.3	6.7
Eurozone	Euro-zone	3.3	10.2	:	:	:
BE	Belgium	:	:	:	:	:
CZ	Czech Republic	5.5	2.8	:	:	8.2
DK	Denmark	8.8	19.1	12.9	10.4	16.3
DE	Germany	u	u	5.9	7.5	8.8
EE	Estonia	10.2	15.0	26.2	21.9	20.3
GR	Greece	0.7	3.8	1.8	2.8	2.0
ES	Spain	3.6	24.3	:	:	:
FR	France	:	:	:	:	:
IE	Ireland	2.9	4.0	1.7	2.3	2.2
IT	Italy	2.2	4.6	7.5	8.3	6.8
CY	Cyprus	2.3	8.7	4.0	6.1	4.4
LV	Latvia	8.3	11.5	8.1	5.7	3.7
LT	Lithuania	4.4	10.9	6.5	7.3	3.5
LU	Luxembourg	10.9	19.1	11.8	17.6	13.7
HU	Hungary	4.1	7.2	5.6	6.2	6.7
MT	Malta	:	:	:	:	:
NL	Netherlands	5.0	19.8	:	:	:
AT	Austria	3.6	5.3	4.8	5.8	7.3
PL	Poland	4.5	5.7	7.1	8.9	6.2
PT	Portugal	3.2	9.0	5.4	8.3	4.9
SI	Slovenia	u	10.5	5.3	8.7	7.0
SK	Slovakia	3.6	5.5	4.1	6.2	6.9
FI	Finland	9.7	16.7	9.7	12.8	18.0
SE	Sweden	4.5	20.5	6.6	17.9	13.6
UK	United Kingdom	4.8	:	7.1	13.8	12.0
BG	Bulgaria	:	:	:	:	:
RO	Romania	:	:	:	:	:
IS	Iceland	14.1	31.4	17.6	18.3	26.6
NO	Norway	7.6	24.4	11.4	19.1	16.0

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available; no data at all is available for Belgium, France, Malta, Bulgaria and Romania

*) use in the last 3 months for private purposes; (u) Data unreliable

Telephoning over the internet / videoconferencing

Telephoning over the internet (VoIP) and the use of videoconferencing services by households and individuals is most widespread in the Northern parts of Europe and the Baltic states as well as in Luxembourg.

Percentage of the population who have used the internet, in the last 3 months, for telephoning or videoconferencing in Europe 2002 – 2005

	Country	2002	2003	2004	2005
EU25	European Union (25 countries)	:	:	3.1	3.9
EU15	European Union (15 countries)	:	2.5	3.0	3.7
NMS10	New EU Member States (10 countries)	:	:	3.5	4.7
Eurozone	Euro-zone	:	:	:	3.3
BE	Belgium	:	:	:	:
CZ	Czech Republic	:	2.4	5.4	5.5
DK	Denmark	2.6	3.9	5.7	8.8
DE	Germany	1.0	1.3	2.4	u
EE	Estonia	:	:	:	10.2
GR	Greece	0.5	1.1	1.1	0.7
ES	Spain	1.2	3.0	2.9	3.6
FR	France	:	:	:	:
IE	Ireland	:	2.1	2.0	2.9
IT	Italy	:	:	:	2.2
CY	Cyprus	:	:	2.8	2.3
LV	Latvia	:	:	2.9	8.3
LT	Lithuania	:	1.1	1.9	4.4
LU	Luxembourg	2.6	4.6	5.9	10.9
HU	Hungary	:	:	2.1	4.1
MT	Malta	:	:	:	:
NL	Netherlands	:	:	:	5.0
AT	Austria	1.3	2.8	1.8	3.6
PL	Poland	:	:	3.5	4.5
PT	Portugal	:	2.5	3.1	3.2
SI	Slovenia	:	:	2.6	u
SK	Slovakia	:	:	4.5	3.6
FI	Finland	0.9	2.3	5.3	9.7
SE	Sweden	3.8	3.3	3.8	4.5
UK	United Kingdom	1.7	4.0	4.0	4.8
BG	Bulgaria	:	:	1.9	:
RO	Romania	:	:	0.6	:
IS	Iceland	:	6.8	8.8	14.1
NO	Norway	:	4.2	5.5	7.6

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available; no data at all is available for Belgium, France and Malta

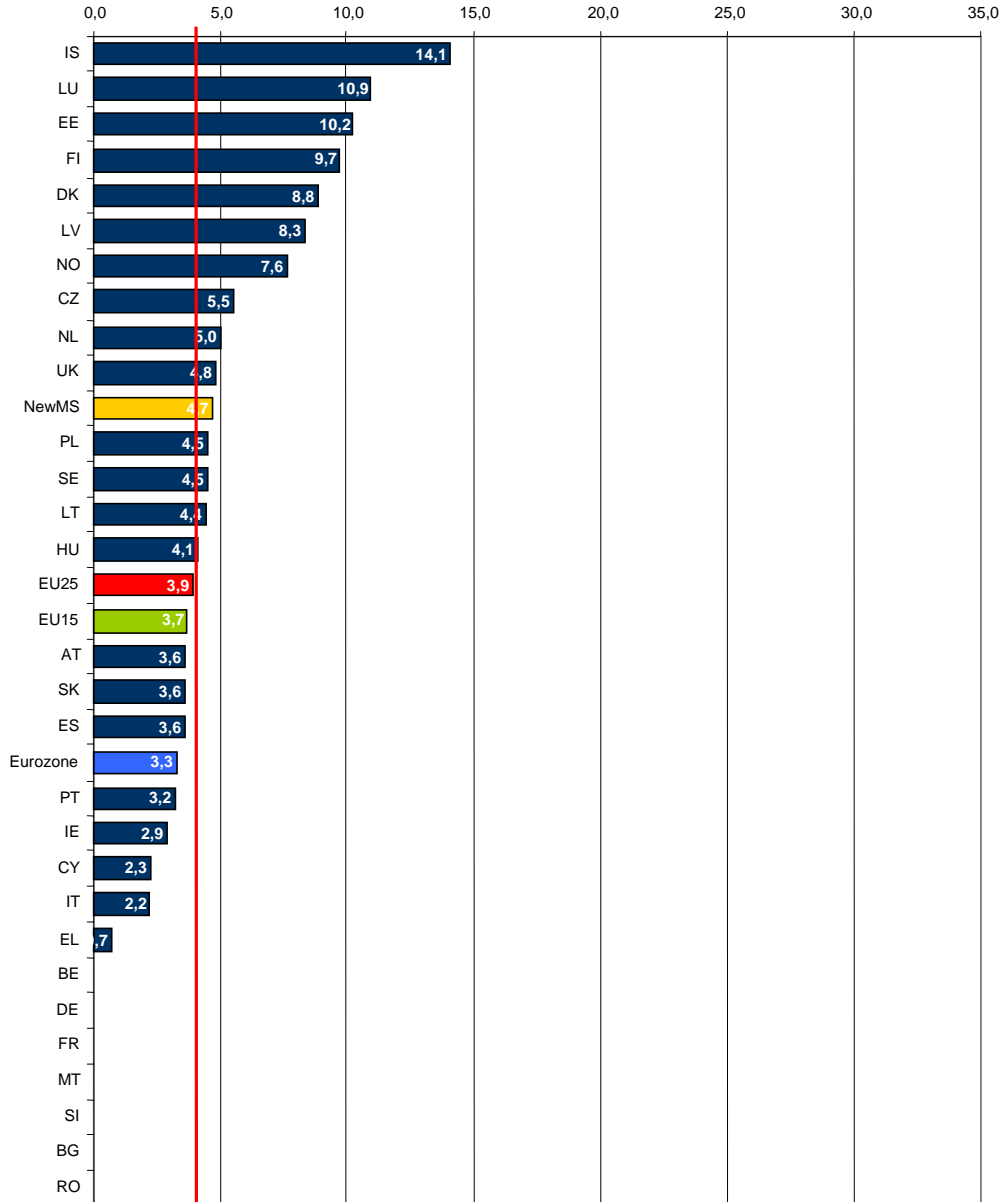
Germany and Italy belong to the group of late comers with figures significantly below those of the frontrunners. It appears, as if the lowering of the telephone tariffs, which has taken place over the past years in these countries, is not encouraging the use of alternative technologies like for instance Voice over IP.

The range of use of VoIP in the old member states is from less than 1% in Greece to 11% in Luxembourg. In the new member states Cyprus ranks last with 2% and Estonia takes the lead with 10%.

Based on the little data available for all years from 2002 to 2005 one can state that there are rather little changes and only a very moderate growth over time except in the frontrunner countries. In

Luxembourg usage figure increased from 3% in 2002 to 11% in 2005, in Finland from 1% to 10% and in Denmark from 3% to 9%.

Percentage of the population who have used the internet, in the last 3 months, for telephoning or



videoconferencing in Europe 2002 – 2005 (graphic with country ranking)

Listening to web radios / watching web television

Listening to web radios / watching web television is the advanced service mostly used in Europe with the old member states (12% of the citizens) doing this almost twice as frequently than the new member states (6%). Unfortunately the data does not allow for a differentiated analysis of web radio and web TV.

The range of user shares in the different countries is enormous with 31% of the Icelandic citizens actively listening to web radio and watching web TV compared to just 4% in Greece and Ireland. In the new member states this range is from 15% in Estonia to 3% in the Czech Republic.

The European frontrunners are the Nordic countries and Estonia in this sequence: Iceland, Norway, Estonia, Sweden, Denmark, Luxembourg and Finland. In Iceland almost every third citizen has used web radio or web TV, in other Nordic countries its one in five and in Estonia one in seven.

The late comers can equally be found in the old and the new member states with the Czech Republic showing the lowest figures followed by Greece, Ireland, Italy, Slovakia and Poland ranging from 3% to 6%. This results in one in 33 or one in 17 having used this advanced service.

Comparisons over time and an analysis of developments are hardly possible due to a lack of data in most countries. Where data is available we are either confronted with a rather moderate growth like in Germany, Greece, Lithuania and Austria or a strong growth like in Luxembourg, Denmark, Sweden and Iceland.

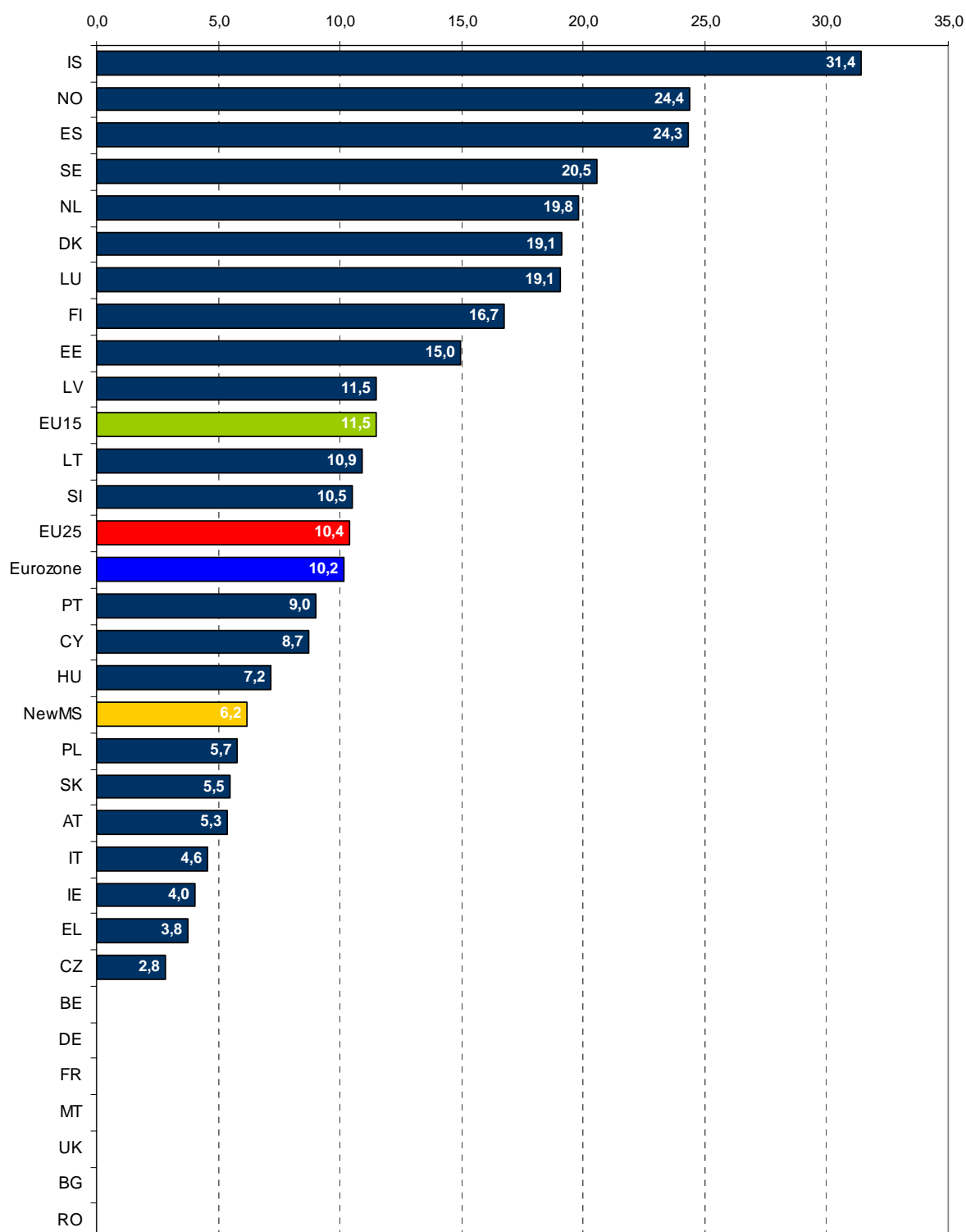
Percentage of the population who have used the internet, in the last 3 months, for listening to Web radios / for watching Web television in Europe 2002 – 2005

	Country	2002	2003	2004	2005
EU25	European Union (25 countries)	:	:	:	10.4
EU15	European Union (15 countries)	:	:	:	11.5
NMS10	New EU Member States (10 countries)	:	:	:	6.2
Eurozone	Euro-zone	:	:	:	10.2
BE	Belgium	:	:	:	:
CZ	Czech Republic	:	2.5	3.0	2.8
DK	Denmark	8.2	12.0	16.1	19.1
DE	Germany	2.9	4.4	7.7	u
EE	Estonia	:	:	13.3	15.0
GR	Greece	2.6	3.0	4.3	3.8
ES	Spain	:	:	:	24.3
FR	France	:	:	:	:
IE	Ireland	:	2.5	2.6	4.0
IT	Italy	:	:	:	4.6
CY	Cyprus	:	:	11.5	8.7
LV	Latvia	:	:	9.5	11.5
LT	Lithuania	:	6.8	8.3	10.9
LU	Luxembourg	5.8	8.9	14.9	19.1
HU	Hungary	:	:	3.3	7.2
MT	Malta	:	:	:	:
NL	Netherlands	:	:	:	19.8
AT	Austria	2.4	4.1	3.2	5.3
PL	Poland	:	:	5.6	5.7
PT	Portugal	:	5.9	8.1	9.0
SI	Slovenia	:	:	6.4	10.5
SK	Slovakia	:	:	6.0	5.5
FI	Finland	6.1	9.6	11.9	16.7
SE	Sweden	13.1	14.7	12.7	20.5
UK	United Kingdom	4.0	10.3	9.6	:
BG	Bulgaria	:	:	6.1	:
RO	Romania	:	:	1.6	:
IS	Iceland	:	16.7	21.1	31.4
NO	Norway	:	17.4	21.3	24.4

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available; no data at all is available for Belgium, France and Malta

Percentage of the population who have used the internet, in the last 3 months, for listening to Web radios / for watching Web television in Europe 2002 – 2005 (country rankings)



Using the internet to make phone calls

Around 7% of the European citizens have ever made a phone call via the internet. The range in the new member states is from a very high 26% in Estonia, which is by far leading the field, to just 4% in

Cyprus and Slovakia. In the old member states, Denmark is the frontrunner with 13% and Ireland and Greece the late comers with only 2%. Apart from the very impressive frontrunner Estonia, Iceland, Denmark, Luxembourg and Norway belong to the group countries with rather active telephone callers using the internet

When comparing the results to the ones relating to the question on having used the internet in the last three months for telephoning over the internet, it becomes apparent that 4% have used it recently compared to 7% who have at some stage been a user. From this one can conclude that approximately 60% of those who have ever used the internet for telephoning are the more regular users.

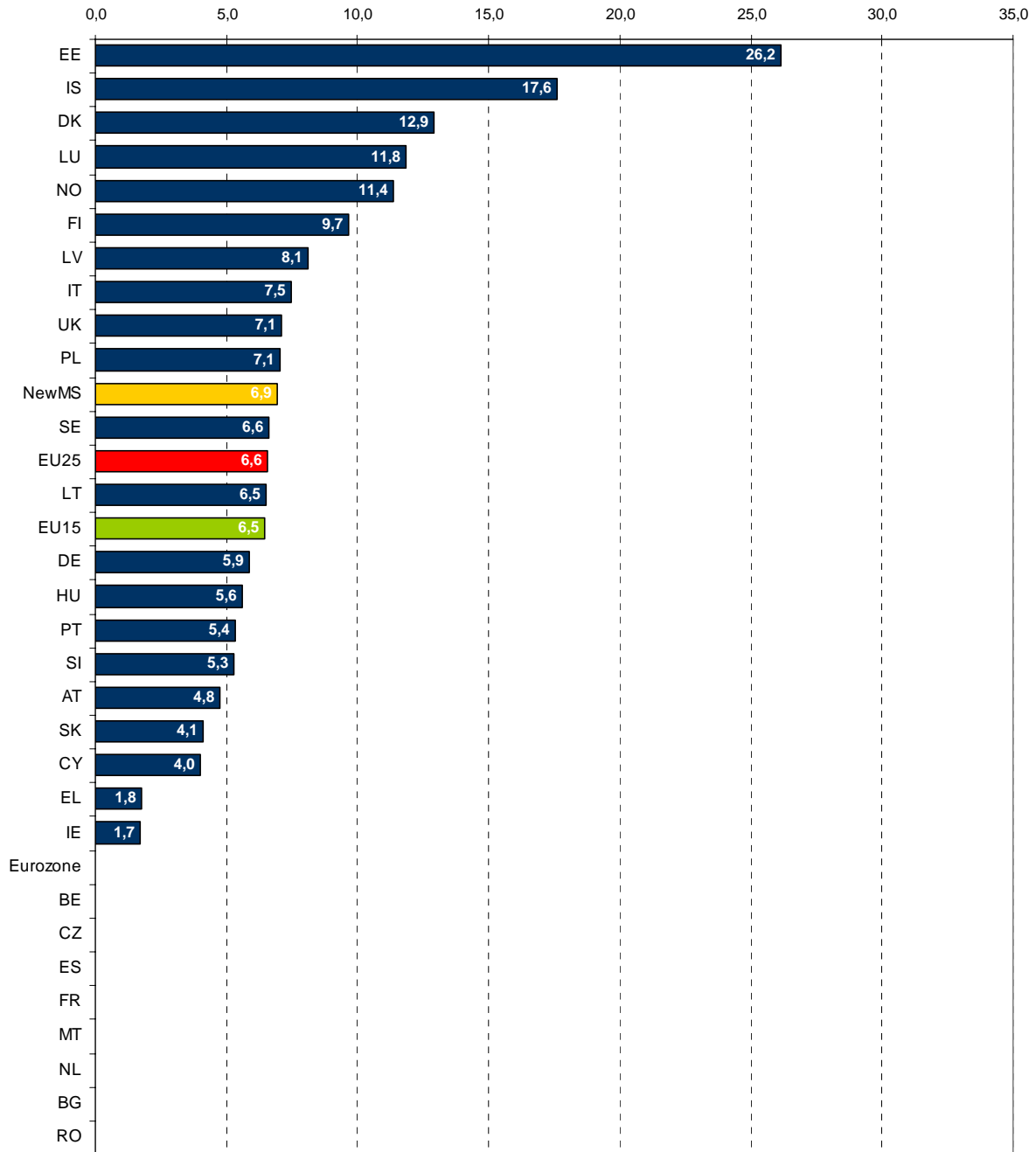
**Percentage of the population who have used the internet for telephoning or videoconferencing in Europe
2002 – 2005**

	Country	2002	2003	2004	2005
EU25	European Union (25 countries)	:	:	:	6.6
EU15	European Union (15 countries)	:	:	:	6.5
NMS10	New EU Member States (10 countries)	:	:	:	6.9
Eurozone	Euro-zone	:	:	:	:
BE	Belgium	:	:	:	:
CZ	Czech Republic	:	:	:	:
DK	Denmark	:	:	:	12.9
DE	Germany	:	:	:	5.9
EE	Estonia	:	:	:	26.2
GR	Greece	:	:	:	1.8
ES	Spain	:	:	:	:
FR	France	:	:	:	:
IE	Ireland	:	:	:	1.7
IT	Italy	:	:	:	7.5
CY	Cyprus	:	:	:	4.0
LV	Latvia	:	:	:	8.1
LT	Lithuania	:	:	:	6.5
LU	Luxembourg	:	:	:	11.8
HU	Hungary	:	:	:	5.6
MT	Malta	:	:	:	:
NL	Netherlands	:	:	:	:
AT	Austria	:	:	:	4.8
PL	Poland	:	:	:	7.1
PT	Portugal	:	:	:	5.4
SI	Slovenia	:	:	:	5.3
SK	Slovakia	:	:	:	4.1
FI	Finland	:	:	:	9.7
SE	Sweden	:	:	:	6.6
UK	United Kingdom	:	:	:	7.1
BG	Bulgaria	:	:	:	:
RO	Romania	:	:	:	:
IS	Iceland	:	:	:	17.6
NO	Norway	:	:	:	11.4

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available; no data at all is available for Belgium, France and Malta

Percentage of the population who have used the internet for telephoning or videoconferencing in Europe 2002 – 2005 (country rankings)



Use of peer-to-peer file-sharing for exchanging movies, music, etc.

The attractiveness of using peer-to-peer file-sharing for exchanging movies, music, etc. varies considerably between the European countries. On average, 9% of the citizens have done this at some stage.

Again, Estonia is leading the field with 22%, i.e. more than one in five have made use of this service. The new member states Latvia, Cyprus and Hungary reach only 6% and belong to the group of late comers. However, again Ireland but also Greece with 2% and 3% show an even lower level of use. The frontrunners in the old member states are Sweden and Luxembourg with 18%. Iceland and Norway are approaching the 20%.

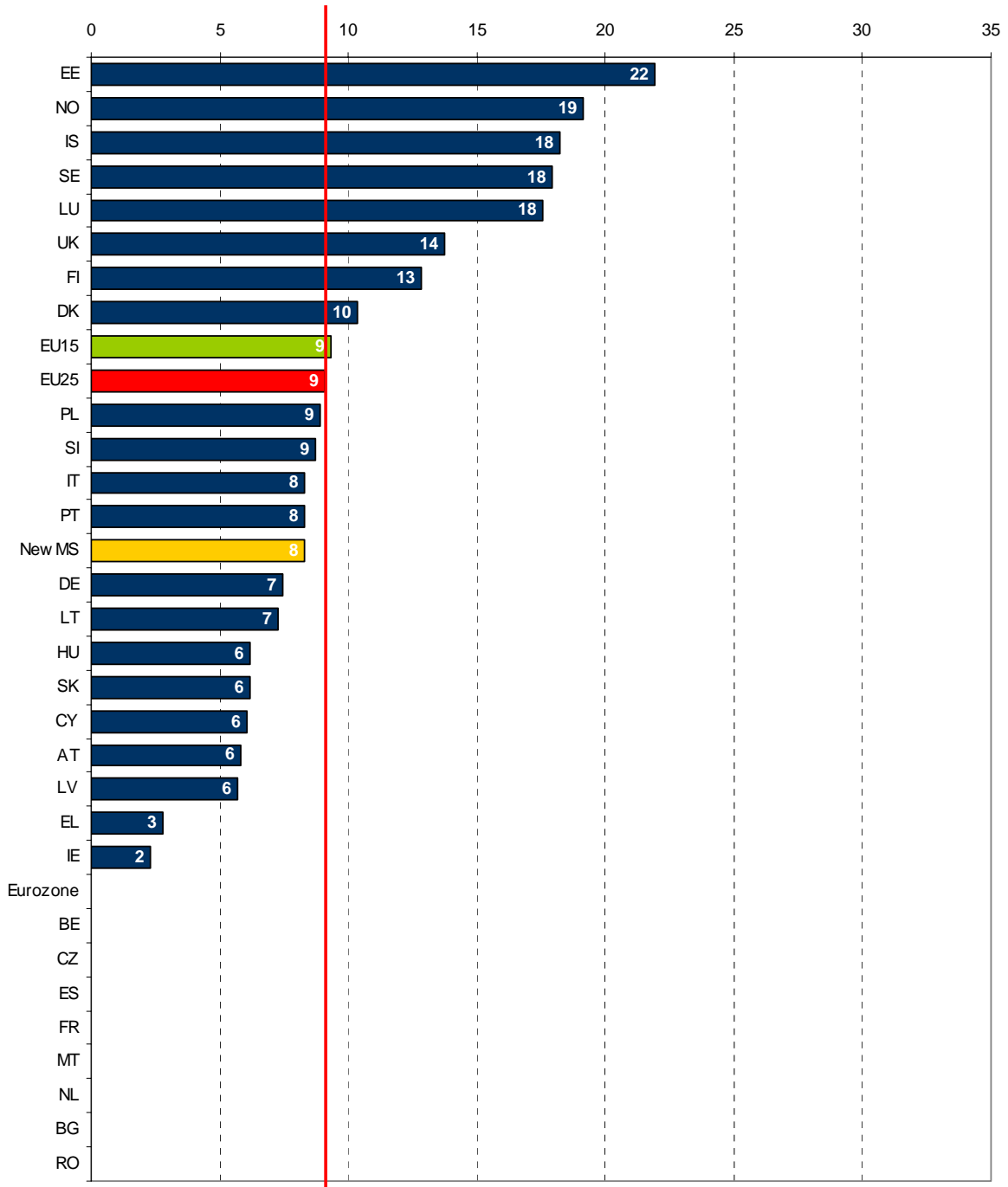
Percentage of the population who have used the internet for peer-to-peer file sharing for exchanging movies, music, etc. in Europe 2002 – 2005

	Country	2002	2003	2004	2005
EU25	European Union (25 countries)	:	:	:	9.1
EU15	European Union (15 countries)	:	:	:	9.3
NMS10	New EU Member States (10 countries)	:	:	:	8.3
Eurozone	Euro-zone	:	:	:	:
BE	Belgium	:	:	:	:
CZ	Czech Republic	:	:	:	:
DK	Denmark	:	:	:	10.4
DE	Germany	:	:	:	7.5
EE	Estonia	:	:	:	21.9
GR	Greece	:	:	:	2.8
ES	Spain	:	:	:	:
FR	France	:	:	:	:
IE	Ireland	:	:	:	2.3
IT	Italy	:	:	:	8.3
CY	Cyprus	:	:	:	6.1
LV	Latvia	:	:	:	5.7
LT	Lithuania	:	:	:	7.3
LU	Luxembourg	:	:	:	17.6
HU	Hungary	:	:	:	6.2
MT	Malta	:	:	:	:
NL	Netherlands	:	:	:	:
AT	Austria	:	:	:	5.8
PL	Poland	:	:	:	8.9
PT	Portugal	:	:	:	8.3
SI	Slovenia	:	:	:	8.7
SK	Slovakia	:	:	:	6.2
FI	Finland	:	:	:	12.8
SE	Sweden	:	:	:	17.9
UK	United Kingdom	:	:	:	13.8
BG	Bulgaria	:	:	:	:
RO	Romania	:	:	:	:
IS	Iceland	:	:	:	18.3
NO	Norway	:	:	:	19.1

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available; no data at all is available for Belgium, France and Malta

Percentage of the population who have used the internet for peer-to-peer file sharing for exchanging movies, music, etc. in Europe 2002 – 2005 (country rankings)



Creating a web page

On average, 8% of European citizens have at some stage created their own web page.

Percentage of the population who have used the internet for creating a web page in Europe 2002 – 2005

	Country	2002	2003	2004	2005
EU25	European Union (25 countries)	:	:	:	8.4
EU15	European Union (15 countries)	:	:	:	8.9
NMS10	New EU Member States (10 countries)	:	:	:	6.7
Eurozone	Euro-zone	:	:	:	:
BE	Belgium	:	:	:	:
CZ	Czech Republic	:	8.4	:	8.2
DK	Denmark	:	19.7	15.4	16.3
DE	Germany	:	9.8	17.2	8.8
EE	Estonia	:	:	10.9	20.3
GR	Greece	:	3.9	3.7	2.0
ES	Spain	:	:	:	:
FR	France	:	:	:	:
IE	Ireland	:	5.1	:	2.2
IT	Italy	:	:	:	6.8
CY	Cyprus	:	:	7.1	4.4
LV	Latvia	:	:	4.8	3.7
LT	Lithuania	:	4.4	5.5	3.5
LU	Luxembourg	:	15.6	17.0	13.7
HU	Hungary	:	:	3.4	6.7
MT	Malta	:	:	:	:
NL	Netherlands	:	:	:	:
AT	Austria	:	9.6	4.5	7.3
PL	Poland	:	:	6.6	6.2
PT	Portugal	:	:	11.9	4.9
SI	Slovenia	:	:	9.3	7.0
SK	Slovakia	:	:	7.2	6.9
FI	Finland	:	18.2	37.8	18.0
SE	Sweden	:	17.8	:	13.6
UK	United Kingdom	:	14.9	13.5	12.0
BG	Bulgaria	:	:	4.1	:
RO	Romania	:	:	1.1	:
IS	Iceland	:	22.8	30.6	26.6
NO	Norway	:	16.4	24.1	16.0

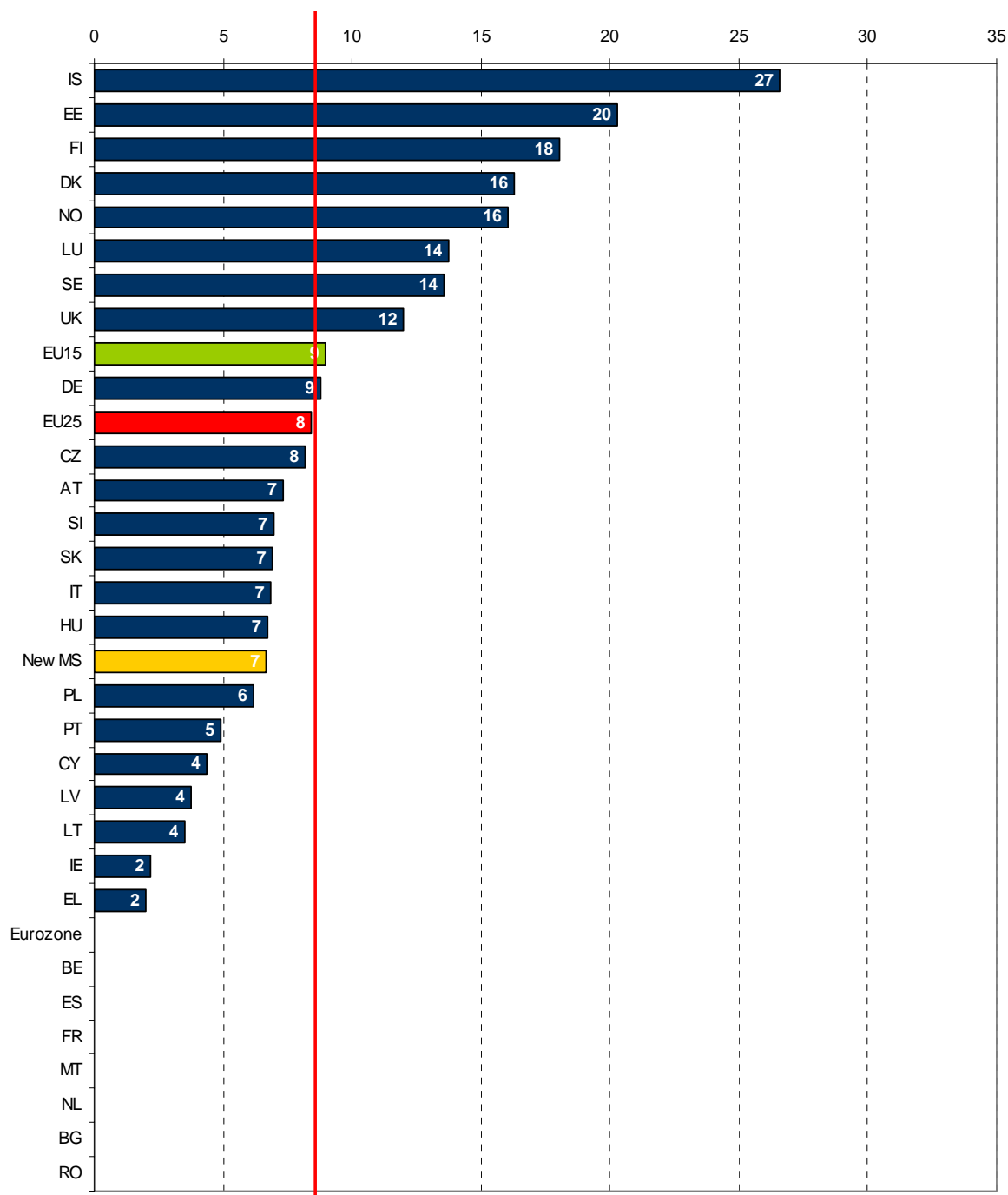
Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available; no data at all is available for Belgium, France and Malta

The range in the new member states is from a very high 20% in Estonia to just 4% in Latvia, Lithuania and Cyprus. In the old member states, Finland ranks top with 18%, Greece and Ireland find themselves at the tail end with only 2%. The absolute frontrunner is Iceland where more than one in five citizens have created a web page.

The figures on this question need to be treated with some caution since when looking at the developments over time one can identify decreasing figures from 2004 to 2005 which can not be explained.

Percentage of the population who have used the internet for creating a web page in Europe 2002 – 2005 (country rankings)



Use according to socio-demographic characteristics of households and individuals

Gender

The use of advanced services depends heavily on gender: men are the much more intensive users than women. This applies to all advanced services. On average there are two male users on one female user. The most striking differences can be found on the use peer-to-peer file sharing for exchanging movies, music etc (ever).

The pattern is identical in all 27 countries analysed.

In countries, where there is data available for different points in time, the same gender-specific patterns can be observed in all years.

Percentage of the population who have different types of advanced services by gender in Europe 2005

	Telephoning over the Internet/ video-conferencing	Listening to Web radios/ watching Web television	Make phone calls (ever)	Use peer-to-peer file sharing for exchanging movies, music etc (ever)	Create a web page (ever)
Female	2.6	7.2	4.2	5.3	5.4
Male	5.2	13.8	9.0	13.0	11.5

Age

The use of advanced services depends also heavily on age: younger citizens use them comparatively more frequently and intensive, older citizens only to a very limited extend. This applies to all advanced services.

This pattern basically applies to all countries. But in frontrunner countries like Iceland, the middle-aged citizens are starting to become users.

In countries, where there is data available for different points in time, the same age-specific patterns can be observed.

Percentage of the population who have different types of advanced services by age groups in Europe 2005

	Telephoning over the Internet/ video-conferencing	Listening to Web radios/ watching Web television	Make phone calls (ever)	Use peer-to-peer file sharing for exchanging movies, music etc (ever)	Create a web page (ever)
16-24	7.2	22.8	12.8	26.3	19.3
25-34	6.4	16.5	11.3	14.9	13.0
35-44	4.0	10.4	6.6	7.4	8.4
45-54	3.0	6.8	4.6	4.2	5.5
55-64	1.5	3.4	2.4	1.8	2.7
65-74	0.5	1.2	0.8	0.4	0.9

Education

Also education is a decisive factor when it comes to the use of advanced services. The rule is: the better educated a person the more likely s/he is to become a user. This applies to all services and to all countries.

The only exception relates to the use of peer-to-peer file sharing for exchanging movies, music etc. in some countries (Germany, Finland, Iceland). Here we can find quite the opposite, i.e. most users have a lower educational level. While in Germany 6% of the citizens with higher education practice peer-to-peer file sharing for exchanging movies and the like, the figure is almost double among those with lower education (10%). Similar results are achieved in Finland with 9% of those with high education as opposed to 16% with low education being active in peer-to-peer file sharing. The corresponding figures for Iceland are 15% with high and 22% with low education being users.

Also in Denmark the impact of education plays much less a role. Advanced service use is at rather high levels in all groups of education.

Percentage of the population who have different types of advanced services by level of education in Europe 2005

	Telephoning over the Internet/ video-conferencing	Listening to Web radios/ watching Web television	Make phone calls (ever)	Use peer-to-peer file sharing for exchanging movies, music etc (ever)	Create a web page (ever)
low	2.0	5.9	3.6	5.8	4.9
medium	4.1	10.2	6.9	10.2	8.3
high	7.2	19.8	11.5	12.5	15.4

Type of locality

The data analysis reveals the expected outcome: the more thinly a region is populated the less use of advanced services is made. This applies to all countries with little deviations.

Percentage of the population who have different types of advanced services by type of locality in Europe 2005

	Telephoning over the Internet/ video-conferencing	Listening to Web radios/ watching Web television	Make phone calls (ever)	Use peer-to-peer file sharing for exchanging movies, music etc (ever)	Create a web page (ever)
living in densely populated areas	4.7	13.0	7.8	10.8	9.5
living in intermediate areas	3.4	8.6	6.6	8.2	8.0
living in thinly populated areas	2.9	7.8	4.7	6.7	6.7

Use according to broadband internet access in the household

The use of advanced services also depends heavily on the bandwidth available within the respondents household: Broadband household dwellers are the much more intensive users than people relying on narrowband home access. This applies to all advanced services. The least striking differences can be found with regard to having ever created a web page. All other advanced services surveyed are heavily bandwidth demanding and hence much more often carried out by broadband users. The pattern can be observed in all countries analysed.

Percentage of the population who have different types of advanced services by home internet access type in Europe 2005

	Telephoning over the Internet/ video-conferencing	Listening to Web radios/ watching Web television	Make phone calls (ever)	Use peer-to-peer file sharing for exchanging movies, music etc (ever)	Create a web page (ever)
Base: all respondents					
Broadband internet access at home	10.3	26.1	15.1	21.8	18.2
Non-broadband internet access at home	3.1	8.6	6.6	8.6	9.5
Base: all respondents using the internet					
Broadband internet access at home	12.0	30.5	:	:	:
Non-broadband internet access at home	4.2	11.7	:	:	:

Use of Advanced Services by Enterprises

Overall every second organisation in Europe offers a website facility through which the own products are marketed. One in four companies offer access to products catalogues and price lists. All other advanced services inquired for, are only used by a small minority of organisations in Europe. Especially the provision of mobile internet services is hardly an issue for Europe's enterprises. Only organisations in Slovenia, Germany, Ireland and the Netherlands reach figures of 4% or 5%.

The new member state countries achieve markedly lower figures on the advanced services use "marketing own products", "delivering digital goods or services" and "providing after sales support".

Organisations in Sweden and Denmark are the most intensive users of advanced services, followed by Norway, Germany and Finland. Also the Netherlands and the Czech Republic show a rather good performance. Latvia, Portugal, Cyprus, Spain, Greece and Estonia show low values. The results show a lot of similarities to the use of ICT in organisations in general with those countries leading the field one would have expected to do so. The same applies to the late comers, although with some variation to the extent, frequency and intensity of ICT use in general.

Due to a lack of data, the developments over time can not be analysed.

Not surprisingly, the larger an organisation the more it makes use of advanced services.

With respect to a sector analysis of the results, very little insights can be gained. The hotel and restaurant industry as well as the media industry are the frontrunners in use among the sectors. The construction and transport sectors are lagging behind.

In only very few cases data is available differentiating between objective 1 and non-objective 1 regions. In most of those countries, where this is the case and where both region types exist, the use of advanced services is lower in objective 1 regions, which is in line with what could be expected.

Percentage of enterprises which have used advanced services of different types in Europe 2005

	Country	Website facility: marketing own products	Access to product catalogues	Customised page for repeat clients	Delivering digital goods or services	Providing after sales support	Providing mobile internet services
EU25	European Union (25 countries)	51.4	27.2	10.8	7.5	14.3	2.4
EU15	European Union (15 countries)	54.0	26.9	11.0	8.4	15.8	2.6
NMS10	New EU Member States (10 countries)	39.6	28.7	9.9	3.4	7.1	1.6
Eurozone	Euro-zone	52.8	26.4	10.7	8.2	15.5	2.6
BE	Belgium	60.5	22.7	11.9	6.2	9.6	2.7
CZ	Czech Republic	64.1	32.4	8.9	6.2	17.5	2.0
DK	Denmark	76.6	35.8	18.4	11.8	25.1	2.4
DE	Germany	63.8	28.5	11.5	9.9	31.2	4.2
EE	Estonia	46.2	25.6	7.0	5.3	7.3	2.1
GR	Greece	54.0	23.1	5.7	5.1	6.1	1.5
ES	Spain	37.6	23.0	8.1	2.8	4.3	0.9
FR	France	:	:	:	:	:	:
IE	Ireland	49.3	24.1	7.4	7.5	10.6	3.8
IT	Italy	51.4	22.5	12.7	12.0	6.4	1.6
CY	Cyprus	42.5	18.9	6.5	4.1	5.6	1.2
LV	Latvia	25.9	14.8	5.9	1.6	2.1	0.9
LT	Lithuania	32.2	22.5	17.9	3.4	1.9	2.8
LU	Luxembourg	32.8	22.5	11.4	6.6	9.6	2.2
HU	Hungary	u	u	u	u	u	u
MT	Malta	49.3	27.5	10.7	8.4	16.9	2.4
NL	Netherlands	48.7	50.7	9.8	5.5	11.0	3.6
AT	Austria	58.1	25.4	13.8	6.9	6.7	2.0
PL	Poland	44.1	28.9	10.2	1.9	3.2	0.8
PT	Portugal	30.9	14.2	8.2	5.1	6.6	2.1
SI	Slovenia	57.5	29.3	11.6	5.5	13.1	5.8
SK	Slovakia	25.8	29.3	22.7	3.8	9.1	1.7
FI	Finland	67.2	27.9	6.6	10.7	18.4	1.9
SE	Sweden	79.5	36.0	16.0	11.4	20.6	2.1
UK	United Kingdom	:	:	:	:	:	:
BG	Bulgaria	:	:	:	:	:	:
RO	Romania	:	:	:	:	:	:
IS	Iceland	:	:	:	:	:	:
NO	Norway	65.4	29.6	10.8	9.3	16.7	2.9

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals;

(:) Data not available; no data at all is available for Belgium, France, Malta, Bulgaria and Romania

*) use in the last 3 months for private purposes

Marketing the enterprise's products

54% of the companies in the old and 40% of those in the new member states offer a website facility for the marketing of own products. The range between the countries is huge, with Sweden achieving the highest figure of 80% and Hungary the lowest with only 11%. Among the new member states, the Czech Republic shows the highest figure (65%) followed by Slovenia (58%).

Percentage of the enterprises offering a website facility for the marketing of own products in Europe 2002 – 2005

	Country	2002	2003	2004	2005
EU25	European Union (25 countries)	:	:	51.4	:
EU15	European Union (15 countries)	43.6	:	54.0	43.6
NMS10	New EU Member States (10 countries)	:	:	39.6	:
Eurozone	Euro-zone	43.1	:	52.8	43.1
BE	Belgium	56.7	62.8	60.5	56.7
CZ	Czech Republic	54.8	:	64.1	54.8
DK	Denmark	72.7	75.1	76.6	72.7
DE	Germany	66.7	63.1	63.8	66.7
EE	Estonia	:	:	46.2	:
GR	Greece	48.4	45.8	54.0	48.4
ES	Spain	24.8	34.7	37.6	24.8
FR	France	11.8	:	:	11.8
IE	Ireland	47.4	46.8	49.3	47.4
IT	Italy	39.0	:	51.4	39.0
CY	Cyprus	:	42.3	42.5	:
LV	Latvia	:	30.4	25.9	:
LT	Lithuania	:	28.2	32.2	:
LU	Luxembourg	31.0	36.1	32.8	31.0
HU	Hungary	:	10.5	u	:
MT	Malta	:	:	49.3	:
NL	Netherlands	:	:	48.7	:
AT	Austria	59.3	58.0	58.1	59.3
PL	Poland	:	33.1	44.1	:
PT	Portugal	23.1	26.6	30.9	23.1
SI	Slovenia	:	:	57.5	:
SK	Slovakia	:	24.5	25.8	:
FI	Finland	62.8	66.1	67.2	62.8
SE	Sweden	:	:	79.5	:
UK	United Kingdom	:	:	:	:
BG	Bulgaria	:	21.4	:	:
RO	Romania	:	18.1	:	:
IS	Iceland	62.9	:	:	62.9
NO	Norway	61.0	58.3	65.4	61.0

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available

The Nordic countries are the frontrunners followed by Germany, Iceland, Belgium and Austria. Spain, Luxembourg and Portugal as well as the new member states Latvia, Lithuania and Slovakia are below average.

In those countries where time series data is available, it becomes apparent that there are hardly any changes over time. It appears as if the development has reached a first saturation point in many countries and at different levels. The latter may be a reflection of different industry structures in the countries. A further upward development will from now onwards probably take place at a lower pace than in previous years. However, one has to bear in mind that this thesis is based on a very limited set of data available for a period of several years (2002 to 2005) and this only for a few countries.

In order to validate the results on this indicator, the results from a similar survey question from the Booz Allen Hamilton Benchmarking Study "Business in the Information Age" from 2004 have been taken.

Here the respondents had to answer the question "Does your business use online technology as part of the process for any of the following activities?", one answer option being "marketing".

The figures from this survey for the countries covered are lower than those from the Eurostat survey in these countries. However, when considering that in the Eurostat survey the organisations with less than 10 employees were excluded it appears that these figures – more or less – confirm the reliability of the Eurostat results.

Percentage of enterprises using online technology for marketing according to company size in selected European countries in 2004

United Kingdom	Micro	50
	Small	53
	Medium	53
	Large	58
	TOTAL	56
France	Micro	19
	Small	26
	Medium	25
	Large	24
	TOTAL	24
Germany	Micro	38
	Small	46
	Medium	51
	Large	48
	TOTAL	41
Italy	Micro	30
	Small	38
	Medium	38
	Large	37
	TOTAL	38
Sweden	Micro	33
	Small	44
	Medium	60
	Large	59
	TOTAL	50
Ireland	Micro	45
	Small	47
	Medium	45
	Large	43
	TOTAL	45
Micro: less than 10 employees;		
Small: 10-49 employees;		
medium: 50-249 employees;		

large: 250 or more employees.

Source: Booz Allen Hamilton: Business in the Information Age: the International Benchmarking Study 2004.

Similar data is also available for other countries in the world including the US, Canada, Japan, Australia and South Korea. These come from the international benchmarking study by Booz Allen Hamilton on "Business in the Information Age" from 2004.

Percentage of enterprises using online technology for marketing according to company size in Japan, the USA, Canada, South Korea and Australia in 2004

South Korea	Micro	53
	Small	53
	Medium	49
	Large	49
	TOTAL	51
USA	Micro	41
	Small	45
	Medium	60
	Large	67
	TOTAL	57
Canada	Micro	42
	Small	43
	Medium	51
	Large	59
	TOTAL	52
Australia	Micro	45
	Small	49
	Medium	52
	Large	56
	TOTAL	50
Japan	Micro	31
	Small	28
	Medium	34
	Large	43
	TOTAL	37
Micro: less than 10 employees;		
Small: 10-49 employees;		
medium: 50-249 employees;		
large: 250 or more employees.		

Source: Booz Allen Hamilton: Business in the Information Age: the International Benchmarking Study 2004.

When comparing these figures (**Note:** a direct comparison of data results is not possible due to the different approaches and methodologies used and is only carried out here for illustration purposes) to those from the ICT Community survey it becomes apparent that countries like Canada (52%) and South Korea (51%) are around the European average (51%), Australia (50%) and especially Japan (37%) even below and only the USA (57%) above the average but still some distance away from the European frontrunners (e.g. Sweden: 80%, Denmark: 77% in 2005 and Denmark: 75% and Finland: 66% in 2004, the year of the Booz Allen Hamilton survey).

With these figures, most of Europe's overseas competitors are in the group of average performers.

Percentage of enterprises offering a website facility for the marketing of own products in Europe 2005 those using online technology for marketing in Japan, the USA, Canada, South Korea and Australia in 2004: country groupings

Frontrunners (>60%) = EU25 average)	Average performers (40% - 59%)	Laggards (<40%)
Sweden	Austria	Spain
Denmark	<i>USA **)</i>	<i>Japan **)</i>
Finland	Slovenia	Luxembourg
Norway	Greece	Slovakia
Czech Republic	<i>Canada **)</i>	Bulgaria *)
Germany	Italy	Romania *)
Iceland *)	<i>South Korea **)</i>	Hungary *)
Belgium	<i>Australia **)</i>	
	Malta	
	Ireland	
	Netherlands	
	Estonia	
	Poland	
	Cyprus	

*) = 2003 or 2004 values due to missing values for 2005; not sufficient data available for all countries not mentioned

**) = figures are not directly comparable to the rest of the data

Source: Eurostat 2005 Community Survey on ICT Usage and e-Commerce in Enterprises (Note: All sectors, without financial sector (10 employed persons or more)); Booz Allen Hamilton: Business in the Information Age: the International Benchmarking Study 2004.

Facilitating access to product catalogues and price lists

Around a quarter of European enterprises offer product catalogues and price lists on their websites. The lonely frontrunner in Europe are the Netherlands, where more than half of the companies have moved over to offering this service, followed – but with much lower values already - by the Nordic countries Iceland, Sweden and Denmark. The Czech Republic is the frontrunner among the new member states with around a third of companies facilitating access to product catalogues and price lists through an appropriate offer on their websites. The European late comers are Portugal and Latvia with around 14%. Most countries cluster very strongly around the European average.

Given the limited data availability, an analysis of the development over time is hardly possible. Where sufficient data is available one can observe rather little developments over time with the exception of the Netherlands and the Czech Republic where a strong positive development can be observed. Figures in these countries more than doubled from 2003 to 2005, from 15% to 32% in the Czech Republic and 23% to 51% in the Netherlands.

Percentage of the enterprises offering a website facility for facilitating access to product catalogues and price lists in Europe 2002 – 2005

	Country	2002	2003	2004	2005
EU25	European Union (25 countries)	:	:	:	27.2
EU15	European Union (15 countries)	:	22.7	:	26.9
NMS10	New EU Member States (10 countries)	:	:	:	28.7
Eurozone	Euro-zone	:	22.6	25.7	26.4
BE	Belgium	:	15.6	18.1	22.7
CZ	Czech Republic	:	15.4	:	32.4
DK	Denmark	:	25.2	25.8	35.8
DE	Germany	:	30.5	29.7	28.5
EE	Estonia	:	:	:	25.6
GR	Greece	:	17.8	20.0	23.1
ES	Spain	:	19.5	21.4	23.0
FR	France	:	17.4	:	:
IE	Ireland	:	22.9	26.6	24.1
IT	Italy	:	19.0	:	22.5
CY	Cyprus	:	:	22.7	18.9
LV	Latvia	:	:	14.7	14.8
LT	Lithuania	:	:	16.3	22.5
LU	Luxembourg	:	23.8	22.3	22.5
HU	Hungary	:	:	21.4	u
MT	Malta	:	:	:	27.5
NL	Netherlands	:	23.0	25.3	50.7
AT	Austria	:	26.8	27.9	25.4
PL	Poland	:	:	21.8	28.9
PT	Portugal	:	11.9	13.2	14.2
SI	Slovenia	:	:	:	29.3
SK	Slovakia	:	:	25.7	29.3
FI	Finland	:	26.1	28.4	27.9
SE	Sweden	:	:	:	36.0
UK	United Kingdom	:	:	:	:
BG	Bulgaria	:	:	14.1	:
RO	Romania	:	:	8.9	:
IS	Iceland	:	37.4	:	:
NO	Norway	:	19.5	20.0	29.6

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available

Customised page for repeat clients

Around 10% of European enterprises offer a customised web page for repeat clients. However, the data at country level provides problems in interpretation and analysis. It appears as if in several cases there may have been a wrong or different understanding of the question resulting in somewhat surprising results with Slovakia leading the field with 23%.

**Percentage of the enterprises offering a customised page for repeat clients on their website in Europe
2002 – 2005**

	Country	2002	2003	2004	2005
EU25	European Union (25 countries)	:	:	:	10.8
EU15	European Union (15 countries)	:	:	:	11.0
NMS10	New EU Member States (10 countries)	:	:	:	9.9
Eurozone	Euro-zone	:	:	10.3	10.7
BE	Belgium	:	10.2	9.3	11.9
CZ	Czech Republic	:	:	:	8.9
DK	Denmark	:	9.1	9.7	18.4
DE	Germany	:	:	12.4	11.5
EE	Estonia	:	:	:	7.0
GR	Greece	:	6.6	6.9	5.7
ES	Spain	:	5.9	7.3	8.1
FR	France	:	:	:	:
IE	Ireland	:	6.1	6.3	7.4
IT	Italy	:	:	:	12.7
CY	Cyprus	:	:	8.7	6.5
LV	Latvia	:	:	7.0	5.9
LT	Lithuania	:	:	14.3	17.9
LU	Luxembourg	:	10.5	11.3	11.4
HU	Hungary	:	:	6.2	u
MT	Malta	:	:	:	10.7
NL	Netherlands	:	7.7	11.3	9.8
AT	Austria	:	11.5	13.9	13.8
PL	Poland	:	:	5.6	10.2
PT	Portugal	:	5.4	5.3	8.2
SI	Slovenia	:	:	:	11.6
SK	Slovakia	:	:	14.9	22.7
FI	Finland	:	6.0	5.3	6.6
SE	Sweden	:	:	:	16.0
UK	United Kingdom	:	:	:	:
BG	Bulgaria	:	:	4.2	:
RO	Romania	:	:	0.0	:
IS	Iceland	:	12.5	:	:
NO	Norway	:	6.9	7.4	10.8

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available; (u) Date not reliable

A very large number of 20 countries show figures below or around the European average, and for four countries there is no or insufficient data available. This leaves us with six countries with figures above average with Denmark, Sweden, Austria and Italy from the old member states and Slovakia and Lithuania from the new member states.

Any further interpretation and analysis requires further investigation as to the not unlikely problems on the side of the respondents having misunderstood the question.

Delivering digital goods or services

Only less than 10% of European enterprises deliver digital goods or services of whatever type. The new member states but also several old member states reach even lower figures resulting in an average of only 3% of the enterprises being active in this field. Again, The frontrunners are the Nordic countries and surprisingly Italy. However, they also only reach figures of around 12%.

Percentage of the enterprises delivering digital goods or services on their website in Europe 2002 – 2005

	Country	2002	2003	2004	2005
EU25	European Union (25 countries)	:	:	:	7.5
EU15	European Union (15 countries)	:	4.6	:	8.4
NMS10	New EU Member States (10 countries)	:	:	:	3.4
Eurozone	Euro-zone	:	4.5	5.5	8.2
BE	Belgium	:	4.9	5.1	6.2
CZ	Czech Republic	:	17.4	:	6.2
DK	Denmark	:	7.1	7.8	11.8
DE	Germany	:	7.2	7.1	9.9
EE	Estonia	:	:	:	5.3
GR	Greece	:	3.6	3.3	5.1
ES	Spain	:	1.7	2.2	2.8
FR	France	:	:	:	:
IE	Ireland	:	5.0	5.6	7.5
IT	Italy	:	2.4	:	12.0
CY	Cyprus	:	:	5.0	4.1
LV	Latvia	:	:	1.9	1.6
LT	Lithuania	:	:	4.2	3.4
LU	Luxembourg	:	7.2	6.9	6.6
HU	Hungary	:	:	4.4	u
MT	Malta	:	:	:	8.4
NL	Netherlands	:	5.4	6.0	5.5
AT	Austria	:	5.8	8.5	6.9
PL	Poland	:	:	2.1	1.9
PT	Portugal	:	1.4	1.6	5.1
SI	Slovenia	:	:	:	5.5
SK	Slovakia	:	:	2.5	3.8
FI	Finland	:	8.6	8.6	10.7
SE	Sweden	:	:	:	11.4
UK	United Kingdom	:	:	:	:
BG	Bulgaria	:	:	1.5	:
RO	Romania	:	:	0.8	:
IS	Iceland	:	12.8	:	:
NO	Norway	:	5.3	6.3	9.3

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available; (u) Date not reliable

Providing after sales support

14% of European enterprises provide after sales support to their customers through their website. The range between the countries is huge with just 2% in Latvia and 3% in France to 31% in Germany. Germany by far leads the field followed by the Nordic countries, the Czech Republic (as the new member state frontrunner with 18%) and Malta.

Several new member states together with France and Spain make up the group of late comers.

Percentage of the enterprises providing after sales support on their website in Europe 2002 – 2005

	Country	2002	2003	2004	2005
EU25	European Union (25 countries)	:	:	:	14.3
EU15	European Union (15 countries)	:	14.5	:	15.8
NMS10	New EU Member States (10 countries)	:	:	:	7.1
Eurozone	Euro-zone	:	14.4	20.5	15.5
BE	Belgium	:	5.7	6.1	9.6
CZ	Czech Republic	:	8.1	:	17.5
DK	Denmark	:	19.1	19.0	25.1
DE	Germany	:	36.7	35.0	31.2
EE	Estonia	:	:	:	7.3
GR	Greece	:	6.8	6.9	6.1
ES	Spain	:	3.4	4.5	4.3
FR	France	:	2.5	:	:
IE	Ireland	:	9.4	9.7	10.6
IT	Italy	:	2.9	:	6.4
CY	Cyprus	:	:	8.7	5.6
LV	Latvia	:	:	1.7	2.1
LT	Lithuania	:	:	1.5	1.9
LU	Luxembourg	:	9.4	10.6	9.6
HU	Hungary	:	:	4.8	u
MT	Malta	:	:	:	16.9
NL	Netherlands	:	10.8	14.2	11.0
AT	Austria	:	6.9	6.5	6.7
PL	Poland	:	:	2.3	3.2
PT	Portugal	:	7.0	5.8	6.6
SI	Slovenia	:	:	:	13.1
SK	Slovakia	:	:	6.3	9.1
FI	Finland	:	14.7	15.8	18.4
SE	Sweden	:	:	:	20.6
UK	United Kingdom	:	:	:	:
BG	Bulgaria	:	:	1.8	:
RO	Romania	:	:	3.6	:
IS	Iceland	:	23.9	:	:
NO	Norway	:	13.7	12.8	16.7

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available; (u) Date not reliable

In order to validate the results on this indicator, the results from a similar survey question from the Booz Allen Hamilton Benchmarking Study “Business in the Information Age” from 2004 have been taken. Here the respondents had to answer the question “Does your business use online technology as part of the process for any of the following activities?” whereby an answer option was “after sales services”.

The figures from this survey for the countries covered differ quite substantially to those from the Eurostat survey in these countries. However, and due to the different methodologies and approaches used in both surveys, this does not come as a surprise.

Percentage of enterprises using online technology for after sales services according to company size in selected European countries in 2004

United Kingdom	Micro	38
	Small	37
	Medium	32
	Large	35
	TOTAL	35
France	Micro	14
	Small	19
	Medium	24
	Large	19
	TOTAL	19
Germany	Micro	36
	Small	49
	Medium	42
	Large	38
	TOTAL	41
Italy	Micro	33
	Small	43
	Medium	38
	Large	38
	TOTAL	37
Sweden	Micro	36
	Small	40
	Medium	49
	Large	52
	TOTAL	46
Ireland	Micro	38
	Small	31
	Medium	25
	Large	28
	TOTAL	30
Micro: less than 10 employees;		
Small: 10-49 employees;		
medium: 50-249 employees;		
large: 250 or more employees.		

Source: Booz Allen Hamilton: Business in the Information Age: the International Benchmarking Study 2004.

Similar data is also available for other countries in the world including the US, Canada, Japan, Australia and South Korea. These come from the international benchmarking study by Booz Allen Hamilton on "Business in the Information Age" from 2004.

Percentage of enterprises using online technology for after sales services according to company size in Japan, the USA, Canada and Australia in 2004

South Korea	Micro	24
	Small	36
	Medium	38
	Large	40
	TOTAL	34
USA	Micro	27
	Small	28
	Medium	37
	Large	41
	TOTAL	36
Canada	Micro	25
	Small	25
	Medium	34
	Large	46
	TOTAL	38
Australia	Micro	35
	Small	45
	Medium	38
	Large	38
	TOTAL	38
Japan	Micro	22
	Small	16
	Medium	16
	Large	36
	TOTAL	27
Micro: less than 10 employees;		
Small: 10-49 employees;		
medium: 50-249 employees;		
large: 250 or more employees.		

Source: Booz Allen Hamilton: Business in the Information Age: the International Benchmarking Study 2004.

When comparing these figures (**Note:** a direct comparison of data results is not possible due to the different approaches and methodologies used and is only carried out here for illustration purposes) to those from the ICT Community survey it becomes apparent that all these countries with the exception of Japan are above the best performing country on this indicator in Europe, which is Germany.

With these figures, all these overseas competitors are in the group of top performers.

Percentage of enterprises offering a website facility for after sales services in Europe 2005 and Japan, the USA, Canada, South Korea and Australia in 2004: country groupings

Frontrunners (>20%)	Average performers (10% -19%)	Laggards (<10%)
Australia **) Canada **) USA **) South Korea **) Germany Japan **) Denmark Sweden	Finland Czech Republic Malta Norway Slovenia Netherlands Ireland	Belgium Luxembourg Slovakia Estonia Austria Portugal Italy Greece Cyprus Spain Poland Latvia Lithuania

*) = 2003 or 2004 values due to missing values for 2005; not sufficient data available for all countries not mentioned

**) = figures are not directly comparable to the rest of the data

Source: Eurostat 2005 Community Survey on ICT Usage and e-Commerce in Enterprises (Note: All sectors, without financial sector (10 employed persons or more)); Booz Allen Hamilton: Business in the Information Age: the International Benchmarking Study 2004.

Providing mobile internet services

The provision of mobile internet services¹ by enterprises is still very much in its infancy in Europe and only practiced by 2% of European companies.

Slovenia and Germany but also Ireland and the Netherlands reach the highest figures between 4% and 5%.

¹ The questionnaire glossary explanation of this item, which has been available to the survey respondents, is: "Internet services available via a wireless terminal (Mobile phone, Personal Digital Assistant, PC device or custom terminal) and using Wireless Application Protocol (WAP) or General Packet Radio Service (GPRS). WAP is a protocol that makes it possible to adapt Internet formats to the characteristics of GSM handsets. GPRS is a packet-switched technology that makes it possible to send/receive blocks of data from/to a mobile phone."

Percentage of the enterprises providing mobile internet services in Europe 2002 – 2005

	Country	2002	2003	2004	2005
EU25	European Union (25 countries)	:	:	:	2.4
EU15	European Union (15 countries)	:	:	:	2.6
NMS10	New EU Member States (10 countries)	:	:	:	1.6
Eurozone	Euro-zone	:	:	2.6	2.6
BE	Belgium	:	1.6	1.8	2.7
CZ	Czech Republic	:	2.4	:	2.0
DK	Denmark	:	:	:	2.4
DE	Germany	:	:	3.7	4.2
EE	Estonia	:	:	:	2.1
GR	Greece	:	2.1	1.6	1.5
ES	Spain	:	0.7	0.9	0.9
FR	France	:	:	:	:
IE	Ireland	:	2.9	2.7	3.8
IT	Italy	:	1.4	:	1.6
CY	Cyprus	:	:	2.6	1.2
LV	Latvia	:	:	0.7	0.9
LT	Lithuania	:	:	2.5	2.8
LU	Luxembourg	:	1.3	1.5	2.2
HU	Hungary	:	:	2.0	u
MT	Malta	:	:	:	2.4
NL	Netherlands	:	1.6	2.4	3.6
AT	Austria	:	1.7	3.0	2.0
PL	Poland	:	:	0.7	0.8
PT	Portugal	:	1.5	1.9	2.1
SI	Slovenia	:	:	:	5.8
SK	Slovakia	:	:	1.1	1.7
FI	Finland	:	2.7	2.1	1.9
SE	Sweden	:	:	:	2.1
UK	United Kingdom	:	:	:	:
BG	Bulgaria	:	:	1.1	:
RO	Romania	:	:	0.9	:
IS	Iceland	:	1.1	:	:
NO	Norway	:	:	12.5	2.9

Source: Eurostat 2005 Community Survey on ICT Usage in Households and by Individuals

(:) Data not available; (u) Date not reliable

Use of advanced services according to company size

Not surprisingly, small enterprises are the least frequent and intensive users of advanced services in Europe followed by the medium-sized ones and the large companies as the by far most intensive users. The situation is the same in other countries outside Europe for which alternative data sources were used (cf. elsewhere in this report). A comparative overview of the situation with respect to all advanced services included in the enterprise survey is presented in the following figure.

The figure also reveals the huge differences across the European countries and especially those between the old and the new member states with the latter lagging seriously behind the former except for the advance service “web site facility for marketing the enterprise’s products”.

Also, the more advanced the services, the bigger the gap between old and new member states. This especially applies to the use in large organisations. For most of the advanced services, the figures in the large organisations in the old member states are between three and five times higher than those in the new member states.

Percentage of the enterprises offering advanced services according to company size in Europe 2003 – 2005

	10 - 49 employees (small enterprises)	50 - 249 employees (medium enterprises)	250 or more employees (large enterprises)	Range of figures (small – large enterprises)	Frontrunners (Range: small – large enterprises)	Laggards (Range: small – large enterprises)
Marketing the enterprise's products	48%	68%	79%	EU15: 50% - 83% NMS10: 35% - 65%	DK: 74% - 92% SE: 78% - 92%	SK: 25% - 25%
Facilitating access to product catalogues and price lists	24%	39%	49%	EU15: 24% - 49% NMS10: 25% - 48%	NL: 48% - 77% DK: 33% - 62%	LV: 13% - 29%
Customised page for repeat clients	9%	16%	27%	EU15: 9% - 31% NMS10: 9% - 14%	DE: 9% - 38%	LV: 5% - 9% EL: 5% - 9%
Delivering digital goods and services	7%	10%	22%	EU15: 7% - 26% NMS10: 3% - 5%	IT: 10% - 39% DE: 8% - 33%	LV: 1% - 3% PL: 2% - 4% SK: 4% - 4%
Providing after sales support	13%	20%	29%	EU15: 14% - 34% NMS10: 7% - 10%	DK: 23% - 48% DE: 29% - 47%	LT: 2% - 2% LV: 2% - 3%
Providing mobile internet services	2%	4%	9%	EU15: 2% - 14% NMS10: 1% - 3%	DE: 3% - 14%	LV: 1% - 2% CY: 1% - 2%

4 Summary and Conclusions

The present analysis of the data from the Eurostat 2005 Community Surveys on ICT Usage and e-Commerce in Enterprises and on ICT usage in households and by individuals concerning the topic "Take-up of advanced services" enhanced by data from the other surveys and supplemented by those from surveys conducted in the USA, Japan, Canada; South Korea and Australia on this subject in previous years provides some interesting insights into EU member state performances and (due to insufficient data availability only to a very limited extent) into the dynamics of change across the countries in this area.

4.1 Take-up of advanced services in households and by individuals

One can observe a situation where in Europe advanced services have started to be used by citizens to varying degrees but still with usage rates of less than 10% of the population in 2005. Web radio and web TV (EU25 average: 10%) are the most popular and making phone calls and videoconferencing (EU25 average: 4% (in the last 3 months), 7% (ever used)) the least popular service.

On average there are very little differences between the groups of old and the new member states. However, the variation between individual member states is huge as can be seen from the figure below. The Nordic countries, Estonia and Luxembourg are the European frontrunners. Especially Greece and Ireland are lagging behind, followed by Austria and Italia from the old and Cyprus and Slovakia from the new member states.

Percentage of the population who use different types of advanced services: maximum and minimum performers and EU25 average in Europe 2005

	Telephoning over the Internet/ video-conferencing	Listening to Web radios/ watching Web television	Make phone calls (ever)	Use peer-to-peer file sharing for exchanging movies, music etc (ever)	Create a web page (ever)
Maximum use	14% in Iceland	31% in Iceland	26% in Estonia	22% in Estonia	27% in Iceland
Minimum use	1% in Greece	3% in Czech Republic	2% in Ireland	2% in Ireland	2% in Greece
EU25 average	4%	10%	7%	9%	8%

Men are two times more likely to use advanced services, than women. Age matters. The most important determinant is age: the younger a person, the more likely s/he is to use an advanced service. Comparing the age group of 16-24 years to the one of 65-74 years it becomes apparent that the former is using advanced services between 14 times (telephone calls and videoconferencing in the last 3 months) to 66 times (peer-to-peer file-sharing) more often than the latter. Even when comparing those below 24 years to the generation between 55-64 years the figures are between 5 times and 15 times higher.

Also education matters. The better qualified and educated citizens are between two (peer-to-peer file-sharing) and four times (telephone calls and videoconferencing in the last 3 months) more likely to use advanced services.

Finally, use on average in urban areas is twice as high compared to the one in rural areas.

The typical user of advanced services is

- a man
- young

- well educated and
- more likely to live in urban areas.

Only with respect to peer-to-peer file-sharing we find deviations in terms of level of education in some countries where this type of advanced service is more heavily used by lower level educated individuals. Since there is no data available as to the different types of use, one can only guess about the reasons for this situation concerning peer-to-peer file-sharing.

Also in the frontrunner countries a process of levelling out has started with the mid-aged population also starting to become more intensive users of advanced services.

4.2 Take-up of advanced services in enterprises

Overall every second organisation in Europe offers a website facility through which the own products are marketed. One in four companies offer access to products catalogues and price lists. All other advanced services inquired for, are only used by a small minority of organisations in Europe. Especially the provision of mobile internet services is hardly an issue for Europe's enterprises. Only organisations in Slovenia, Germany, Ireland and the Netherlands reach figures of 4% or 5%.

Percentage of the enterprises which use different types of advanced services: maximum and minimum performers and EU25 average in Europe 2005

	Website facility: marketing own products	Access to product catalogues	Customised page for repeat clients	Delivering digital goods or services	Providing after sales support	Providing mobile internet services
Maximum use	80% in Sweden	51% in the Netherlands	(23% in Slovakia) 18% in Denmark	12% in Italy and Denmark	25% in Denmark	(6% in Slovenia) 4% in Germany
Minimum use	26% in Latvia	14% in Portugal	6% in Greece and Latvia	2% in Poland	2% in Latvia and Lithuania	1% in Poland, Latvia and Spain
EU25 average	51%	27%	11%	8%	14%	2%
NMS10 average	40%	29%	10%	3%	7%	2%

The new member state countries achieve markedly lower figures on most of the uses of advanced services ("marketing own products", "delivering digital goods or services" and "providing after sales support").

Organisations in Sweden and Denmark are the most intensive users of advanced services, followed by Norway, Germany and Finland. Also the Netherlands and the Czech Republic show a rather good performance. Latvia, Portugal, Cyprus, Spain, Greece and Estonia show low values. These results show a lot of similarities to the use of ICT in organisations in general with those countries leading the field one would have expected to do so. The same applies to the late comers, although with some variation to the extent, frequency and intensity of ICT use in general.

Where comparable data is available for Europe's overseas competitors it becomes apparent that the USA, Canada, South Korea and Australia show a performance which can be compared to the European average one on using one's own website for marketing products. Japan even belongs to the group of laggards.

However, when it comes to after sales support, these countries show a very good performance and find themselves in the group of European frontrunners mostly with figure even above the best performers in Europe (between 27% in Japan and 38% in Canada and Australia compared to 31% in Germany, 25% in Denmark and 21% in Sweden).

Not surprisingly, the larger an organisation the more it makes use of advanced services.

With respect to a sector analysis of the results, very little insights can be gained. The hotel and restaurant industry as well as the media industry are the frontrunners in use among the sectors. The construction and transport sectors are lagging behind.

In only very few cases data is available differentiating between objective 1 and non-objective 1 regions. In most of those countries, where this is the case and where both region types exist, the use of advanced services is lower in objective 1 regions, which is in line with what could be expected.

5 Future Developments and Recommendations for Survey and Questionnaire Design

With a short-term view, the present chapter will make suggestions for improving / expanding the Eurostat questionnaire. It continues with the specification of further needs relating to indicator development for monitoring and benchmarking the take-up of advanced services at international and comparative level.

The present chapter will elaborate on ways for improving the questionnaire parts on “Use of Internet” in the Community Survey on ICT usage and e-Commerce in enterprises questionnaire and parts C7 “purpose and nature of activities on the internet” and E on “e-Skills”, especially E3 “internet-related activities carried out”. It will also consider the questionnaire modifications and extensions proposed in the area of “adoption of ICT by businesses” as defined under theme no. 2 in the “Benchmarking i2010 proposals” document from the European Commission.

5.1 Piloting and consideration of indicators for newly emerging policy topics

Status-quo: It is typical for the policy landscape, that new policy topics emerge regularly, which were not foreseen several years ago. Also, and with respect to advanced services, a whole series of new services has emerged since the start of the Eurostat Community surveys on ICT usage and will continue to do so in the future. Consideration of these would require a (regular) further expansion of the set of indicators to properly address such newly emerging developments.

From experiences in the past years we know that such developments occur regularly and require further developments and changes to the indicator set and related questions in the questionnaire at quite regular time intervals. This poses a problem to Eurostat and the national statistical institutes since they require the questionnaire for a survey to be fixed at least 1.5 years prior to the survey field work. As a consequence, ad hoc questions can not (always) be included and no data obtained on what could become very relevant issues for policy development. It is against this background that the Commission has decided to develop additional enterprise survey modules for specific topics which differ from year to year. For the 2007 survey an “e-Skills”, and for 2008 an “e-Business” questionnaire module are planned.

Recommendation: We suggest that newly emerging issues are firstly specified together with clear policy objectives and targets to be achieved, then operationalised into indicators and afterwards translated into

- modifications and expansions of existing survey questions,
- new survey questions,
- and if need be, additional questionnaire modules.

These can then be incorporated into the existing survey questionnaire.

In cases where an agreement and approval of the incorporation of such modifications or expansions of the survey questionnaires is not granted by Eurostat and the national statistical institutes, it is suggested to experiment with these new questions and questionnaire modules and pilot them in an ad hoc fashion (at a smaller scale and covered by European Commission service contracts or a framework contract with appropriate service providers) to obtain the necessary data and information required by policy decision makers for the development of policy action in a timely manner.

Only if agreement is achieved after the piloting phase and the results from ad-hoc surveys providing the necessary data that (some of) the new indicators are likely to remain relevant in the next 3-5 years, thought should be given to whether to incorporate these into the core set of questions or whether to continue to deal with these only through ad-hoc surveys for the (short) time they are relevant for policy making.

5.2 Further development of and improvements to the Community survey questionnaires

In the present chapter we will:

- elaborate on possibilities for improvement of critical questions on take-up of advanced services;
- discuss different options for questionnaire development relating to the new i2010 benchmarking indicators proposed by the Commission; and
- provide ideas for further topics, indicators and questions to best cover the topic of “take-up of advanced services”.
- A differentiation according to type of survey, household survey and enterprise survey, will be carried out in the present chapter
-

Community Survey on ICT Usage in Household and by Individuals

Further development of existing questions

More differentiated questions and differentiation between ‘regular use’ and ‘ever used’

Status-quo: In the present questionnaire the formulation of questions relating to different advanced services and activities for which the internet was used and which have a relationship to advanced services, could probably be improved since sometimes different internet-related activities (and therefore different types of advanced services) are collapsed in one questions. In other cases (e.g. using peer-to-peer file-sharing) answer options are rather diffuse making it rather difficult for the respondent to easily understand them and respond properly. Also, the respondent is asked rather similar questions twice (although for different purposes) which may result in some confusion. This applies to questions in module C7 (Purpose and nature of activities on the Internet: for which of the following activities did you use the Internet in the last 3 months for private purposes?) and E3 (E-Skills: which of the following internet related activities have you already carried out?). Here a clear distinction between service use related and e-Skills related issues is missing or does not become clear to the respondent.

Recommendation: It is recommended to separate and differentiate some answer options where different options got collapsed and to modify some other answer options.

It is also recommended to develop a complete list of “activities on the internet” combining answer options from module C7 and E3 of the 2005 survey and enhance this list by further relevant options as already done in the 2007 Community survey questionnaire on ICT usage of households and citizens.

It is further recommended to ask for the general use (ever used) of the advanced services and their use in the last three months in one question. This will allow to differentiate - for each service – the more frequent and regular users from those how happened to have used it only once or twice or who are infrequent users only. Alternatively one could also define “regular use” as “used at least weekly” and ask the question accordingly.

Finally, a clear distinction between service use related and e-Skills related issues is recommended to avoid confusion on the side of the respondent. It seems recommendable to modify the e-Skills questionnaire module in a way (as described elsewhere) also asking for the “confidence in use” and not the actual use.

More differentiated typology of users

Status-quo: People use the internet in general and advanced services in particular in different ways. These differences may have an impact on whether online public services on the one hand and advanced services (the topic of the present report) on the other are used but also the experiences of usage of such services by those who do not use them or try to use them. It can be expected and is already revealed by the analysis of the results from the 2005 household survey that specific types of users with very specific characteristics use different types of advanced services more intensively (cf. above).

Relevant dimensions along which users may vary include experience (length of time since starting to use the internet), intensity (amount / frequency of usage), online orientation (the types of things that users tend to do online) and skills (both technical skills and skills in doing things online may be relevant).

In the present Eurostat Community surveys on ICT usage such analysis opportunities do not exist although much of the necessary data is gathered. However, no such breakdowns along the above dimensions and no micro data are provided which constitute a prerequisite for such calculations.

Recommendation: It is recommended to provide the data in a format (ideally at micro data level) which would allow for a differentiation of the different activities and internet uses in general and those relating to advanced services in particular to identify specific types of users and also classify them in for instance more functional type users as opposed to more leisure type users as has been done in the eUser project².

This would help to gain further insights and a better understanding of and knowledge about user behaviours and types on which to base more focussed and well targeted policy decisions.

Include newly emerging advanced services

Status-quo: The present questionnaire includes questions referring to advanced services which are already available for several years. In the meantime several new advanced services have emerged and started to become available but are not at all widely used yet. Nevertheless it appears worthwhile to start including these in the near future to define a starting point and baseline for future surveys in this area.

Recommendation: It is recommended to carefully investigate which type of new advanced services should find their way into the questionnaire. From a current point of view these may include Podcasting and Weblogs (blogging) services.

Podcasting as a term was coined in 2004 and combines two words: "iPod" and "broadcasting." It is the method of distributing multimedia files, such as audio programs or music videos, over the Internet using either the RSS or Atom syndication formats, for playback on mobile devices and personal computers. Podcasting is an automatic mechanism by which multimedia computer files are transferred from a server to a client, which pulls down XML files containing the Internet addresses of the media files. In general, these files contain audio or video, but also could be images, text, PDF, or any file type. The term podcast, like 'radio', can mean both the content and the method of delivery. The concept of podcasting was suggested as early as 2000 and the technical components were available by the start of 2001, but it wasn't until 2003 that regular podcasts started showing up on well-known Web sites. The concept quickly took off and by the end of 2004, thousands of podcasts were available and the term had entered the public domain.

² Examples of functional type uses: being able to keep in touch with people through e-mail; being able to look for information about things that are deemed important or interesting / Use for leisure pursuits: playing online games or downloading music; being able to pay bills of doing online banking; being able

to buy goods, books, tickets and so on online.

Weblog / Blog: A weblog, which is usually shortened to blog, is a type of website where entries are made (such as in a journal or diary), displayed in a reverse chronological order. Blogs often provide commentary or news on a particular subject, such as food, politics, or local news; some function as more personal online diaries. A typical blog combines text, images, and links to other blogs, web pages, and other media related to its topic. Most blogs are primarily textual although many focus on photographs, videos or audio. The first broadly popular American blogs emerged in 2001. In 2004, the role of blogs became increasingly mainstream, as political consultants, news services and candidates began using them as tools for outreach and opinion forming.

One could include further ones from the following list of selected related terms referring to further emerging advanced services:

- Autocasting (the automatic generation of podcasts from text-only sources)
- Blogcasting (the blogging Podcast)
- Mediacasting (any distribution of audio/video media files utilizing RSS)
- MMS Podcast (podcasting to mobile phones using MMS)
- Mobilecast (podcasting to mobile phones)
- MP3 blog (podcasting single song downloads)
- Narrowcasting (podcasting is a form of narrowcasting)
- Peercasting (peercasting allows live streams to be redistributed by the viewers/listener, greatly reducing bandwidth needs for the originating broadcaster)
- Podstreaming (podstreaming is the process of converting streaming audio to a podcast)
- Photofeed (image podcasting)
- Soundseeing tour (podcast utilizing ambient noise and descriptions)
- Vodcasting (video podcasting)
- VoiceCast (podcast delivery through a telephone call)
- Phonecasting (creating podcasts using a phone).

One may also like to consider the selection of items from other surveys in this area such as the PEW Internet survey which is regularly carried out in the US by Princeton Survey Research Associates International for the Pew Internet & American Life Project. Some of the items (marked in italics) from the PEW survey question could be seen as useful add-ons to the Community ICT survey on ICT usage by households and individuals.

WEB1 Please tell me if you ever use the internet to do any of the following things. Do you ever use the internet to.../ Did you happen to do this **yesterday**, or not?

1. Send "instant messages" to someone who's online at the same time
2. Take part in chat rooms or online discussions with other people
3. Participate in an online auction
4. Search online for information about someone you know or might meet
5. Create a web log or "blog" that others can read on the web
6. Read someone else's web log or blog
7. Look for "how-to", "do-it-yourself" or repair information online
8. Use online classified ads or sites like Craig's list to sell or buy items, find a job, or meet other people online
9. Participate in a fantasy sports league online
10. View live images online of a remote location or a person, using a webcam
11. Use online social or professional networking sites like Friendster or LinkedIn

Source: PEW: February 2005 Daily Tracking Survey – Questionnaire

Other interesting approaches have been used by the KPMG 2006 Consumer and Convergence survey and report covering the European Union, countries in Asia and North America. In this survey the usage of services was asked for using the following advance services:

- play networked games,
- play single player games,
- instant messaging or chatting,
- use e-coupons/m-coupons,
- access location based services,
- take or share pictures,
- listen to music,
- download song/albums,
- watch movies programmes,
- watch short clip,
- surf the internet,
- access and send e-mails.

These were asked for by way of differentiating according to location (at home, at work, while commuting, during leisure) and by preferred device (PC, cellular, iPos/mp3).
<http://www.kpmg.com.au/Default.aspx?TabID=204&KPMGArticleItemID=1785>

An investigation of another larger number of recent surveys throughout the world on the subject of “advanced services” revealed no further interesting approaches from which one could derive more relevant information supporting the further development of the existing Community household survey.

An overview of the surveys, the advanced services asked for and the type of questions asked is provided in the following table.

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2006	US	mobile services	Is this something you would like to do or not: a) take still pictures, b) play music or MP3 files, c) record video clips, d) play games, e) use the internet? (Q6)	Contains the Results of the survey: Use the mobile phone to take pictures (Q6) Use the mobile phone to receive e mails, Q10, P.3 Use the mobile phone to receive instant messages, Q10, P.3 Use the internet with the mobile, Q40a, P.4	AP / AOL / PEW Research Center Survey of Cellular Phone Users	http://www.pewinternet.org/pdfs/Cell_questions_release.pdf
2004	Canada	VoIP	During a typical week, about how many hours, if any, do you spend on the following activities on the Internet? VoIP	Using VoIP and effect of usage on us traditional telephone P. 92/93	Canada Online	http://www.worldinternetproject.net/publishedarchive/Canada%20Online%20Final%20English%20Version%2010302005.pdf
2004	Canada	Web Radio	cf. above ... web radio	Listening to the radio on the internet P. 100 Time listened to web radio P. S.99	Canada Online	http://www.worldinternetproject.net/publishedarchive/Canada%20Online%20Final%20English%20Version%2010302005.pdf
2004	Canada	Web TV	cf. above ... web TV	Watching TV on the internet, P. 101 Time spend watching web TV P. 99	Canada Online	http://www.worldinternetproject.net/publishedarchive/Canada%20Online%20Final%20English%20Version%2010302005.pdf
2004	Japan	mobile internet	Ratio of "voice communications" to "access to the Internet" for users having mobile terminals (cellular telephones and PHS having access to the Internet)	Internet users accessing the Internet from cellular telephones, PHS and portable information terminal S. 5	Communications Usage Trend	http://www.johotsusintokai.soumu.go.jp/tsusin_riyou/data/eng_tsusin_riyou02_2005.pdf

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2004	Japan	Questionnaire	Creating websites, Weblogs ("blogs"), Bulletin boards and chat rooms	MIC Japan 2004a Communications Usage Trend	Communications Usage Trend	http://www.johotsusintok.ei.soumu.go.jp/tsusin_riyou/data/eng_tsusin_riyou01_2005.pdf
2004	Japan	Paid services	What form(s) of content have you purchased?: software, music, video, games	MIC Japan 2004a Communications Usage Trend	Communications Usage Trend	http://www.johotsusintok.ei.soumu.go.jp/tsusin_riyou/data/eng_tsusin_riyou01_2005.pdf
2004 u. 2003	Japan	VoIP	Ratio of household IP telephony users and effects on traditional telephone use, MIC Communications Usage Trend Survey in 2004 P. 7	MIC Japan 2004a Communications Usage Trend	Communications Usage Trend	http://www.johotsusintok.ei.soumu.go.jp/tsusin_riyou/data/eng_tsusin_riyou02_2005.pdf
2004	OECD	3 G mobile services	Korea (July, 2003): 1 million subscribers for the 3G service called June(SK Telecom), which provides multimedia services such as VOD and MOD. Japan (October, 2003): 1 million subscribers for the 3G service called FOMA (NTT DoCoMo).	Demand for 3 G mobile services in Japan and Korea, P. 23 Services available in OECD countries, P. 28	Development of third-generation mobile services in the oecd	http://www.oecd.org/dataoecd/24/27/33721114.pdf#search=%22Development%20of%20third-generation%20mobile%20services%20in%20the%20oecd%22
2005	D, SP, UK, SE, F	Questionnaire	Using P2P networks to download videos	Using P2P networks to download videos, P. 46	Digital Video Usage and DRM	http://www.indicare.org/survey
2005	USA	Questionnaire		Contains the Results of the survey:	February 2005 Daily Tracking Survey	
2002	Finland	chatting, games	Use of the internet to participate in online chatroom discussions. / Playing games on PC. / Using the internet for playing online games.	Use of chats, P. 39, graph, P. 33; (age 15 to 34)	Finnish people's communication capabilities in interactive society of the 2000s	not available online

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2002	Finland	create webpage	Use the internet for creating own web pages.	creating own web page, P. 39, graph, P. 33; (age 15 to 34)	Finnish people's communication capabilities in interactive society of the 2000s	not available online
2006	USA	Podcast	Have downloaded or listened to Podcast	Impact of Ipod on radio listening Kind of music listened to Ever downloaded a podcast Based on non representative survey of 25000 persons.	jacobs media tech survey	http://www.jacobsmedia.com/042406-techipod.htm
2006, 2005	USA	Web Radio	Listening to web radio and local radio streams	Who is listening to web radio? What are the impacts of listening to web radio? Based on non representative survey of 25000 persons.	jacobs media tech survey II	http://www.jacobsmedia.com/061406-tech-streaming.htm
2006	EU, Asia, North America	mobile internet	Usage of services/activity: play networkd games, play single player games, instant messaging or chatting, use e-coupons/m-coupons, access location based services, take or share pictures, listen to music, download song/albums, watch movies programmes, watch short clip, surf the internet, access and send e-mails differentiated according to location (at home, at work, while commuting, during leisure) and by preferred device (PC, cellular, iPos/mp3).	Attributes and preferences of the users, in most cases NOT by country only by region (EU, Asia, North America)	KPMG 2006 Consumer and Convergence report.	http://www.kpmg.com.au/Default.aspx?TabID=204&KPMGArticleItemID=1785

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2006	Australia	mobile internet	see above	Attributes of the users of mobile services Based on 200 Interviews	KPMG 2006 Consumer and Convergence report. Top line Findings Australia	http://www.kpmg.com.au/Default.aspx?TabID=214&KPMGArticleItemID=1788
2006	Japan	3 G mobile services	Subscribers to 3rd generation mobile phones (e.g. UMTS)	Number of subscribers to services for third-generation mobile phones	Main Data on Information and Communications in Japan	http://www.soumu.go.jp/joho_tsusin/eng/main_data.html
2005	Japan	mobile internet		Number of subscribers to Internet services through mobile phone	Main Data on Information and Communications in Japan	http://www.soumu.go.jp/joho_tsusin/eng/main_data.html
2005	Nordic Countries (FI, SE, NO, DK, IS)	download music/images/games	Playing or downloading games, images or music	Playing or downloading games, images or music, by country, P. 44 surveyed with Eurostat model for a Community survey on ICT usage in households and by individuals	Nordic Information Society Statistics 2005	http://www.stat.fi/tup/julkaisut/isbn_92-893-1200-9_en.pdf
2005	Nordic Countries (FI, SE, NO, DK, IS)	Web radio	Listening to web radios / watching web television	Listening to web radios / watching web television, by country, P. 44 surveyed with Eurostat model for a Community survey on ICT usage in households and by individuals	Nordic Information Society Statistics 2005	http://www.stat.fi/tup/julkaisut/isbn_92-893-1200-9_en.pdf
2004	Finland	Video Conferencing	Share of internet users using Video Conferencing	Share of internet users using Video Conferencing, P. 45 surveyed with Eurostat model for a Community survey on ICT usage in households and by individuals	Nordic Information Society Statistics 2006	http://www.stat.fi/tup/julkaisut/isbn_92-893-1200-9_en.pdf

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2004	Finland	VoIP	internet users using VoIP	Share of internet users using VoIP, P. 45 surveyed with Eurostat model for a Community survey on ICT usage in households and by individuals	Nordic Information Society Statistics 2006	http://www.stat.fi/tup/julkaisut/isbn_92-893-1200-9_en.pdf
2004	Finland	Web radio	internet users using Web Radio	Share of internet users using Web Radio, P. 45 surveyed with Eurostat model for a Community survey on ICT usage in households and by individuals	Nordic Information Society Statistics 2006	http://www.stat.fi/tup/julkaisut/isbn_92-893-1200-9_en.pdf
2004	Finland	Web TV	internet users using Web TV	Share of internet users using Web TV, P. 45 surveyed with Eurostat model for a Community survey on ICT usage in households and by individuals	Nordic Information Society Statistics 2006	http://www.stat.fi/tup/julkaisut/isbn_92-893-1200-9_en.pdf
2005	UK	Questionnaire	Ever tried to set up a web page, frequency of VoIP use, use of forum, blog, own website, publish photos, music download, video download	Ever tried to set up a web page, Qc 6, P. 12 Frequency of VoIP use, Qc 12, P. 13 Use of forum, blog, own website, publish photos, Qc 23, P.17 Music download, video download P. 18	Oxford Internet Survey 2005 Questionnaire	http://www.oii.ox.ac.uk/research/oxis/oxis2005_questionnaire.pdf
2005	World	p2p	Frequency of VoIP use, Qc 12, P. 13	Software used for P2P networks, Slide 8 Share of P2P traffic at total Internet traffic, Slide 7 Share of the different video and audio formats at the total P2P traffic, Slide 18 and 19	P2P in 2005	http://www.cachelogic.com/home/pages/studies/2005_01.php

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2004	USA	Questionnaire	Use of forum, blog, own website, publish photos, Qc 23, P.17	Contains the Results of the survey:	Pew Internet 2004 Nov - Dec 2004 tracking Questionnaire	http://www.pewinternet.org/dataset_download.asp?i=46&d=Nov-Dec.2004.tracking.questionnaire.zip
2006	USA	mobile internet	Music download, video download P. 18	Use of mobile services by age (P. 6), by gender (P.9) by race (P.10) by 10/2006 all data will be available.	Pew Internet 2006 Cell phone study	http://www.pewinternet.org/pdfs/PIP_Cell_phone_study.pdf#search=%22Pew%20Internet%202006%20Cell%20phone%20study%22
2005	USA	blog	blog	Create or work on your own online journal or weblog, Variable: K31a	Pew Internet Dec 2005 tracking	http://www.pewinternet.org/dataset_download.asp?i=55&d=Dec2005.ORI.zip
2005	USA	create webpage	create webpage	Create or work on webpages or blogs for others, variable: K31c	Pew Internet Dec 2005 tracking	http://www.pewinternet.org/dataset_download.asp?i=55&d=Dec2005.ORI.zip
2005	USA	create webpage	create webpage	Create or work on your own webpage, variable: K31 b	Pew Internet Dec 2005 tracking	http://www.pewinternet.org/dataset_download.asp?i=55&d=Dec2005.ORI.zip
2005	USA	paid contents	paid contents	Have you ever paid to get news content from a website, Variable. Q22	Pew Internet Dec 2005 tracking	http://www.pewinternet.org/dataset_download.asp?i=55&d=Dec2005.ORI.zip
2005	USA	VoIP	VoIP	Ever used VoIP and the effect on usage of landline, Variables: VOIP1, VOIP2, VOIP3	Pew Internet Dec 2005 tracking	http://www.pewinternet.org/dataset_download.asp?i=55&d=Dec2005.ORI.zip

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2005	USA	networking	networking	Use online social or professional networking sites like Friendster or LinkedIn, Variable: aactiv87	Pew Internet Feb-Mar 2005 major moments	http://www.pewinternet.org/dataset_download.asp?i=51&d=Feb-Mar%202005%20major%20moments.zip
2005	USA	Podcast	Podcast	Ever used podcast? Variable: IPOD 2	Pew Internet Feb-Mar 2005 major moments	http://www.pewinternet.org/dataset_download.asp?i=51&d=Feb-Mar%202005%20major%20moments.zip
2004	USA	download music	download music	Download MUSIC files onto your computer so you can play them, variable : activ35	Pew Internet Nov Dec 2004 tracking	http://www.pewinternet.org/dataset_download.asp?i=46&d=Nov-Dec.2004.tracking.SPSS.zip
2004	USA	download video	Download VIDEO files onto your computer so you can play them at any time you want	Download VIDEO files onto your computer so you can play them at any time you want, variable: active62	Pew Internet Nov Dec 2004 tracking	http://www.pewinternet.org/dataset_download.asp?i=46&d=Nov-Dec.2004.tracking.SPSS.zip
2004	USA	p2p	Share files from your own computer, microdata	Share files from your own computer, microdata, variable: activ43	Pew Internet Nov Dec 2004 tracking	http://www.pewinternet.org/dataset_download.asp?i=46&d=Nov-Dec.2004.tracking.SPSS.zip
2004	USA	VoIP	Ever used VoIP and the effect on usage of landline	Ever used VoIP and the effect on usage of landline, Variables: VOIP1, VOIP2, VOIP3	Pew Internet Nov Dec 2004 tracking	http://www.pewinternet.org/dataset_download.asp?i=46&d=Nov-Dec.2004.tracking.SPSS.zip

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2004	USA	Web TV/ Radio	Watch a video clip or listen to an audio clip online	Watch a video clip or listen to an audio clip online, Variable: active22	Pew Internet Nov Dec 2004 tracking	http://www.pewinternet.org/dataset_download.asp?i=46&d=Nov-Dec.2004.tracking.SPSS.zip
2006	USA	Questionnaire		Podtrac Podcast Audience Survey, survey on podcast audience, the results are not (yet) available some results are found on: http://www.podcastingnews.com/archives/2006/05/podtrac_survey.html	Podtrac Podcast Audience Survey	http://www.zoomerang.com/recipient/survey.zgi?p=WEB224TR73HVMS
2005	China	p2p	p2p file sharing	Usage of Bit Torrent Software, P. 64	Report on Internet Development in China	http://www.cnnic.net.cn/download/2006/17threport-en.pdf
2003	Korea	download music etc.	Paid content subscriber: subscribed to paid contents within the preceding 6 months. / Opinions on charging fees for contents.	ONLY paid contents, P. 22	Survey on the Computer and Internet Usage	http://www.cnnic.net.cn/download/manual/Korea_0306.pdf#search=%22Korea%20Network%20Information%20Center%202003%20Survey%20on%20the%20Computer%20and%20Internet%20Usage%22
2003	Korea	paid contents	Percentage of persons paid for content within the last 6 months and kind of content paid for (online games, movies, education, business, adult content ...)	Percentage of persons paid for content within the last 6 month, P. 22 kind of content paid for (online games, movies, education, business, adult content ...) P.22	Survey on the Computer and Internet Usage	http://www.cnnic.net.cn/download/manual/Korea_0306.pdf#search=%22Korea%20Network%20Information%20Center%202003%20Survey%20on%20the%20Computer%20and%20Internet%20

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
						Usage%22
2003	Korea	Web TV/ Movies	Web TV (movies	ONLY paid contents, P. 22	Survey on the Computer and Internet Usage	http://www.cnnic.net.cn/download/manual/Korea_0306.pdf#search=%22Korea%20Network%20Information%20Center%202003%20Survey%20on%20the%20Computer%20and%20Internet%20Usage%22
2005	UK	chatting	Chat, read blogs	Used a chat, P.12	The Internet in Britain:The Oxford Internet Survey(OxIS) 2005	http://www.oii.ox.ac.uk/research/oxis/oxis_20050520.pdf
2005	UK	create webpage	Ever tried to set up a web page.	Ever tried to set up a web page, P. 11	The Internet in Britain:The Oxford Internet Survey(OxIS) 2005	http://www.oii.ox.ac.uk/research/oxis/oxis_20050520.pdf
2005	UK	download music	download music, play games, jokes.	Download music, P.19	The Internet in Britain:The Oxford Internet Survey(OxIS) 2005	http://www.oii.ox.ac.uk/research/oxis/oxis_20050520.pdf
2005	UK	download video	download video	Download videos, P.12	The Internet in Britain:The Oxford Internet Survey(OxIS) 2005	http://www.oii.ox.ac.uk/research/oxis/oxis_20050520.pdf

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2005	UK	VoIP	VoIP	Used VoIP, P.12	The Internet in Britain:The Oxford Internet Survey(OxIS) 2005	http://www.oii.ox.ac.uk/research/oxis/oxis_20050520.pdf
2005	UK	Web radio	Web radio	Listened to web radio, P.12	The Internet in Britain:The Oxford Internet Survey(OxIS) 2005	http://www.oii.ox.ac.uk/research/oxis/oxis_20050520.pdf
2004	World	p2p	p2p file sharing	Share of P2P traffic at total internet traffic	The true picture of 2P2 Filsharing	http://www.cachelogic.com/home/pages/studies/2004_01.php
2002	Korea	chatting	Chatting	Chatting by educational attainment, age and occupation	Use of Internet by educational attainment,age,occupation	http://www.nso.go.kr/eng/searchable/main.html
2002	Korea	download music, video and other hobby activities	download music, video and other hobby activities	Using the internet for recreational purpose(download music, video etc.) by educational attainment, age, occupation	Use of Internet by educational attainment, age, occupation	http://www.nso.go.kr/eng/searchable/main.html
2002	Korea	chatting	Chatting	Chatting by region	Use of internet by region in Korea	http://www.nso.go.kr/eng/searchable/main.html
2002	Kor	download music, video and other hobby activities	download music, video and other hobby activities	Using the internet for recreational purpose(download music, video etc.) by region	Use of internet by region in Korea	http://www.nso.go.kr/eng/searchable/main.html

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2005	China	download music etc.	ICQ, MSN, online discussions or chat groups, keep a blog, make or update web pages.	Download music from the internet (form all sources not only P2P) based on a survey on 56.7% of the internet users, P. 28 and 118	World Internet Project 2005 China Report 2005	http://www.worldinternetproject.net/publishedarchive/China%20Report%202005.pdf
2005		VoIP	For which of the following activities did you use the Internet for private purposes in the last 12 months? Telephoning over the Internet	model survey, not an operational survey Telephoning over the Internet, P.148	Guide to Measuring the Information Society	http://www.oecd.org/dataoecd/41/12/36177203.pdf
2005		chatting	cf. above ... Other communication (e.g. chat rooms/sites, message boards, instant messaging, Web logs)	model survey, not an operational survey chat, message board, instant messaging, P. 148	Guide to Measuring the Information Society	http://www.oecd.org/dataoecd/41/12/36177203.pdf
2005		download music	For which of the following activities did you use the Internet for private purposes in the last 12 months? Downloading or listening to online music	model survey, not an operational survey download music, P.149	Guide to Measuring the Information Society	http://www.oecd.org/dataoecd/41/12/36177203.pdf
2005		download movies	cf. above ...Downloading or watching movies, short films or images	model survey, not an operational survey download movies, P.149	Guide to Measuring the Information Society	http://www.oecd.org/dataoecd/41/12/36177203.pdf
2005		Web radio	cf. above ...Listening to Web radio or watching Web television	model survey, not an operational survey listen to web radio or watch web tv, P.149	Guide to Measuring the Information Society	http://www.oecd.org/dataoecd/41/12/36177203.pdf
2005		download movies	What types of goods or services did you buy or order over the Internet for private use in the last 12 months? Movies, short films or images which are digitally delivered	model survey, not an operational survey bought digital delivered movies, P. 150	Guide to Measuring the Information Society	http://www.oecd.org/dataoecd/41/12/36177203.pdf
2005		download music	cf. above ...Music products which are digitally delivered	model survey, not an operational survey	Guide to Measuring the Information Society	http://www.oecd.org/dataoecd/41/12/36177203.pdf

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
				bought digital delivered music, P. 151		f
2005		mobile internet	For which of the following activities did you use a mobile phone in the last 12 months? Accessing the Internet, for example, browse WAP pages or use i-mode services	model survey, not an operational survey mobile internet services, P. 153	Guide to Measuring the Information Society	http://www.oecd.org/dataoecd/41/12/36177203.pdf
2005		download music	cf. above Downloading music, ring tones, games or videos	model survey, not an operational survey downloading music P. 153	Guide to Measuring the Information Society	http://www.oecd.org/dataoecd/41/12/36177203.pdf
2006	Japan	3 G mobile services	Number of subscribers to FOMA third-generation mobile phone service totalled 25.86 Million on June 18, 2006 topping the 25.76 Million 2G subscribers.		NTT DoCoMo Press Conference announcing the results for the first quarter of the fiscal year ending March 31.2007 (Minutes)	http://www.nttdocomo.com/binary/press/FY2006_1Q_Earnings.pdf#search=%22number%20of%20FOMA%20user%22
2005	D, SP, UK, SE, F, HU, NL	p2p and download music	Digital music files like MP3 files can be obtained from a variety of sources. Approximately, how often have you used the following sources over the past 6 months? Own CDs, CDs of family/friends, P2P networks, Online music stores, Subscr. Service, Music related websites, received message, Mobile music service	Sources of digital music file by country, age and gender and frequency of use of p2p networks, in % of digital music users, P.15	Digital Music Usage and DRM	http://www.indicare.org/survey

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2005	D, SP, UK, SE, F, HU, NL	p2p	And how often have you over the past 6 months... Burned your own mixes to CDs, Shared music files with family or friends, Shared music files with other people	Frequency of sharing music by country, age, gender, occupation and frequency of use of p2p networks, in % of digital music users, P.18	Digital Music Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F, HU, NL	p2p	What type of music have you downloaded from the Internet over the past 6 months? Known music by known artist, Unknown music by known artist, Music by unknown artist	Type of music downloaded, by country, age, gender, occupation and frequency of use of p2p networks, in % of downloaders, P.20	Digital Music Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F, HU, NL	p2p	Have you ever done the following after discovering a new artist on the Internet? Downloaded more, Bought digital music, Bought CD, Visited concert, Followed media	Activity after discovering a new artist on the Internet, by country, age, gender, occupation and frequency of use of p2p networks, in % of downloaders that discovered a new artist, P. 22	Digital Music Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F, HU, NL	p2p	Did you ever have the following problems when using p2p Networks? Quality of tracks, Availability of songs, Usage rights, Finding help, Accessibility of service, Playing songs, Burning songs, Forwarding songs, Other technical difficulties	Problems with P2P networks, in % of P2P users, P.30	Digital Music Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F, HU, NL	download music	Did you ever have the following problems when using digital music stores? Quality of tracks, Availability of songs, Usage rights, Finding help, Accessibility of service, Playing songs, Burning songs, Forwarding songs, Other technical	Problems with digital music stores, in % of music store users, P.31	Digital Music Usage and DRM	http://www.indicare.org/survey

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
			difficulties			
2005	D, SP, UK, SE, F, HU, NL	download music	You said that you have bought digital music in an online or mobile music store. Would you agree or not agree to the following statements? Online stores have better selection than CD stores, Pre-listening is more convenient than in CD stores, Recommendations help me find the music I like	Advantages of digital music stores, by country, age, gender and frequency of use of p2p networks, in % of music store users, P.34	Digital Music Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F, HU, NL	download music	Do you know if it was protected by a DRM system? Yes, it was protected, No, it was not protected, I don't know	Awareness of DRM , by country, age, gender and frequency of use of p2p networks ,in % of digital music store users, P. 39	Digital Music Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F, HU, NL	download music	Was the usage of the music restricted? Yes, but I don't know the details, Yes, and I know the details, I don't know	Awareness of usage restrictions, by country, age, gender and frequency of use of p2p networks ,in % of digital music store users, P. 39	Digital Music Usage and DRM	http://www.indicare.org/survey

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2005	D, SP, UK, SE, F, HU, NL	download music	Do you care whether the music you download onto your computer is copyrighted or is this something you don't care much about? I care if the music is copyrighted, This isn't something I care much about, I don't know exactly what copyright means	Awareness of copyright, by country, age and gender and frequency of use of p2p networks, in % of digital music users, P.41	Digital Music Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F, HU, NL	download music	Proportion of Frequent P2P users, by country, age and gender, in % of internet users, P.47	Proportion of Frequent P2P users, by country, age and gender, in % of internet users, P.47	Digital Music Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F	download movies	Have you ever... • Used your computer to watch digital content (e.g. video streams, video files or video downloads of TV shows, music videos or movie)? • Used your computer to download video content from the Internet? (e.g. movies, TV shows) • Used a portable player (e.g. mobile phone, video iPod, PlayStation Portable) to download or watch digital video content?	Experience with digital video content, by country, age, gender and frequency of internet use, in % of internet user, P.9	Digital Video Usage and DRM	http://www.indicare.org/survey

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2005	D, SP, UK, SE, F	download movies	<p>Why have you never used your computer or portable device to download or watch digital video content? (Multiple answers possible)</p> <ul style="list-style-type: none"> • I don't know how that works • It is illegal • My Internet connection is not fast enough • It is too expensive • I'm not very interested in video content • I just never found the time to do that • I rather buy or rent DVDs or pre-recorded tapes • Other reasons • Don't know 	Reasons for not using digital video content, by country, age, gender and frequency of internet use, in % of digital video non-users, P.13	Digital Video Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F	download movies	<p>Do you use your computer or a portable player to download or watch the following video contents? (Excluded are video games, playing DVDs and using the PC as TV receiver)</p> <ul style="list-style-type: none"> • Recently released movies • Older movies • TV shows • Music videos • Adult content • News and sports • Movie previews and advertisements • Content produced by amateurs (e.g. video blogs, video podcasts) • Private content (e.g. family videos) 	Types of digital video content, by country, age, gender and frequency of internet use, in % of digital video users, P.17	Digital Video Usage and DRM	http://www.indicare.org/survey

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2005	D, SP, UK, SE, F	download movies	<p>Are you using the following sources to obtain digital video content?</p> <ul style="list-style-type: none"> • Your own DVDs that you ripped (transferred them into digital files) • DVDs of family members that you ripped (transferred them into digital files) • P2P networks like Kazaa, Morpheus, eDonkey, or BitTorrent • Portals where one can download and stream movies from the Internet (e.g. video-on-demand services) • Services from mobile operator • Internet offerings of TV stations • Company websites (movie previews, advertisements) • Video blogs or podcasts • Other sources 	Sources for digital video content, by country, age, gender and frequency of internet use, in % of digital video users, P.18	Digital Video Usage and DRM	http://www.indicare.org/survey

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2005	D, SP, UK, SE, F	download movies	<p>How important are the following advantages of watching and/or downloading digital video content via the Internet to you?</p> <ul style="list-style-type: none"> • I can find content that is not otherwise available in the country where I live. • I can find content that is not available in retail or rental stores. • I can watch content whenever and wherever I want without taking care of screening dates (i.e. time-shift). • It is more convenient than buying or renting DVDs or pre-recorded tapes in a store. • I can avoid commercials. 	Advantages of digital video usage, by country, age, gender and frequency of internet use, in % of digital video users, P.25	Digital Video Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F	download movies	<p>Have you ever watched and/or downloaded a specific video after...</p> <ul style="list-style-type: none"> • You watched the movie in cinema? • You rented the DVD or pre-recorded videotape in a video store? • You watched a preview or trailer on the Internet? • You received recommendation from friends or the media? • You watched the show on TV before? 	Stimulation for downloading and watching, by country, age, gender and frequency of internet use, in % of digital video users, P.22	Digital Video Usage and DRM	http://www.indicare.org/survey

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2005	D, SP, UK, SE, F	download movies	<p>Assuming a piece of digital video content you are interested in is only available for a fee: For which of the following usage rights and types of content would you be willing to pay extra? The possibility to...</p> <ul style="list-style-type: none"> • Transfer files easily between devices. • Share files with friends or family members. • Store files on any of my devices. • Burn files to CDs or DVDs. • Watch files whenever it is convenient for me without taking care of screen dates (i.e. time-shift). • Use content privately for my own productions and remixes. 	Willingness to pay for usage rights , by usage rights, in % of internet users that uses digital video or plan to do so in the future, P.26	Digital Video Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F	p2p	<p>You said that you use P2P file sharing networks to download digital video content. What would you do if the respective network turned commercial and offered high-quality content for a fee?</p> <ul style="list-style-type: none"> • I would continue to use that network and pay the fee. • I would switch to a different P2P network where content continues to be available for free. • I would buy or rent more DVDs. • I would switch to so-called underground networks like IRC. • Don't know. 	Willingness to pay for P2P offerings, by country, age, gender and frequency of internet use, in % of digital video users, P.29	Digital Video Usage and DRM	http://www.indicare.org/survey

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2005	D, SP, UK, SE, F	download movies	Do you care whether the video you watch on your computer or other device is copyrighted or is this something you don't care much about? <ul style="list-style-type: none"> • I care if a file is copyrighted. • This isn't something I care much about. • I don't know exactly what copyright means. • Don't know. 	Attitude towards copyright, by country, age, gender and frequency of internet use, in % of digital video users, P.32	Digital Video Usage and DRM	http://www.indicare.org/survey
2005	D, SP, UK, SE, F	download movies	When you last downloaded a video, do you know whether its usage was restricted, e.g. by limiting the number of times you can burn it to CD or DVD or prohibiting it altogether? <ul style="list-style-type: none"> • Yes, it was protected. • No, it was not protected. • I don't know if it was protected or not. 	Awareness of usage restrictions, by country, age, gender and frequency of internet use, in % of digital video users, P.35	Digital Video Usage and DRM	http://www.indicare.org/survey
2005	Canada	Questionnaire			Canadian Internet Use Survey 2005 Questionnaire	http://www.statcan.ca/english/sdds/instrument/4432_Q1_V6_E.pdf
2005	Canada	chat, instant messenger	During the past 12 months, have you used the Internet at home? ... to participate in chat groups or to use a messenger (e.g., ICQ or MSN)	percentage of internet home users, participating in chat groups or using a messenger, P.7	Canadian Internet Use Survey 2005	http://www.statcan.ca/Daily/English/060815/d060815b.htm
2005	Canada	download music	During the past 12 months, have you used the Internet at home? ... to obtain or save music (Free or paid downloads)	percentage of internet home users downloading music , P.7	Canadian Internet Use Survey 2006	http://www.statcan.ca/Daily/English/060815/d060815b.htm
2005	Canada	Web radio	During the past 12 months, have you used the Internet at home? ... to listen to the radio over the Internet	percentage of internet home users listening to the radio over the Internet, P.7	Canadian Internet Use Survey 2006	http://www.statcan.ca/Daily/English/060815/d060815b.htm

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
2005	Canada	Web TV	During the past 12 months, have you used the Internet at home? ... to download or watch TV over the Internet	percentage of internet home users downloading or watching TV or a movie over the Internet, P.7	Canadian Internet Use Survey 2006	http://www.statcan.ca/Daily/English/060815/d060815b.htm
		Questionnaire			Computer and Internet Use by Students in 2003 Questionnaire (Current Population Survey, October 2003, School enrolment and computer use supplement File)	http://www.nber.org/cps/cpsoct03.pdf
2003	US	Web radio, Web TV	This year, has this person used the Internet for listening to the radio or viewing TV or movies?	Percentage of children in nursery school and students in grades K-12 using the Internet to watch/listen to TV, movies, or radio, - by sex and grade level, P.32 - by parent educational attainment P.33 - by race/ethnicity, P.34 - by family income, P.35 (Universe: All persons 3 and older) Based on the October 2003 supplement of the current population survey of the US Government	Computer and Internet Use by Students in 2003 (Current Population Survey, October 2003, School enrolment and computer use supplement File)	http://nces.ed.gov/pubs2006/2006065.pdf
2003	US	VoIP	This year, has this person used the Internet for telephone calls?	Percentage of children in nursery school and students in grades K-12 using the Internet to make a phone call, by sex and grade level, P.32 by parent educational attainment P.33 by race/ethnicity, P.34 by family income, P.35 (Universe: All persons 3 and older)	Computer and Internet Use by Students in 2003 (Current Population Survey, October 2003, School enrolment and computer use supplement File)	http://nces.ed.gov/pubs2006/2006065.pdf

Year	Countries	Type of service asked for	Question used or information about question	Notes	Name / title of the document	URL
				Based on the October 2003 supplement of the current population survey of the US Government		

Expand from “access” and “use” to “confidence in use” to “facilitating and constraining factors” and “impact” related questions

Status-quo: In the Eurostat household surveys the target groups are asked whether they have access to the internet and whether they already carried out a specific internet related activity. Respondents are provided with lists of such activities which they are asked to tick. Depending on the question, they are asked whether they have “ever” carried out such an activity or “in the last 3 months”. This is a rather “hard” indicator revealing information on the actual use and also rather easy and straightforward to respond to.

Recommendation: It may be worthwhile to expand the questions to also obtain information on further issues which could shed some further light on people’s satisfaction with service use, abilities for, interests in, barriers to and impact of using advanced services and thereby reaching significantly beyond the use of a service only. Again, this would allow for a more targeted policy development addressed to specific target groups. Examples of how these could be considered and incorporated into survey questionnaires are provided herewith:

1. “Satisfaction with the use of a service” revealing some information on the likelihood of the user with respect to a re-use of the service and also providing some indication on ‘impact’. The following answer options may be used:
 - a. very satisfied
 - b. fairly satisfied
 - c. not satisfied
 - d. don’t knowor
 - a. very satisfied
 - b. somewhat satisfied
 - c. neither satisfied nor dissatisfied
 - d. somewhat dissatisfied
 - e. very dissatisfied
 - f. don’t know
2. “Confidence in using a service” revealing information about the skills and abilities of users for using a service in its present format or whether adaptations are recommended or skill development actions needed respectively. A differentiation according to the level of confidence is recommended which may take the following format:
 - a) very confident
 - b) fairly confident
 - c) not confident
 - d) do not know what this means
 - e) don’t knowAlthough these are more soft indicators than the actual use indicator their inclusion would allow for a more detailed and differentiated analysis on which to base more targeted policy decisions.
3. “Interest in using a service” revealing information as to the likelihood of current non users to become users of advanced services.
4. “Availability of a service” revealing information on the opportunities of a potential user to make use of advanced services, i.e. the supply side. This may be asked for as part of a question on “barriers”.
5. “Barriers to using a service” revealing information on the obstacles and factors constraining the use in a country, region, target group etc. A list of barriers needs to be developed.

6. “Outcomes and impact of using a service” revealing information about the actual result and impact. Such questions can probably best be asked in the format of statements to which the interviewee has to respond using the answer categories listed below. Several of these items may be related to the ‘traditional’ ways of using a service. The question could be formulated as follows: “Please tell me for each of the following, how often do you experience this ... (item):”

- I am downloading a music file from the internet instead of buying a CD
- I am listening to web radio as opposed to normal radio
- peer-to-peer file sharing of movies and as opposed to buying or borrowing a DVD in a video store
- < item ... >
- < item ... >

Answer categories:

- b. often
- c. sometimes
- d. never
- e. does not apply
- f. don't know

Positive experiences in conducting CATI interview questions along the formats described above could be achieved in large-scale population surveys carried out as part of the projects SIBIS (www.sibis-eu.org) and BISER (www.biser-eu.com) to name just a few.

One may also consider the “importance” of the internet or a specific (advanced) service in the (daily) execution of tasks in a format inquired into for instance by the PEW survey (cf. below)

BIG01 Now I'd like to ask you about some important decisions or changes that may have occurred in your life. In the last two years have you...?

BIG02 Thinking about the process you went through as you made this decision or dealt with this event, would you say the Internet played a **crucial** role in this, an important role, a minor role, or no role at all?³

Based on internet users

1. Bought a car
2. Made a major investment or financial decision
3. Got additional education or training for your career
4. Chose a school or a college for yourself or your child
5. Helped another person deal with a major illness or health condition
6. Internet not important/crucial in any of these major moments past two years
7. Experienced none of these major moments in past two years
8. Don't know/Refused

BIG04 We'd like to know the specific role the internet played in that decision or event. Did the internet mostly...

Based on those for whom internet played 'crucial' or 'important' role in major moment in past two years

1. Help you find advice or support from other people
2. Help you find information or compare options
3. Help you find professional or expert services
4. Something else (VOL)
5. Don't know/Refused

BIG09 I'm going to read another short list of some important decisions or changes that may have occurred in your life. In the LAST TWO YEARS, have you...?

BIG10 Thinking about the process you went through as you made this important decision or dealt with this event, would you say the Internet played a **CRUCIAL** role in this, an important role, a minor role or no role at all?

1. Experienced the death of a family member or close friend
2. Found a new place to live
3. Changed jobs
4. Received a major promotion and/or raise at work
5. Started a major new romantic relationship
6. Ended a major romantic relationship
7. Gotten married
8. Gotten divorced
9. Dealt yourself with a major illness or other health condition
10. Become involved in a lawsuit, criminal case or other legal action
11. Started a new hobby or become more involved with a hobby

Source: PEW: February 2005 Daily Tracking Survey – Questionnaire

Consider IT convergence as an issue

Status-quo: Technological convergence has started to take place. Convergence of media occurs when multiple products come together to form one product with the advantages of all of them. The computer no longer is the only device for accessing the internet. This development also opens up new opportunities for advanced services development, delivery and use.

³ Question wording for BIG02 in January 2002 trends as follows: "Thinking about how you came to do this, would you say the Internet played a crucial role in this, an important role, a minor role, or no role at all?"

WIFI provides wireless access to the internet. Not only computers but also digital television provides direct internet access through high speed cable modems and the provision of different types of services based on the broadband (e.g. face-to-face, video) interaction of individuals. These include ICT-based care services, security services but also health services and independent living services but also mobile services combining security and access to help and care while on the move, i.e. location-independent mobile alarm and tele-care service which are starting to emerge. All of these are offering substantial advantages and benefits to the increasingly ageing European population but also to the carers no matter whether these come from professional institutions or from within the family.

Mobile devices are becoming more popular as internet access device although their use for this purpose is still some distance away from what we experience in countries like Japan.

Recommendation: When considering newly emerging advanced services (e.g. podcasting, weblogs) as an issue in future surveys but also with respect to internet access and use in general it may be worthwhile to relate questions about these to the access platform used for their delivery. In this context the convergence of internet access platforms like the PC, TV, mobile devices and the emergence of triple play service offers will in principle provide additional options also to user groups which so far did not belong to the internet community due to a lack of computer use. It may be worthwhile to consider questioning about the knowledge about, interest in and the use of advanced services providing ICT-based care services, security services but also health services and independent living services which are starting to be used by specific target groups (e.g. elderly people) in Europe. One may also want to expand these questions to the other aspects mentioned above such as satisfaction with use, availability, barriers to use, outcomes and impact.

Free versus paid services

Status-quo: With the advent of the internet first information and service offerings were mostly provided free of any cost. This also is the case with newly emerging advanced services which start with the provision of their services free of charge. The situation has started to change. More traditional internet-based services have been expanded in quantity and quality and new business models of information and service provision etc. have been developed and implemented by information and service providers and many other actors. These take different forms ranging from the electronic provision of formerly already existing services, e.g. provision of an ePaper instead of the traditional newspaper, to new services sometimes complementing already existing services in diverse areas ranging from entertainment to health and care services. In the meantime and in many cases, service providers have moved over to charge their customers for the provision of services.

Advanced services which emerged recently and over the last years have for different reasons also started to change from service which were offered free of cost to services with costs. An example are the portals for peer-to-peer file-sharing of music (e.g. Kazaa) which for legal reasons are seizing operation and are now being replaced by music download portals with costs. The future will show which of these services with costs and which related business models will succeed and remain in existence.

It is against this background that especially information and service providers of advanced services but also more traditional but ICT-based business services are interested in the customer's willingness to pay for such services. Policy makers are interested in desirable service provision for which there is a demand and a willingness to pay among different target groups since this can help to boost employment and the creation of jobs in their countries and regions.

Recommendation: Consider the internet user's (and non-users) willingness and preparedness to pay for offers which have very often so far been freely available on the internet like music downloads on the one hand but also newly emerging care, health or independent living services for which specific target groups are likely to show a willingness to pay. The willingness and price elasticity can either be asked for in general or using price bands for specific types of uses.

An interesting approach to obtain information on the willingness to pay for online offers was used in the “Survey on the Computer and Internet Usage” in Korea in 2003. Here the interviewees were asked whether they had paid for online content within the last 6 months and kind of content paid for (online games, movies, education, business, adult content ...) and whether they were willing to increase their current spending on such services by asking for percentages (e.g. up to 10%, 10-25% etc increase).

Further information can be obtained under the following URL:

http://www.cnnic.net.cn/download/manual/Korea_0306.pdf#search=%22Korea%20Network%20Information%20Center%202003%20Survey%20on%20the%20Computer%20and%20Internet%20Usage%20

Other

Changes in ‘traditional’ service deliveries

Status-quo: The use of advanced services is likely to result in changes in the delivery of traditional services. Examples from new ICT-based services provided in areas such as public administration, health and learning include for instance the changes and improvements that can be achieved through eGovernment, eLearning or eHealth services in comparison to ‘traditional’ delivery channels in these areas⁴. With respect to (from today’s perspective) advanced services this may include likely changes and replacements through services like Web TV where an increase in use may result in replacements of traditional TV viewing or the purchase of DVDs thereby impacting whole industries (cf. also the chapter on “Expand from “access” and “use” to “confidence in use” to “facilitating and constraining factors” and “impact” related questions” (here: “Outcomes and impact”)).

Recommendation: Consider the “traditional” services replacement potential through advanced ICT-based services in future surveys, i.e. gather information on and compare the use of “traditional” services in specific areas in parallel to the use of advanced services over time in order to identify the impact on and likely changes in service provision and industry in general. The Canada Online 2004 survey has already included questions of this type in their surveys such as the following:

Q 33B: And in general, to what extent do you think that your use of the Internet for voice conversations has reduced your use of the traditional phone? Would you say that it has... (read the list) your use of the traditional phone at home?

- Completely replaced
- Reduced to a large extent
- Reduced to some extent
- Reduced to no extent at all
- DK
- RF

(<http://www.worldinternetproject.net/publishedarchive/Canada%20Online%20Final%20English%20Version%2010302005.pdf>)

More sophisticated analysis of gathered indicator data: multivariate statistical data analysis

Status-quo: The current options for data analysis are limited since data provision in its present format does not allow for a more sophisticated analysis of gathered indicator data including multivariate statistical analysis. The latter would allow for achieving a better understanding or observed results which in turn would support the development of more appropriate policies.

⁴ This topic will be further elaborated on with respect to public eServices in the special BenchPol report on “Use of Public Online Services”.

Recommendation: In order to examine the associations between various factors (e.g. socio-demographic indicators) and observed patterns of internet or advanced services usage or non-usage, multivariate statistical analysis methodologies, like for instance multiple (logistic) regressions, are seen as an appropriate methodology which should be considered for use when analysing the data from future surveys.

Similarly, principal component analysis or factor analysis tools can be used to develop components which can be used to comprehensively analyse and understand survey results.

Finally, the correspondence analysis provides a method which can be used to reduce the complexity of large data-sets and to visually present survey results. It is a descriptive, multivariate statistical method used to visually display data patterns, produces a graphical output of the results – usually in form of a two or three dimensional graph – depicting (dis-) similarities in the data as distances.

As part of the eUser project (amongst others) all these multivariate statistical methods have recently been employed successfully and contributed to an improved understanding and knowledge about the determinants of observed results. This has enabled disentangling of the different factors that are involved and has resulted in a better understanding of the issues and a more useful evidence basis for policy. The study included four key sets of variables in its measurement and analysis:

- socio-demographic (age, education, socio-economic, etc.)
- ICT-related (access, skills, attitudes, usage styles, etc.)
- domain-related (activities and interests in the targeted fields)
- contextual (evolution of the Information Society and level of development of online services of public interest in the Member States).

Multivariate analysis techniques enabled assessment for the first time of the separate and conjoined impacts of these factors.

However, the use of such analysis tools requires the availability of micro data from the Eurostat Community surveys on ICT usage. Should this turn out to be impossible, thought may be given to including appropriate questions into other regular Europe-wide surveys such as the Eurobarometer surveys or specific Flash Eurobarometer surveys or ad-hoc surveys as part of service or framework contracts issued by the European Commission to reveal the necessary data which can help to identify the key determinants of observed patterns. This in turn will support the development of more focussed and targeted policy activities.

Better conceptualisation and measurement of different user (and non-user) groups

Status-quo: A differentiated perspective is important if policies in relation to “use and take-up of advanced services” or other relevant fields of interest such as “eInclusion” and “online services of public interest” etc. are to be well targeted and to effectively address the different levels of challenge. This requires conceptualising, profiling and measuring issues for the different user (and non-user) groups that make up the European population overall. Aspects to be addressed include:

- Internet non-users (with or without home access, expecting to become users or not in the foreseeable future, etc)
- Internet users (profiles of different groups in terms of Internet-related skills, usage styles, etc.)
- Online service users (profiles of different groups in terms of regular or occasional usage, quality of user experiences, gaining of benefits, etc.)

Recommendation: Develop and apply more differentiated conceptualisations to profile and measure different user (and non-user) groups and the issues of most relevance for them.

The eUser study provides a useful starting point for the further research that is needed to develop an increasingly differentiated and more nuanced understanding of the spectrum of circumstances and issues across the user and non-user populations.

As a first step towards fulfilling these requirements, eUser has developed a simple model to be used for monitoring progress. This so-called ACM model (Access–Competence–Motivation) can be adapted flexibly to the indicators which are available, to new delivery paradigms (e.g. to the shift to increasingly mobile applications, which is likely to be a trend of the near future), to the take-up of advanced services, to new definitions of inclusion / exclusion and to new priorities on the policy agenda.

As opposed to most existing data sources, the ACM model accounts for the fact that access, competence and motivation barriers are interrelated – in different ways across different sections of the population.

The ACM model, as developed by Viherä and Nurmela (2001), was also applied in the LearnInd project to generate a user typology according to the “propensity to the use of computers and internet by teachers in classroom situations at schools”.

Attitudes on future issues

Status-quo: Newly emerging ICTs and resulting services which have been introduced into the market have in the past regularly resulted in unforeseen uses by users, thereby generating new markets. The classical recent example of this type is the use of SMS (Short Message Service). With the advent of the mobile phones industry and policy makers did not expect that SMS – originally only seen as a by-product – would create such vast amounts of revenues for the telcos.

Recommendation: Consider the development of survey questions which could be used to reveal information on a general interest in specific, disruptive uses of ICTs. Such an approach could be used for testing the likelihood of the emergence of an interest in and a demand for unanticipated uses of advanced services or (mobile) access devices to such services at an early stage (some sort of scenario testing). It could be expanded to also address the desirability of such developments by different types of respondents from their today’s perspective. One may also include and address the willingness to pay for such services. The challenge lies in the development of scenarios for unanticipated future services and access devices.

Community Survey on ICT Usage in Enterprises

Further development of existing questions

Formulation of questions

Status-quo: In the present questionnaire the formulation of questions relating to different advanced services and activities for which the internet was used which have a relationship to advanced services, could probably be improved since there have obviously been some misunderstandings or misinterpretations of these questions by respondents in some countries which resulted in questionable results (cf. previous chapters).

Recommendation: It is recommended to either drop or reformulate the response options as depicted in the following table:

No.	Question as in 2005 Survey	Proposed new questions
B8 Did the Web Site of your enterprise provide the following facilities? (your enterprise <u>as provider</u> of Internet services)		
B8a	Marketing the enterprise's products	✓
B8b	Facilitating access to product catalogues and price lists	✓
B8c	Customised page for repeat clients	Recommendation: drop, because it caused many problems for respondents (NB: This question has not been included in the 2007 survey)
B8d	Delivering digital goods or services	Any website is in a way delivering digital goods or services. What is meant here, probably is content that is paid for.
B8e	Providing after sales support	✓
B8f	Providing mobile internet services	Make sure that at least an abbreviated version the glossary explanation is integrated within the question wording, that is to explain that the question is about GPRS or WAP content.

(Only answer options marked in grey have been considered in the 2007 survey)

Inclusion of further advanced services: formulation of further answer options

Status-quo: In the present questionnaire advanced services of businesses are specified in rather general terms and all have a close relationship to the field of eBusiness.

Recommendation: It is recommended to also include further newly emerging advanced services which are only just starting to be used by some few frontrunners. As a starting point we suggest to include the use of corporate blogs.

A corporate blog is a weblog published and used by an organisation to reach the organisational goals. Although there are many different types of corporate blogs, they are mostly categorized as either external or internal corporate blogs. Corporate blogs are very strong communication and information sharing tools in a corporate community and they are thought provocative. Primary function of corporate communications/public relations today is network building. External blogs are participatory communications tools that can build complex and effective networks. Blogs build connections and links between and among your key audiences, which help the corporations to use these networks over time to persuade people to action, to respond to a crisis, to leverage market conversations and to improve the business overall. Well-known examples include the one of Andy Mulholland, Ron Tolido – Capgemini (<http://www.capgemini.com/ctoblog/>) or the global PR company Edelman, Richard Edelman, CEO (http://www.edelman.com/speak_up/blog/).

5.3 Conclusion

In order to enable the European Commission for a focussed and targeted policy development in the field of the present report but also in the wider information society domain it appears worthwhile to gain more information and knowledge as well as a better understanding of the underlying aspects and determinants of observable developments and patterns.

This requires more knowledge about regular users versus those who have only ever used specific services, their usage patterns, interests, etc. to reveal further insights of relevance for policy development.

The conceptualisation and measurement of different user (and non-user) groups constitutes a key challenge but is crucial for the support of targeted and target group specific policy strategies. The present report has made proposals of how this can be achieved.

Early information about newly emerging markets with respect to advanced services is desirable not only for policy developers. Therefore consideration of newly emerging advanced services such as podcasting and weblogs and incorporation of these into the surveys seems desirable since they are starting to be used more widely since 2004. With respect to newly emerging advanced services which are only just emerging or going to emerge in the future it may be worthwhile to first of all carry out ad hoc surveys for experimenting and testing and piloting newly developed indicators and survey questions before incorporating these into the large-scale Eurostat surveys.

For reasons outlined above and to better guide policy development it appears worthwhile not only to focus on access and use of advanced services but very importantly also inquire into the current knowledge about and availability of such services to the respondents, interest in using them, confidence in using them, the level of satisfaction in use, barriers to use, but also outcomes and impact of using them. Some of these issues (e.g. barriers) have already been considered in the 2007 survey questionnaires. When it comes to the measurement of impact of service use, we are tackling a new area where further research and indicator development and piloting work is required.

IT convergence is increasingly becoming an issue. It offers the potential for groups of citizens formerly excluded from the use of the internet and public online but also advanced services to access these. Therefore thought should be given to relating core questions on the above aspects also to access platforms.

The same applies to newly emerging ICT-based security, care, health, and independent living support services for specific target groups of high political interest such as the elderly citizens in Europe, a target group which – due to the demographic changes - is rapidly growing on the one hand but also extremely diverse in terms of needs and requirements on the other. It is recommended to expand the range of online services to be considered in the survey questionnaires also to these different types of services.

Willingness and preparedness to pay for service offers is becoming a crucial issue. Again, different types of users will be prepared (or not) to pay for different types of services. Knowledge about these issues differentiated to target groups is a critical issue for ICT product and service development and deployment but also for policy development.

It goes without saying that in the future we will be confronted with the replacement of 'traditional' service uses through online services no matter whether these will be the already available public online services in eGovernment, eHealth etc. or advanced services such as peer-to-peer file-sharing, web TV etc. Policy needs to properly understand how the different types of service uses will change and what the determinants and underlying processes are, whether and where an advanced or online service is going to fully replace a 'traditional' service, whether there will be a division of labour between the old and the new service, how 'traditional' services are going to adapt to the changing situations since these issues will point to (other) areas of policy action likely to emerge in diverse policy fields.

Descriptive statistical analysis of data is the starting point for handling the large survey data sets such as the ones from the Eurostat Community surveys on ICT usage. But only the use of multivariate statistical methods will enable us to gain further insights, a better understanding of the results and knowledge about the determinants and underlying processes for certain situations and observed patterns. This needs to be paralleled by the use of methodologies and presentation formats able to reduce the complexity of large data sets and to visually present survey results. Again, multivariate statistical analysis methods like the Correspondence Analysis can be used to further proceed on this path. In order to make better use of the already existing survey data there is an urgent need to tackle this area. Several approaches on how one could proceed have been made in the present report

However, many of the recommendations can only be put into practice when micro data from the Eurostat Community surveys on ICT usage is to be provided. Currently, the non-availability of micro

data from these surveys constitutes a major bottleneck for more innovative and gainful approaches to data analysis for more targeted policy development.