



Future-proofing eGovernment for the Digital Single Market

‘An assessment of digital public service delivery in Europe’

BACKGROUND REPORT

June 2015

A study prepared for the European Commission
DG Communications Networks, Content & Technology



*Digital
Agenda for
Europe*

This study has been prepared by Capgemini, IDC, Sogeti, and Politecnico di Milano for the Directorate General for Communications Networks, Content and Technology.



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Executive Summary

The eGovernment Benchmark provides insight into the state-of-play of the implementation of digital public services in Europe. For this benchmark of eGovernment services is assessed in 33 participating countries, including all of the EU28. The assessment is done by Mystery Shoppers, who measure the quality and quantity of online public services by acting as a user.

Under review is a set of seven life events. Each life event is measured once every two years. In 2014, three life events were assessed: Starting up a business, Losing and finding a job, and Studying. These three life events have also been assessed in 2012, allowing to compare European progress over time for the first time.

This report presents the basic analysis of the study and a detailed overview of the measurement and this year's life events. It is accompanied by an Insight Report, which provides the main insights stemming from the facts.

The study consists of four top-level benchmarks, covering important EU policy priorities:

- **User Centricity** - indicates to what extent (information about) a service is provided online and perceived;
- **Transparency** - indicates to what extent governments are transparent as regards a) their own responsibilities and performance, b) the process of service delivery and c) personal data involved;
- **Cross Border Mobility** - indicates to what extent European users can use online services in another country;
- **Key enablers** - indicates the extent to which five technical pre-conditions are available online.

Viewing eGovernment at a generic level (across life events), the 2014 measurement shows:

- **User Centricity in quantity:** Europe has come a long way in providing services, or at least information about the service, via the online channels. Few services are not online at all;
- **Widening gap between quality and quantity:** Last year's measurement found that while Europe scores high for availability of services, it scores lower on how ease or fast these services are. The gap in scores has grown;
- **Transparency improving as regards personal data:** Europe has made good progress as regards the handling of personal data. Other aspects of Transparency, e.g. on delivery of government services score unsatisfying;
- **True Digital Single Market hampered by borders:** eGovernment services are friendlier to domestic users than to users from other European countries. Still, Cross Border Mobility is improving, especially for businesses;
- **Few public websites are designed for mobile devices:** An analysis of the mobile friendliness shows only 27% of the European public websites currently supports the use of devices such as smart phones and tablets.
- **No progress in the supply of Key Enablers:** European public organisations make no more use of Key Enablers such as eID, or the Authentic Sources to allow pre-filling of information;
- **Automation has stalled.** Without more use of Authentic Sources as a Key Enabler, Europe has unsurprisingly made hardly any gains in automating online services. This leads to unnecessary duplication of work for users.

Zooming in on individual life events, key findings include:

- **Starting up a business** is relatively well supported by eGovernment services. Especially support functions such as FAQ, help and feedback functionalities score very well, as does the supply of portals. Governments make these functionalities available to starting entrepreneurs from other European countries as well;
- **Losing and finding a job** can be a tricky life event for users to complete fully online. Welfare agencies make relatively little use of eID. As a result, it is difficult to apply for unemployment benefits online in many European countries. Notably, welfare agencies value Transparency on their own operations;

- **Studying** across borders has become much easier over the past two years, as eGovernment services have greatly improved in this regard. While online services to businesses are usually more User Centric than citizen-oriented services, User Centricity to students is at the same level. Transparency however scores low.

A two-step clustering exercise has been carried out to place the performance of individual countries in the context of exogenous factors such as eGovernment demand and the environment:

- **eGovernment divide in Penetration and Digitisation:** European countries differ among themselves in the extent to which online services have been adopted and changed public sector, but less so in user satisfaction.
- **Individual approach to eGovernment required:** The cluster analysis shows there is no one right way, as countries can take various paths to digital maturity. To reach maturity, custom made strategies are required.
- **There is always a good peer:** Although the background (e.g. economic, demographic and institutional factors) of European countries varies, all countries can find good example among their own peers. All contextual groups have at least one country in the well performing Mature Cluster or Builders Cluster.

The eGovernment benchmark will be expanded next year with the 2015 measurement of four other life events.

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1 Introduction

‘Society is in the midst of a revolution - driven by digital technology.’

Commissioner Günther Oettinger

26 February 2015 on Digital4Europe Stakeholder Meeting¹

1.1 Digital Revolution

Winston Churchill said: ‘It is always wise to look ahead, but difficult to look further than you can see’. This perfectly reflects the dilemma many public and private organisations cope with: when technology is advancing so quickly, how can they define a sustainable strategy that allows them to improve in the longer term?

Disruptive change requires formulating new strategies. Famous innovations brought forward by companies from Silicon Valley are well known and lighted examples of what is ahead of us. New technologies (social, mobile, big and open data, Internet of Things) are opening up even more advanced practices and opportunities that press to rethink current operations. Governments will need to respond to the same extent (though not necessarily in the same way) that private sector companies need to respond to this trend.

There are two parts to the story: the first is the ability to use technology for customer engagement, better internal processes and to change business models. Technology as means to increase value. In the case of public organisations: to increase public value. The second lever for a successful digital journey is committed leadership. Research² showed that successful digital transformation did not happen bottom-up, but was steered at executive level: setting direction, building momentum and ensuring the organisation followed through.

This report is not unique in addressing the need for digital transformation of public sector – many have done so over the past years. This report *is* unique in revealing the current ‘digital status’ of Europe – by comparing eGovernment performance of 33 countries on a rich and robust set of indicators.

1.2 Who should read this report?

Anyone who is interested in how governments are coping with today’s challenges. The Benchmarking framework is constructed around key elements of eGovernment. Building from a very rich source of collected research data, using different methods and in strong collaboration with participating countries, the results provide a robust and coherent insight into the current state of play in Europe. To optimise follow-up of the research, we have decided to report on the outcomes through two reports, each addressing different audiences. This report is the **Background report**, which aims to deliver an impactful study on eGovernment. In the shorter **Insight Report**, we capture the key findings and policy recommendations.

Especially those who are working with eGovernment on a daily basis. The data processed by this measurement is broad (covering many domains) and deep (digging into the reality of the service processes from multiple angles). The report before you is called the ‘**background report**’. It is aimed to provide an extensive and detailed view of the performed measurement. It almost serves as an encyclopaedia of eGovernment performance in Europe. The indicators that compose the framework are presented for each single life event under assessment as well as at an aggregated level (covering the average of all life events). This report also includes the extensive description of the peer-clustering exercise that has been performed to drive learning in Member States.

Researchers that want to reuse a rich data source to extract deeper insights. The publication of both reports comes with a set of open, machine-readable data. This includes all life event assessments performed in 2013. The Commission’s webpage also includes the data collected in life event assessments in 2012 as well as the demand-side user survey amongst citizens (2012).

¹ Full text at https://ec.europa.eu/commission/content/speech-digital4europe-stakeholder-meeting_en

² ‘Leading Digital. Turning technology into business transformation’, G. Westerman, D. Bonnet, A. McAfee, HBR press, 2014.

1.3 Why read this report?

Benchmarking is an important aspect of the European Union’s Open Method of Coordination (OMC). It is used in order to stimulate mutual learning processes, to perform multilateral surveillance and to contribute to further convergence of participating countries’ policies in various policy areas. eGovernment benchmarking means undertaking a review of comparative performance of eGovernment between nations or agencies.

Benchmarking gives insight as to the state of play of eGovernment in the participating countries and is hence an essential part of the response to current socio-economic challenges. Benchmarking analysis is used as a comparison tool for analysing processes and performance metrics against the standard or best practices in a given field.

The analysis includes constructing a well-defined baseline against which the subject of the study is compared in order to analyse its performance, establish good practices and identify areas of strengths as well as inadequacies. In the context of eGovernment, it offers insight into how services can be made ‘twice as good, in half the time, for half the costs’ and can stimulate governments to respond faster and smarter. Benchmarking is the first step of a continuous benchmarking and improvement cycle.

Figure 1.1: Overview of eGovernment Benchmark reporting

	Insight Report	Background report (this report)	Open research data
For whom?	Government leadership	Policy officers	Academics & research communities
What?	Key findings and recommendations	Detailed analysis of indicators and life events	All data collected in machine readable format and method
Purpose	Direct European and national eGovernment strategies	Realise direct improvements in public service delivery	Stimulate re-use of data and in-depth analysis

1.4 A reading guide to this report

Apart from the introduction, this Background Report consists of four main sections:

- Chapter 2 discusses the method used for the 2014 eGovernment benchmark assessment.
- Chapter 3 reports on the progress for Europe at top level, across domains. The chapter closes with an analysis of the mobile friendliness of public administration websites.
- Chapters 4-6 report on the individual life events measured (again) this year: **Starting a business and early trading operations, Losing and finding a job and Studying, respectively.**
- Chapter 7 provides the explanation and insights into the clustering exercise, which provides a new perspective to eGovernment benchmarking as it compares peers and drives learning within Member States.

Together, these sections provide an overview of the 2014 eGovernment benchmark.

2 Measuring eGovernment

‘There is even more work to do to achieve a truly connected digital single market. A market where every consumer is able to enjoy digital content and services - wherever they are in the EU, including government services.’

Vice President Andrus Ansip

26 November 2014 in the European Parliament plenary session³

This chapter explains the measurement framework of the eGovernment Benchmark, as designed and agreed with European Commission and participating countries. It reveals what is measured and how – and what this means.

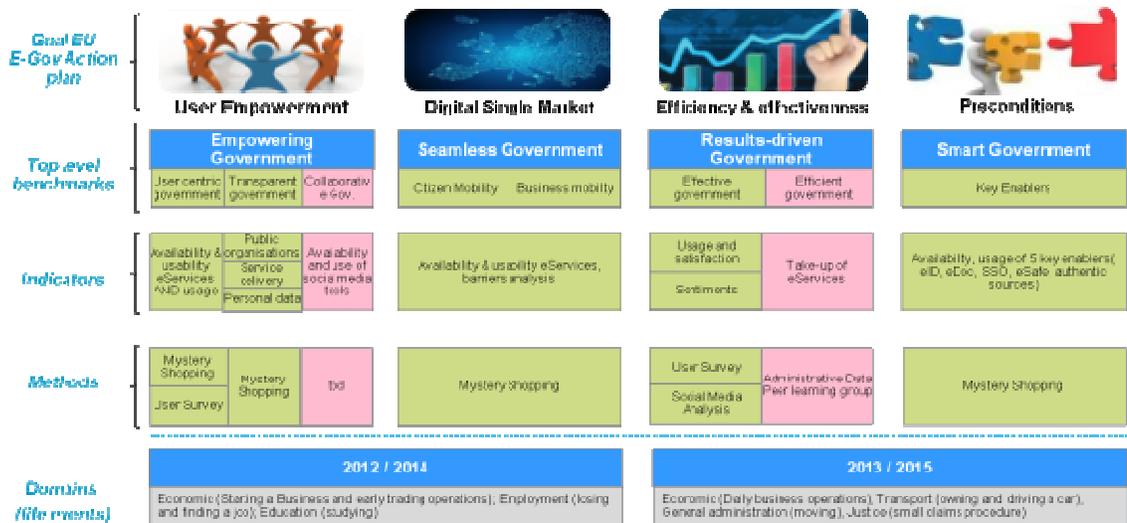
This chapter focuses on the method for the ‘traditional’ eGovernment benchmark framework. The methods of all studies on top of this benchmark, such as the mobile friendliness analysis (paragraph 3.7) or the clustering of countries (chapter 7) are described in their own sections. Furthermore, this chapter cannot discuss all details of the eGovernment benchmark framework measurement. A more extensive discussion of the method of the eGovernment benchmark can be found in the dedicated Method Paper, which is published on the DG CONNECT website.⁴

2.1 Method

The eGovernment Benchmark has been a monitor of eGovernment performance in Europe for over a decade. Commissioned by the European Commission, it now covers 33 countries and annually presents its findings on modernising public sector. It builds on a solid methodological foundation which was developed in close collaboration with Member States and the Commission. The method has evolved since 2001 to keep up with technological and organisational developments and is aimed at supporting public administrations to achieve cheaper, better and faster digital services.

During the re-design of the eGovernment Benchmark in 2011, the Commission, participating countries and consortium partners agreed on a framework which is visualised below in figure 2.1. Blocks in green are (to be) included in the eGovernment benchmark.

Figure 2.1: eGovernment Benchmarking Framework



³ Full text at http://europa.eu/rapid/press-release_SPEECH-14-2182_en.htm

⁴ Link to the report: https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/eGovernment%20Benchmarking%20method%20paper%20published%20version_0.pdf

As the figure shows, the framework is based on the four priority areas of the eGovernment Action plan. European progress on the priority areas is measured with a number of **indicators**, which are assessed using a particular **method of data collection**, in a number of **domains**.

Notably, not every part of the framework is assessed every year. Some parts have been measured once, while others are included in a cycle of bi-yearly assessments. As a result, not all parts of the framework above are included in this year's measurement or in this year's report. In the following paragraphs, indicators, data collection and domains which each be discussed in turn, indicating which parts are included in this year's measurement.

2.1.1 Indicators

The framework is structured around four main priority areas of the eGovernment Action Plan 2011-2015: User Empowerment, Digital Single Market, Efficiency & Effectiveness and Preconditions. These priority areas are not indicators by themselves, but progress on every priority area is measured by one or more indicators, so-called **top level benchmarks**. Four of these top level benchmarks are included in the 2014 measurement:

- **User Centric Government** (or User Centricity) – as measured by Mystery Shopping. This top level benchmark assesses the availability and usability of public eServices. It is connected to the User Empowerment priority area.
- **Transparent Government** (or Transparency). This top level benchmark evaluates the transparency of government authorities' operations and service delivery procedures and the accessibility of personal data to users. It is connected to the User Empowerment priority area.
- **Cross Border Mobility**. This top level benchmark, which is shown in figure 2.1 split into Citizen Mobility and Business Mobility, measures the availability and usability of cross border services. It is connected to the Digital Single Market priority area.
- **Key Enablers**. This top level benchmark assesses the availability of key enablers such as Single Sign On and eID functionalities. It is connected to the Smart Government priority area.

Top level benchmarks not included in the 2014 measurement are:

- **Effective Government**. This top level benchmark assesses Usage, User Satisfaction and Sentiment (i.e. perception) metrics. These indicate whether the eChannel is citizens' and businesses' first choice, and whether Governments reach their User Satisfaction and Effectiveness targets. It is connected to the Efficiency & Effectiveness priority area.
- **User Centric Government** (or User Centricity) – as measured by a User survey. The next section will discuss differences stemming from the method of data collection.

Most top level benchmarks consist of multiple sub indicators, which in turn are measured by a number of questions regarding the quality or quantity of eGovernment services on a specific aspect. The answer to these questions comes from data collection. Sub indicators and questions will be discussed in relevant paragraphs of the next chapters.

2.1.2 Methods of data collection

Today, the Benchmark is built on two methods of data collection, which together can assess all top level indicators:

- **Mystery Shopping**: the use of Mystery Shoppers who are trained and briefed to observe, experience, and measure a (public service) process against a detailed, objective evaluation checklist by acting as a prospective user. Mystery shopping was the method of choice for the assessment of all top level benchmarks under review this year.
- **User survey**: an end user web-aided survey with approximately 27.000 completes for the EU28+. This method was primarily used for the assessment of priority areas which are not included in the 2014 measurement. Therefore, this year's report will not discuss results of the user survey in detail.

As illustrated above, the 2014 measurement only included one method of data collection for the ‘traditional’ eGovernment benchmark: Mystery Shopping. For each life event, persona descriptions have been developed which provide guidance to the shoppers when performing the assessment. They make the same choices as the fictional persona would. The purpose of Mystery Shopping within the context of the benchmarking framework is to detect whether online public service provision is organised around user’s needs.

For this purpose each researcher - Mystery Shopper - acts as a regular citizen and his ‘journey’ is time-boxed, i.e. each mystery shopper has one day to assess one life event. This implies that when a particular feature could not be found within reasonable time, it is answered negatively. This doesn’t per se mean the particular feature is not online available – it does mean that it apparently wasn’t easy to find, intuitively, without too many clicks and that it is very likely that regular citizens or entrepreneurs won’t use it or find it neither.

Mystery Shopping was, in principle, carried out by two native Mystery Shoppers from every participating country. Mystery shoppers usually assess their own country (which is necessary as many eGovernment services require electronic identification which is only available for country nationals). An exception is the assessment of the Cross Border Mobility top level benchmark. For Cross Border Mobility, all participation countries were assessed by two Mystery Shoppers from another country.

2.1.3 Domains: life events.

The benchmark concerns (e)Government as a whole, and therefore covers as much as possible of the landscape of public services by using life events. This measurement has selected a set of seven life events that cover the most common domains of public services, representative for both businesses and citizens. Associated with every life event is a customer journey that businesses or citizens experiencing this life event will go through.

The seven life events are:

- **Starting up a business and early trading operations;**
- **Regular business operations;**
- **Losing and finding a job;**
- **Moving;**
- **Starting a small claims procedure;**
- **Owning and driving a car;**
- **Studying.**

Each life event is measured once every two years. The two-year leap allows countries to follow up results and implement improvements after a measurement. This year (2014) allows for the first time to compare results with earlier measurement, providing insights into progress made in countries and in Europe on average. Figure 2.2 provides the overview.

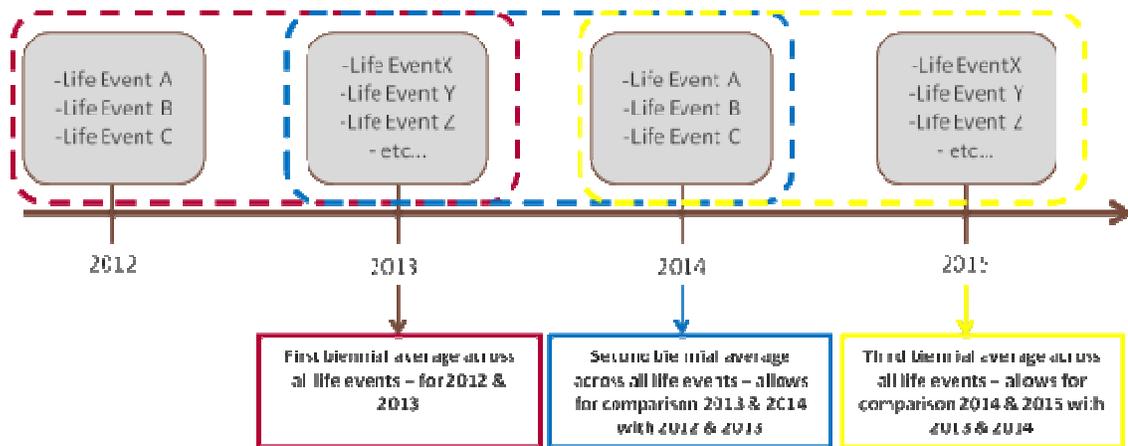
Figure 2.2: Overview of life events under assessment in 2012 - 2014

	2012 + 2014	2013
Business life events	Starting a business and early trading operations (Economic)	Regular business operations (Economic)
Citizen life events	Losing and finding a Job (Employment) Studying (Education)	Starting a small claims procedure (Justice)
		Moving (General administration)
		Owning and driving a car (Transport)

This year, the report presents the first comparison of results under the new framework, as three life events are evaluated for a second time. This provides insight into possible improvement within the specific life events, as

well as allow for tracking progress of the top-level benchmarks⁵. This concept of the ‘biennial rolling averages’ is illustrated in below figure.

Figure 2.3: Top-level benchmarks are composed of biennial averages



In chapter 3, this report will compare the rolling biennial averages of 2012/2013 with those of 2013/2014. The upside of these figures is they cover the broadest possible data set: all of government. Therefore, these figures are most representative in the absolute sense. For example, they allow for the statement that the Online Availability of services has reached 75% of its potential across all domains, not just the domains behind the recently measured life events. The downside is that figures are less representative in the relative sense. Comparisons over time are softened as half of the data is essentially identical. For example, Online Availability increased from 72% in 2012/2013 to 75% in 2013/2014, but the effect would have been larger had it not been for the fact that the 2013 data is present in both sets of data.

These limitations are only relevant to generic data (across life events) as presented chapter 3. Chapter 4-6 will discuss individual life events, comparing data from the 2012 assessment of these life events to the present measurement.

2.2 Benefits of the method

2.2.1 The customer journey as starting point for designing services

The main challenge still for many public administrations is to cross the borders of their own organisation. For that reason, the framework assesses public service delivery through evaluating life events instead of single services and by computing a set of indicators that allow better understanding and explaining how the government performs in a particular life event. A life event reflects the user journey and makes transparent which public institutions are involved in delivery of those services and information needs. This approach enables integration of different aspects of public service delivery (such as online availability of services, cross border mobility and key enablers) into a single, comprehensive measurement journey. It allows to measure performance from different perspectives and analyse which areas are key and most relevant to improve.

2.2.2 A variety of life events covering common domains

As eGovernment covers the complete landscape of public services, so should this benchmark study. This measurement has selected a set of seven life events that cover the most common public services. These are representative for both businesses and citizens, ensuring that a broad scope is possible and both important target group for public organisations are included in the assessment.

⁵ The concept of ‘biennial averages’ is duly explained in the Method Paper, p. 49.

2.2.3 The customer as evaluator of services

The assessment of life events is done by Mystery Shoppers. These are trained and briefed to observe, experience, and measure a (public service) process by acting as a prospective user.

2.2.4 National governments validate results

The method for this yearly exercise has been designed through an intense collaborative process with participating countries representatives. They are also involved in the measurement itself, for two reasons:

- At the start of the exercise, to validate the sample and key characteristics of the services under assessment; this ensures researchers visit the correct websites, informs them in case a certain service is not relevant/existing or delivered automatically (without the user having to do anything).
- At the closure of the exercise, to validate the research results in collaboration with the responsible organisations in a country and possibly correct obvious erroneous findings. There is one exception and that concerns the ease and Speed of Use assessment, which is a personal evaluation of the life event process by the researcher.

European Union and other participating countries continue to play a vital collaborative role in the measurement process. Not only through the above mentioned points, but also through workshops that drive learning, stimulate to share experiences and addressing policy recommendations to continuously improve. The continued active engagement in this learning process enhances the value that can be derived from this survey.

2.2.5 Coherent, integrated and aligned with European Commission policy goals

The measurement is aligned with policy priorities. The benchmark should measure those elements that are of relevance to the Commission and participating countries, in their aim to better serve citizens and businesses while reducing costs. The framework is structured around four main pillars of the eGovernment Action Plan 2011-2015: User Empowerment, Digital Single Market, Efficiency & Effectiveness and Preconditions. These priorities are required to achieve the wished for next generation of eGovernment services: better, cheaper and faster. The top-level benchmarks in this framework consist of several indicators, designed to correspond with those policy priorities, allowing analysing to what extent Europe is progressing on (elements of) these priorities.

The framework is flexible and open to innovation. Of course the measurement can't cover every priority and things change over time. The design of the Framework is flexible, and allows to add/modify indicators as priorities change and there is a need to focus on new policies or new categories of stakeholders. Since the top-level indicators are built with a bottom-up approach, the basic data can be assembled in different ways and it is possible to introduce new methods as already proven in the past years.

The framework moves from supply to demand side measurement. As eGovernment services are increasingly evolving around the users' needs – measuring the performance of those services should also evolve around users' needs. Hence the decision to include methods and indicators assessing eGovernment from the perspective of a regular user. This is reflected in the choice of running a citizen user survey, where representative panels of citizens in each country provided their views on among others use of online public services, satisfaction and perceived benefits and barriers. The choice to include Mystery Shopping as a method and a pilot on Sentiment analysis are also testimony to that.

The eGovernment benchmark framework consists in six top-level benchmarks, constructed around four policy priorities:

- The Top-level Benchmark on **User Centric Government** assesses the Availability and Usability of public eServices (as collected through life event assessment) and examines Awareness and Barriers to use so as to shed light on the apparent availability-usage gap (insights drawn from the demand-side user survey).
- The Top-level Benchmark on **Transparent Government** evaluates the Transparency of Government authorities' operations and service delivery procedures and the accessibility of personal data to users (the latter being one of the most frequently demanded eServices as the Action Plan points out). This Benchmark

leverages on the Open and Transparent Government Pilot conducted among a group of 10 participating countries during the course of 2010. Data is collected through life event assessment by Mystery Shoppers.

- The **Seamless Government** Benchmarks, for both **Citizens** and **Businesses**, measures the Availability and Usability of select high-impact cross border services. Data is collected through life event assessment by Mystery Shoppers.
- The Top-level Benchmark on **Effective Government** provides for Usage, User Satisfaction and Sentiment (i.e. perception) metrics. These indicate whether the eChannel is citizens' and businesses' first choice, and whether Governments reach their User Satisfaction and Effectiveness targets. Data for these indicators is collected through a demand side user survey.
- The **Smart Government** Top-level Benchmark assesses the availability of Key Enablers. Data is collected through life event assessment by mystery shoppers.

2.3 Towards a new model for monitoring eGovernment performance in Europe?

The European eGovernment Benchmark has deepened into online service evolution since 2001, at first by measuring basic service availability and sophistication, and since 2012 following the framework as described above. For over a decade it has supported policy makers, provoked valuable discussions, set new ambitions, and identified countries to learn from. However, with technology advancing at speed of light and rapidly changing the arena for eGovernment, there is a need to keep evaluating the measurement framework to keep it relevant.

Also, the adopted method is closely related to the eGovernment Action plan which ends in 2015. This year would also be the year that all life events have been measured twice, and possibly new focus is required to stimulate eGovernment developments. If Europe is heading towards a new generation of eGovernment services, it is important to understand and to measure the change in users' needs and how governments are actually exploiting the benefits of eGovernment.

This year's eGovernment benchmarking reports presents elements on top of the traditional eGovernment framework. These could provide the basis for a new model.

First, an analysis of the mobile friendliness of websites has been conducted to assess the extent to which governments are opening up their websites for users of mobile devices such as smart phones and tablets. This is an important element in user friendly eGovernment channels, as users should not be limited in the channels they use.

Second, the reports include a cluster analysis of countries' eGovernment maturity. A large amount of absolute indicators were clustered to be able to compare countries among the same defined performance. The cross analysis on these factors will produce relative performances of single countries (or clusters of countries) taking into account exogenous factors in order to interpret the performance assessment from holistic perspective. The ultimate goal is to identify and to suggest specific policies for each country in order to achieve its respective objectives in eGovernment.

3 Synthesis of top-level benchmarks

‘If Europe wants to lead this revolution, there is a need to accelerate the digital transformation of all industry sectors.’

Commissioner Günther Oettinger

10 March 2015 at Date Conference⁶

3.1 eGovernment services in various domains

In this report, eGovernment encompasses the complete area of customer facing digital activities by public organisations. Governments and other public actors alike have recognised the immense importance of providing eGovernment services. The last decade has witnessed significant uptake of eGovernment to the point that many of these services are now part of the everyday operations of public organisation. In that sense, customer facing eGovernment has followed the same path that the uptake of internally focussed ICT services have followed. These services are now considered to be of strategic importance to administrations.

That is not to say that the provision and adoption of eGovernment services have reached their final stage. They have not realised the full potential that today’s technology can offer. Previous versions of this benchmark showed the uptake of eGovernment in Europe has steadily progressed but is still very much incomplete. Further actions to realize this potential is needed, as well as further innovation to create new opportunities. Together, this can create better, faster and cheaper online services.

The European Commission and the participating countries share a clear ambition to build these improved services. In the eGovernment Action Plan⁷, these entities commit themselves measurable results in four domains. First, the administrations aim to empower end users (citizens and businesses) by providing user centric services. Second, governments want to use digital channels to create transparency, being open about service delivery, personal data and their own organisations. A third goal is to create the Digital Single Market, which requires digital public services across European borders free of technological barriers, administrative hassle or standardisation issues. Their fourth goal is provide more key technological enablers, thereby setting the right pre-conditions for eGovernment to flourish. Governments strive to pursue all four goals in an effective way, spending taxpayers money efficiently.

Our measurement of eGovernment services is closely aligned with these goals. As was outlined in chapter 2, the measurement covers top-level indicators corresponding to these four goals. We have assessed these indicators in a number of domains, always aiming to work from the viewpoint of citizens and businesses. Therefore, we have carried out an in-depth measurement for seven life events. These life events represent seven of the most important customer journeys citizens and businesses will come across when working with government. An example is the registration at a university and its courses when you start studying. The life events all cover both the need for information that citizens and businesses may have as well as mandatory interactions with government they should go through.

The measurement in this framework was carried out twice before, over 2012 and 2013. The 2012 measurement assessed the scores for three life events while the 2013 measurement assessed the other four. Now, we return the first three life events with the measurement over 2014. This means that for the first time since the introduction of the new benchmark framework, the progress over time can be analysed in detail. The three life events under review are Starting up a business, Losing and finding a job and Studying.

This chapter will present the synthesis results of the assessment, which means it will review the eGovernment goals across life events. Paragraph 4.2 will review differences between on a g that is across all life events. This high level analyses will be elaborated upon in the following paragraphs, respectively focussing on User Empowerment (paragraph 4.3), Transparency (4.4), Cross Border Mobility (4.5) and Key Enablers (4.6).

⁶ Full text at https://ec.europa.eu/commission/2014-2019/oettinger/announcements/speech-date-conference-digital-union-and-european-microelectronics-strategy_en

⁷ http://ec.europa.eu/information_society/activities/egovernment/action_plan_2011_2015/index_en.htm

3.2 Bird's eye view on eGovernment in Europe

The four main priority areas of the eGovernment Action Plan are shown in figure 3.1. Each of these priority areas was assessed by one or more top level benchmarks. Data for these benchmarks was collected over time. The top level benchmarks Effective Government and User Centricity (user survey) were measured once, in 2012. The results were presented in earlier benchmark reports and will not be discussed in this report.

Data on the other top level benchmarks, User Centricity (mystery shopping), Transparency, Citizen Mobility, Business Mobility and Key Enablers has been collected over three separate measurements, although every measurement only concerned half of the life events. The life events measured in 2012 have now been measured again, allowing for early comparisons over time.

Figure 3.1: Top-level benchmarks EU28+ 2012/2013 versus 2013/2014 (%)

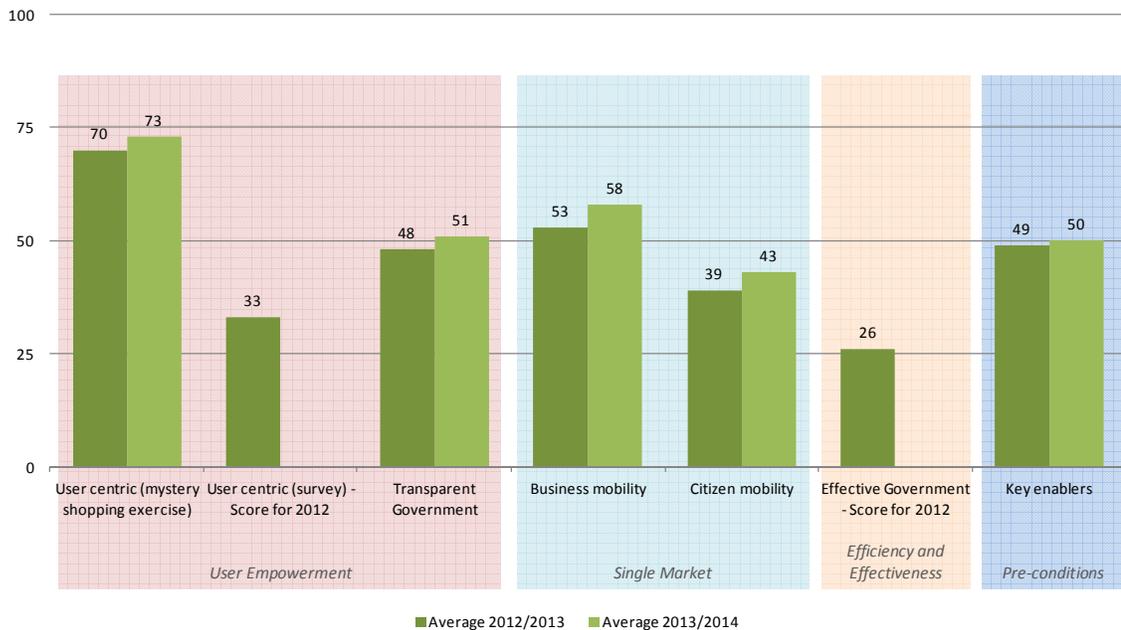


Figure 3.1 shows the results for all top level benchmarks. The top level benchmark with the highest score is User Centricity (mystery shopping), with a score of 73 out of a possible 100 points. This indicates that European eGovernment services are fairly well suited to users. By itself, this may not be enough to reach true user empowerment as Transparency, another important part of this policy priority area, is only at 51%. The top level benchmarks of Business Mobility and Citizen Mobility stand at 58% and 43% respectively, indicating that more work needs to be done to create a true Digital Single Market without barriers, especially when it comes to citizens. Key Enablers stands at 50 points, indicating that Europe is exactly half way when it comes to setting the right pre-conditions for innovative eGovernment.

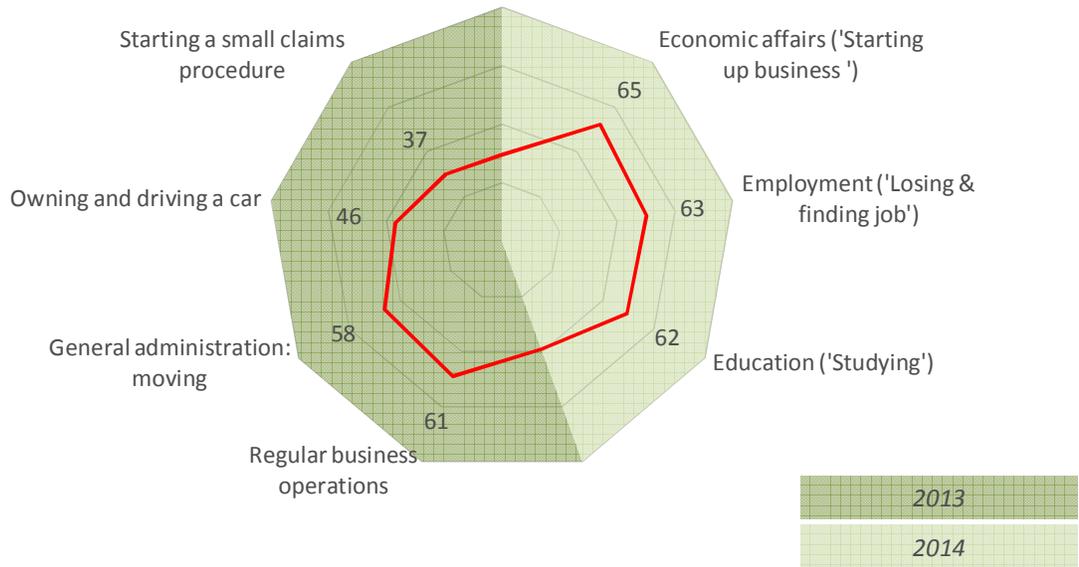
For the first time, results can be compared over time, comparing the data on life events measured in 2012 and 2013 to those measured in 2014 and 2013. Readers should note that any differences over time are softened by the fact that both sets of data include the life events of 2013, which have only been assessed once. This means that by definition the data sets are half identical so that large differences over time are not to be expected. Next year's measurement will further update the data, allowing 2012/2013–2014/2015 comparisons.

In this light, the advance in the Digital Single Market area is noteworthy. Both the Business Mobility and Citizens Mobility score have significantly increased over time, indicating that it is gradually becoming easier for eGovernment users to work across borders. Users are also somewhat more empowered with medium increases in User Centricity and Transparency. Progress regarding Key Enablers seems to be stagnating, with only a marginal gain in 2013/2014 compared to 2012/2013.

Figure 3.2 shows how the life events compare amongst each other, using aggregated scores with an average for all top-level benchmarks that have been assessed by mystery shopping. On average, European administrations provide the best eGovernment services to those who are Starting up a business (65%) followed by the life events

of Losing and finding a job (63%) and Studying (62%). These are all life events which have now been assessed for the second time. Services for all three life events have improved since they were first assessed in 2012, with Studying rising 8 points (up from 54%) and Starting up a business rising 5 points. Losing and finding a job witnessed the least progress, with its average score only rising 3 points since 2012. The two life events for business tend to score better than the citizen related life events, with Starting up a business and Regular business operations both at the top of their measurement set.

Figure 3.2: Aggregated EU28+ results per life event (%)



The following paragraphs will discuss in more detail how these aggregate scores came to be, focussing first on the top level benchmark indicator of User Centricity.

3.3 User Centricity

3.3.1 Overview of the indicator

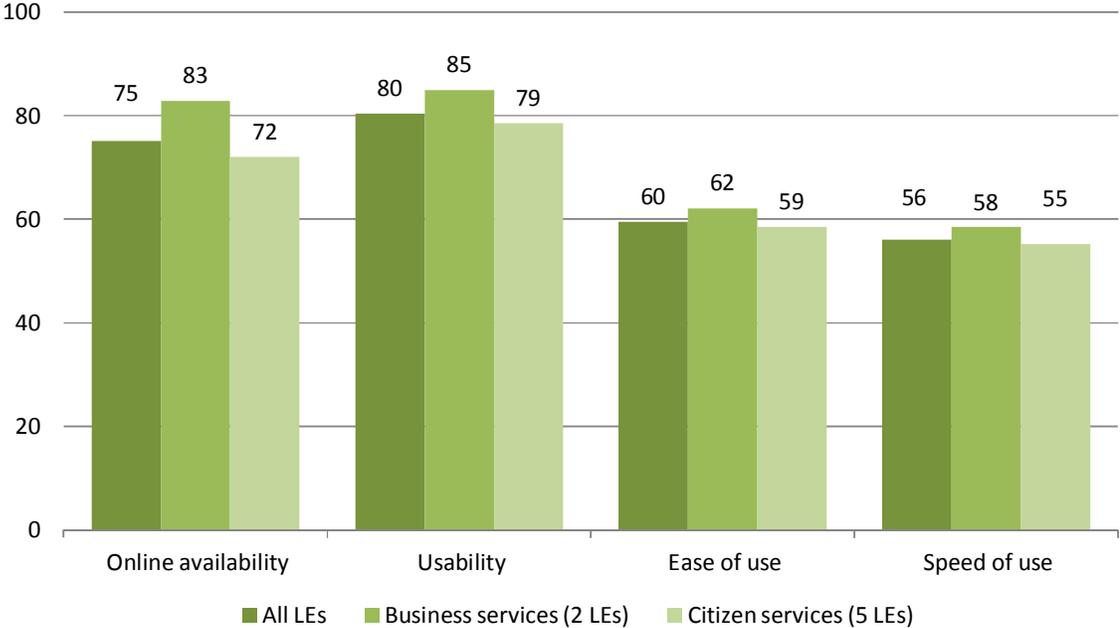
User Centricity is an important indicator, landscaping to what extent the expectations of users are met. To assess this top level benchmark, we take into account both the supply side (What is available online?) and demand side (What is the user experience online?) of eGovernment services. Both sides are assessed by two sub indicators for a total of four sub indicators:

- Online Availability: Regarding the supply side, are information and services available online?
- Usability: Regarding the supply side, are support, help and feedback functionalities available online?
- Ease of Use: Regarding the demand side, will users experience clear services that are easy to navigate?
- Speed of Use: Regarding the demand side, will users experience services that take little time to complete?

Together, these four sub indicators constitute the top level benchmark score for User Centricity as a whole.

Figure 3.3 below shows the User Centricity sub indicator scores for all life events (in their most recent measurement). The Online Availability score shows exactly three quarters (75%) of then information and services are available online up from 72% in the 2013 report. There is a significant gap between citizen oriented life events (72%) and business oriented life events (83%). The sub indicator scores for Usability are even better, with a score of 80% across life events (up 3 points compared to last year). This shows support functions are generally quite widely available⁸.

Figure 3.3: User Centricity by sub indicator; Online Availability, Usability, Ease of Use, Speed of Use (Across life events, EU28+, 2013/2014, %)⁹



The sub indicators Ease of Use and Speed of Use attain distinctly lower scores at 65% and 61% respectively. This is in line with earlier findings, suggesting that many services are brought online by European governments while insufficient attention has been spent on the quality of the user experience.

Alarming, the Ease of Use and Speed of Use scores have hardly improved since 2013, while Online Availability scores have, suggesting that the trend of ‘quantity over quality’ is getting stronger. When it comes to these user experience sub indicators, the differences between citizens and businesses are not too large, suggesting that while there are significantly more information and services available to businesses, the quality of these does not differ much from citizen oriented eGovernment.

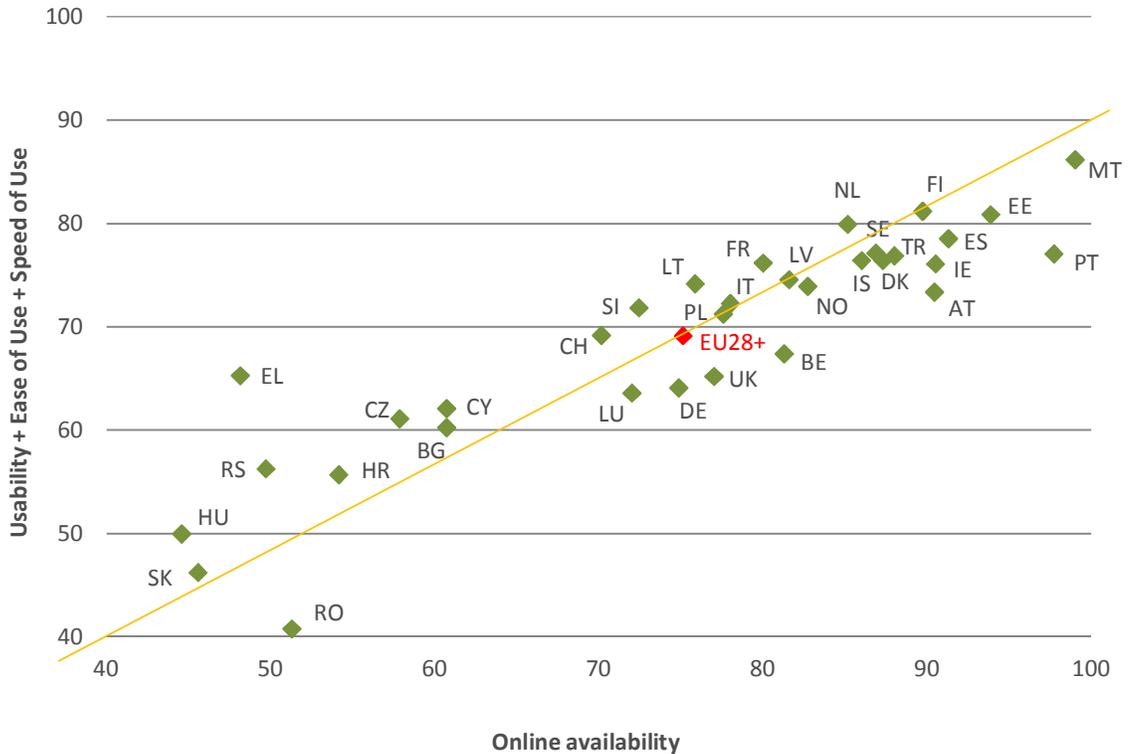
⁸ The suggestion that there more support functions than actual information/services are available online may seem confusing. In fact, the Online Availability indicator landscapes both information and services. Often, mandatory service themselves are not offered online although there is some information (causing a low Online Availability score). If websites providing this information offer good support, there can still be a high Usability score.

⁹ A list of acronyms for the participation countries is included in the Appendix as Annex IV

3.3.2 Quality versus quantity

The trend of 'quantity over quality' holds up for most individual countries. Figure 3.4 reveals that most countries attain higher scores for Online Availability than for (the average of) the three other sub indicators. Just like last year, twenty-five out of thirty-three countries are right of the 45 degree line, indicating they follow this trend to some degree. The EU28+ average score for Online Availability is 75%, and for Usability, Ease of Use and Speed of Use combined is 69%, a 6 point gap which is up 1 point compared to last year. Belgium, Austria and Portugal are clear examples of this trend. Greece is a notable exception, with a clearly better score for Usability, Ease of Use and Speed of Use than for Online Availability (a gap of 17 points in favour of the latter).

Figure 3.4: Online Availability versus other User Centricity indicators by country (2013/2014,%)



3.3.3 Citizens versus businesses

Figures 3.2 and 3.3 suggested that eGovernment in Europe is more user centric when it comes to businesses than when it comes to citizens. Figure 3.5 shows the balance between business-oriented life events and citizen-oriented life events for individual countries. The figure also shows the average across all life events in numbers.

Figure 3.5: User Centricity for citizen and business life events by country (2013/2014, %)

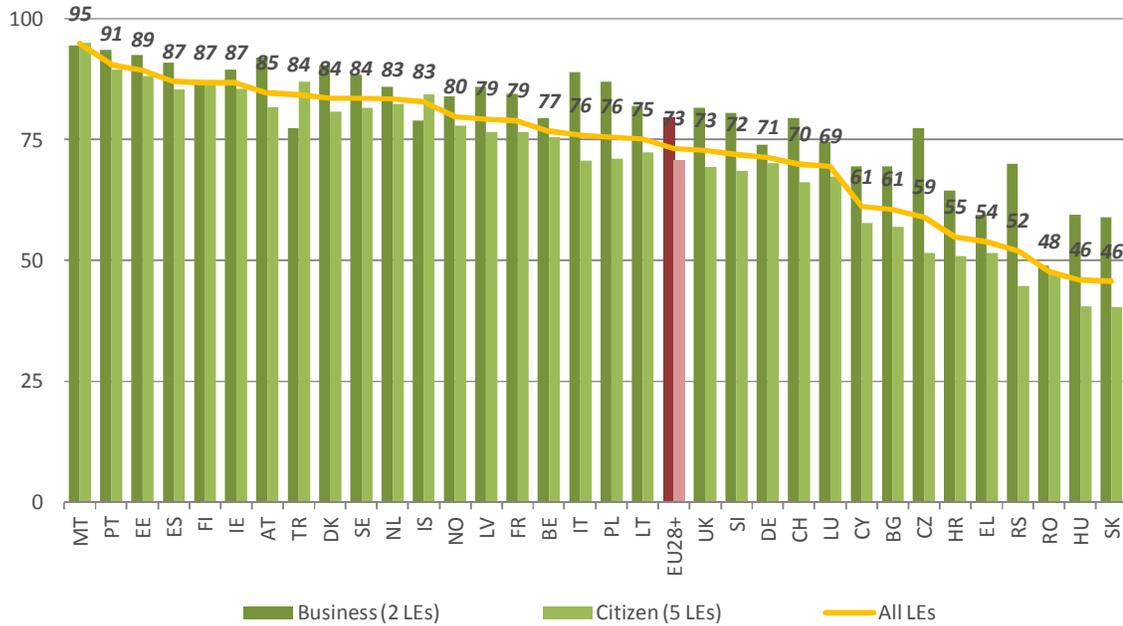


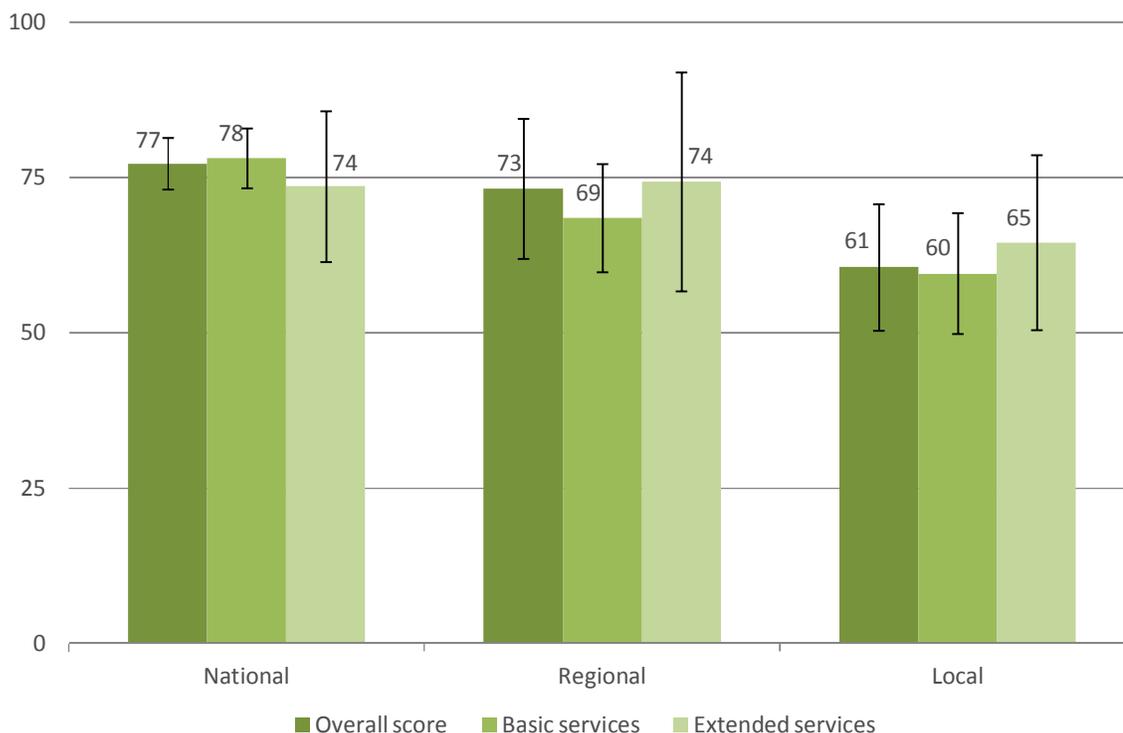
Figure 3.5 confirms the view that User Centricity is currently higher for businesses than for citizens. Twenty-nine out of thirty-one countries have a higher average for the two business oriented life events than for the average of the five citizen related life events. The two are separated by 9 points on average. The gap is most profound in Serbia, with a 25 point gap. Turkey and to a lesser extent Iceland are exceptions; these countries provide more user centric services to citizens than they do to businesses. Malta has the highest User Centricity score for both types of life events, attaining 94,5% for businesses and 95% for citizens.

The figure only shows the 2013/2014 scores, but the progress of countries over time can be interesting as well. Luxembourg, Germany and Latvia made the biggest gains between 2012/2013 and 2013/2014, with their scores rising 8, 6 and 6 points respectively. Other countries had less spectacular progress but all saw at least some gains.

3.3.4 National versus local levels of government

eGovernment services are not only provided by the national government (e.g. ministries), but by regional and local governments as well. Figure 3.6 below shows to what extent the different layers of government can provide online information and services. As the number of data points for some combinations of types of services and government levels can be somewhat low, confidence intervals are shown as well, displaying the 95% level.

Figure 3.6: Online Availability per government level by type of services, showing the 95% confidence interval (all life events, 2013/2014, EU28+, %)



National governments provide more services online than local governments do. There is a gap 16 points to services provided by local government¹⁰. Regional governments are on a middle ground with a somewhat lower score than national governments but a higher score than the local level. Compared to last year, the gap between national and regional governments has narrowed, suggesting that for Europe, regional governments have brought services online more rapidly than their counterparts at the national level. Local governments however have not caught up since last year.

The reasons for these trends are difficult to pinpoint because the European countries all have different government structures. The group of regional level governments is especially diverse as the 'regional' government level for federal states is fundamentally different from the regional government level for unitary states. In general, national governments may have more resources and but this is not always the case. This benchmark has repeatedly showed that small administrations are not necessarily at a disadvantage but circumstances will differ from country to country.

For eGovernment at a national level, Online Availability scores are better for basic (transactional) services than they are for extended services. This is not mirrored by regional and local governments. There is no direct explanation for this finding, but as the figure shows, the confidence interval for extended regional and local services is quite wide, suggesting that the relatively low number of data points might be influenced by outliers.

¹⁰ The actual effect may be slightly overstated here because a number of countries leading in Online Availability, such as Malta, have only one layer of government (in effect the national layer).

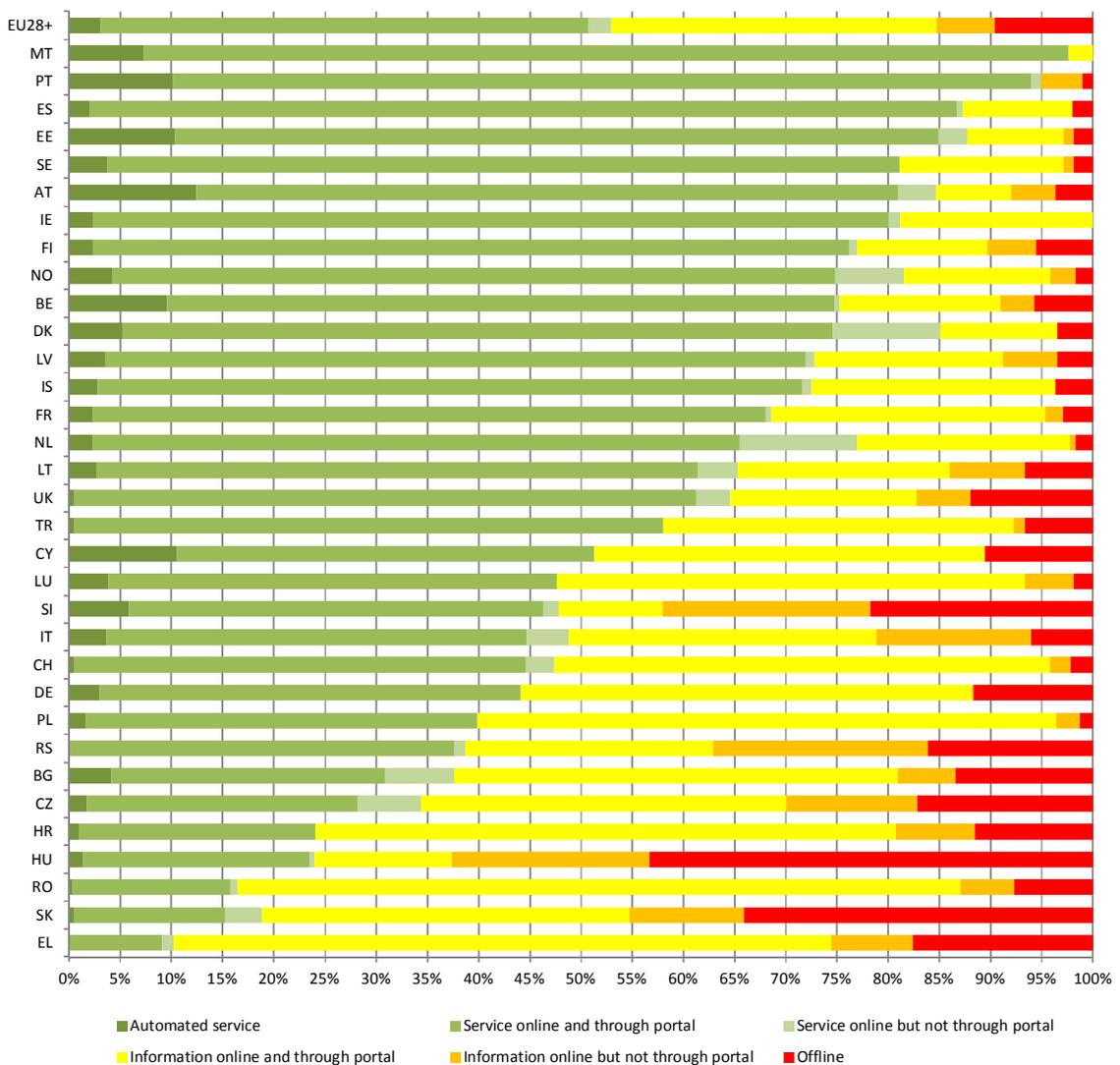
3.3.5 Availability across journeys

As was outlined in earlier paragraphs, Online Availability scores indicate the ‘quantity’ part of eGovernment services: how much information/services is provided online? Within life events, this sub indicator can be used to assess to what extent the customer journey of users going through these life events are fully provided online.

Figure 3.7 below shows an overview by country, with the EU28+ average being the top bar. The figure reveals:

- What percentage of all services under assessment is automated, in dark green;
- What percentage of all services under assessment is provided fully online (and whether or not these are accessible via a portal), in light green (via a portal) or blue (not via a portal);
- What percentage of services under assessment only has information about the service online (and whether this is accessible via a portal), in yellow (via a portal) or orange (not via a portal);
- What percentage of services under assessment is not provided at all via eGovernment, i.e. offline, in red.

Figure 3.7: How services are made available by country (across life events, 2013/2014, EU28+, %)



For Europe as a whole, 48% of all services are completely online and available through a portal. These are represented by the light green bar. This is a significant increase compared to last year’s measurement, up 6 points, especially when considering that half of the data on life events has not been renewed as of yet. A further 2% are completely online but cannot be found via a portal. These are represented by the blue bar.

There is also a share of government interactions which are supported online by information, but not by the actual service itself. These are represented by the yellow (when information is accessible via a portal) and orange (when it is not) bars. Together, these constitute 37,5% of all European eGovernment interactions, which is 5 points down compared to last years' measurement. This indicates that Europe is slowly bringing more actual services online. Still, 37,5% is a sizeable component considering the fact that all of these services *could* be provided fully online but still is not.

Across Europe, 9,5% of all interactions are completely offline, i.e. not supported by eGovernment. Notably, this is virtually no progress compared to last years' measurement. Almost no country succeeded in reducing the number of completely unsupported interactions¹¹. Interestingly, there was much more progress in setting up complete interactions than there was in 'just' providing information via the online channels.

As regards the use of portals, Europe has traditionally been strong in setting up portals which linked users to these services. Only 2,3% of all actual services and 5,7% of all information is not accessible via a portal. The last year has witnessed little further progress as these shares are not significantly down from last years' measurement.

When looking at individual countries, Malta and Portugal are leading examples, respectively providing 97% and 94% of all services either automated or fully online. Compared to last year, Latvia and Luxembourg have made most progress, both providing many more services fully online. Greece provides the lowest number of services fully online while Hungary has the most interactions completely offline. Romania is noteworthy for providing information, but not the service itself via the online channels, as over 75% of all Romanian interaction are in this category. When it comes to the use of portals, Cyprus is noteworthy as portals link to all of its interactions, while Slovenia and Serbia have 22% of their services and interactions not accessible via a portal.

3.3.6 Automated services

Figure 3.7 also indicates how many services are provided automatically, meaning that the user does not have to interact (separately for a specific service) with government. In effect, the user will not have to do anything to receive the service. For instance, in the Netherlands after registering their company at the Companies Registration Office (in Netherlands part of the Chambers of Commerce), the entrepreneurs automatically receives their VAT number from the Tax Agency. Cross-agency collaboration is often needed to provide these automated services, but benefits are large for both the users and the internal efficiency of public organisations involved.

The new measurement indicates that 3% of all services in Europe are now automated. This is a small percentage which has not increased at all compared to last year, suggesting that government agencies are still working in silos – whether that be within separate domains or a specific government tier. Governments do not seem to be making much progress in this regard. Leading European countries are Austria, Estonia and Portugal (with respectively 12, 10 and 10 % of services delivered automatically) and from this year also Cyprus, where 11% of the eGovernment services are now marked as automated.

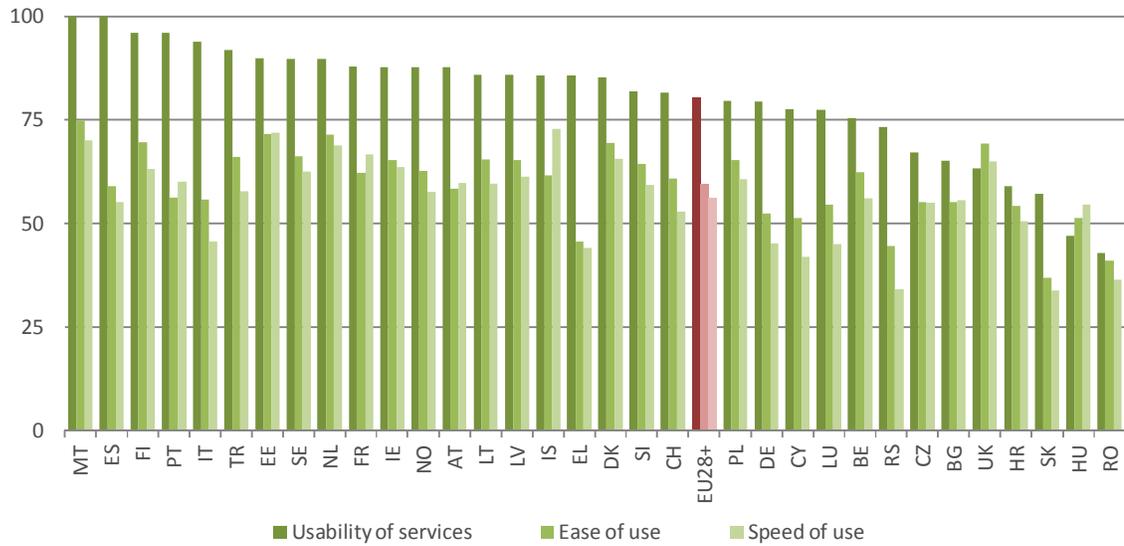
3.3.7 Quality of User Centric eGovernment services

While *Online Availability* marks the quantity of eGovernment services, the other three sub indicators *Usability*, *Ease of Use* and *Speed of Use* tend to landscape the quality of these. The former indicator assesses the availability of support functions while the other two assess the user experience. Figure 3.8 below shows how countries score on these three sub indicators.

As becomes clear from this figure, the (quantity) of help functionalities attains higher scores in most countries than Ease of Use and Speed of Use. This is in line with the finding of 'quantity over quality' which was discussed in paragraph 3.3.2. Two exceptions are the United Kingdom and Hungary. Overall, Malta scores well on all three sub indicators. Other good practices are Portugal for Usability, the Netherlands for Ease of Use, Iceland for Speed of Use and Estonia for both user experience sub indicators.

¹¹ Serbia saw the share of offline services decrease dramatically, but is an exceptional case as it was not assessed in 2012, so that the 3 life events in this measurement were now assessed for the first time, creating many new data points.

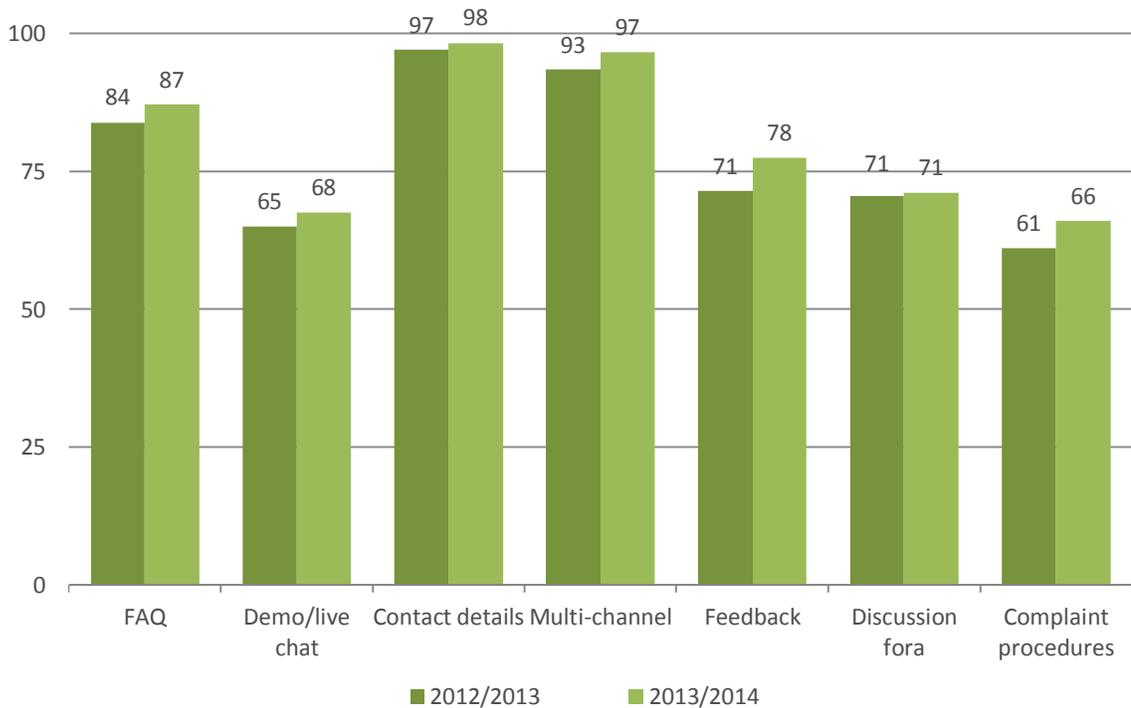
Figure 3.8: Usability, Ease of Use and Speed of Use average across Life Events by country (2013/2014, %)



3.3.8 Usability: Support, help and feedback

Zooming in, there are multiple way public organisations can improve the (sub indicators score of) Usability in online services. Figure 3.9 shows by possible function how administrations provide support, help and feedback functionalities, comparing last years' measurement to the measurement for this year.

Figure 3.9: Usability scores per question across life events 2013 vs 2014 (EU28+, %)



Almost all services provide contact details, useful to contact the public administration. As these details often allow users to contact the government through other channels (by phone for instance), the multi-channel questions is high as well. On both questions in the measurement, Europe scores close to the maximum score of 100%.

When it comes to support, public administrations mostly provide often FAQ sections. These are provided in 87% of the cases. There is a small increase in innovative solutions such as online demo's and live chat being offered as

well, up 3 points to 68% of all interactions. Governments have traditionally provided basic possibilities for feedback, to a point where users can now find feedback procedures in 78% of the cases under review in the 2013/2014 set of data. This is the biggest increase of all questions, up 7 points compared to the 2012/2013 set, indicating that feedback mechanisms are being considered as more important. Many governments tend to provide forums as well. However, formal complaint procedures are less often available. The availability of complaint procedures has increased but still only stands at 66%.

3.4 Transparency to build trust and increase accountability

Transparency is an important concept for European governments. It is a key element within the policy priority area of user empowerment. When applying transparency to the online channels, it can come in many forms. Transparency about the interactions, the use of personal data helps and the public organisation as a whole can help build the trust of citizens. At the same time, these forms of transparency will drive a sense of accountability as regards to policy makers. Trust and accountability are vital for any government that wants to increasingly use technology to improve remote public service provision and its own internal organisation.

3.4.1 Overview of the Benchmark

In this benchmark we have looked at three elements, which are sub indicators for the top level benchmark of Transparency:

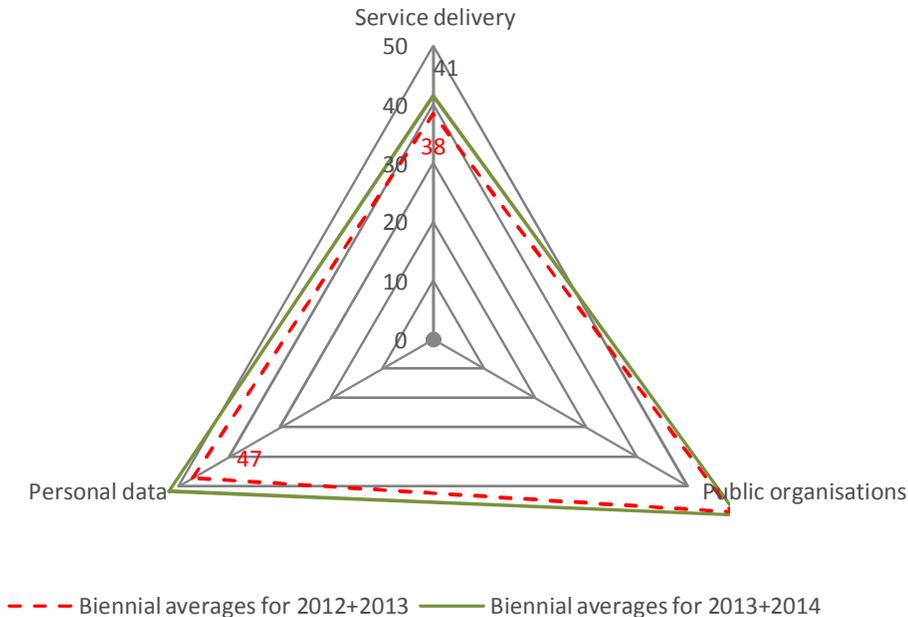
Transparency of Service Delivery: specifically assesses the extent to which public administrations inform citizens about the administrative process they have entered, i.e. from the citizens' request for a service until the service provision. Being transparent about how the service will be delivered means that citizens and entrepreneurs can set expectations on time, process and delivery. It allows them to plan for their iterations with government when convenient – instead of being highly dependent on an administration's whims.

Transparency of Public Organisations: means that Governments publish information about themselves (e.g. finance, organisational structure and responsibilities), and what they do (the decision-making processes, regulations, laws). It should enable citizens to anticipate and respond to Government decisions that affect them and hold policy makers responsible for their decisions and performance. It increases policy makers' accountability and fiscal responsibility, and decreases the risk of fraud and corruption – still a hot topic on the European agenda.

Transparency of Personal Data: implies that Governments proactively inform citizens about their personal data and how, when and by whom it is being processed. Citizens want easy, electronic access to their personal data. It increases the legitimacy and security of data processing and it improves the quality and accuracy of the personal data stored. This in turn increases citizens' trust in Government. Transparency of personal data is largely driven by legislation. Most national Governments have legislation on how to deal with personal data in place and there has been an EU Directive since 1995 (the *European Data Protection Directive* 95/46/EC37).

Figure 3.10 provides an overview of the Transparency sub indicators scores, all life events and European countries taken together. All three sub indicators attain comparatively low scores, none of them attaining more than two thirds of the available points.

Figure 3.10: Transparency per sub indicator across life events 2012/2013 vs 2013/2014 (EU28+, %)

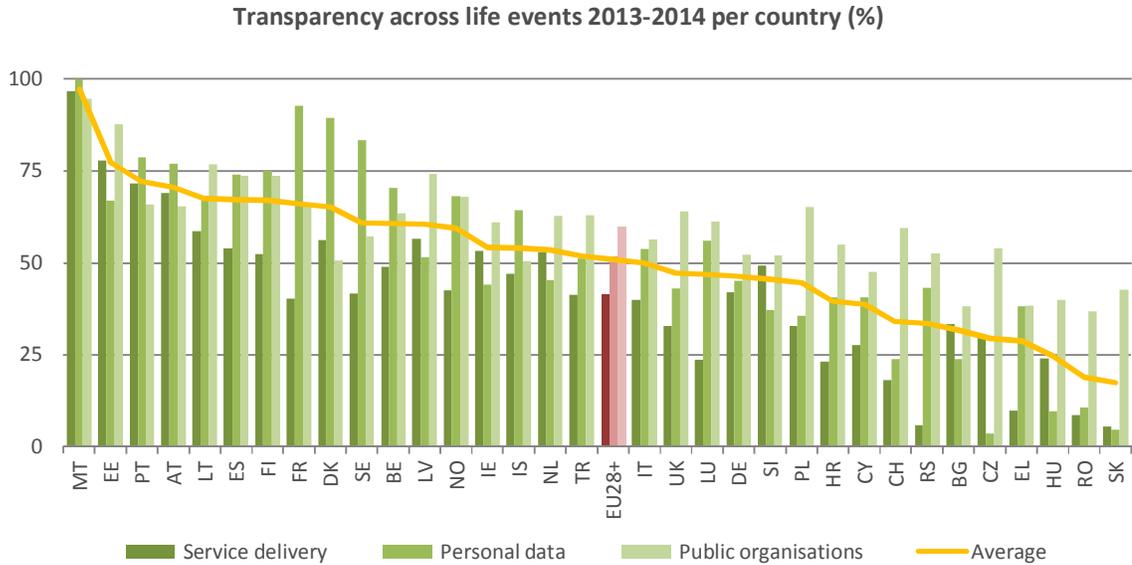


The sub indicator is Transparency for Public Organisations scores 60%. This is the highest ranking sub indicator for Transparency. However, it also displays the least progress, scoring only 1 point better than during last years’ measurement. Transparency on Personal Data has improved significantly over the last year, now scoring 52, up 5 points. Transparency on Service Delivery achieves the unsatisfactory score of 41%, 3 points up compared to the 2013 measurement.

The relatively low European averages for the three elements of transparency indicate that transparency is currently not on the top of the participating countries agenda. Transparency is not stimulated to the same extent as other top level benchmarks, as no quantitative targets have been set by Europe yet.

Zooming in from the European averages to the country level, figure 3.11 shows how individual countries rank on the three sub indicators an on the (average) Transparency top level benchmark, with the EU28+ average marked in red.

Figure 3.11: Transparency across life events by indicator per country (2013/2014, %)



Maltese eGovernment services are leading the chart for transparency. For transparency on service delivery, other good performers are Estonia and Portugal. France and show good practice for transparency on personal data. Estonia and Lithuania are best performers on transparency on public organisations.. Many countries excel on one of the sub indicators but score markedly fewer points on the others. The Czech Republic for example is in the last quartile on average, but has an above average score for transparency on public organisations, while Denmark in reverse is in the top quartile but below the European average on this same sub indicator. This variance within countries indicates that transparency is currently not being handled by governments in a coordinated matter.

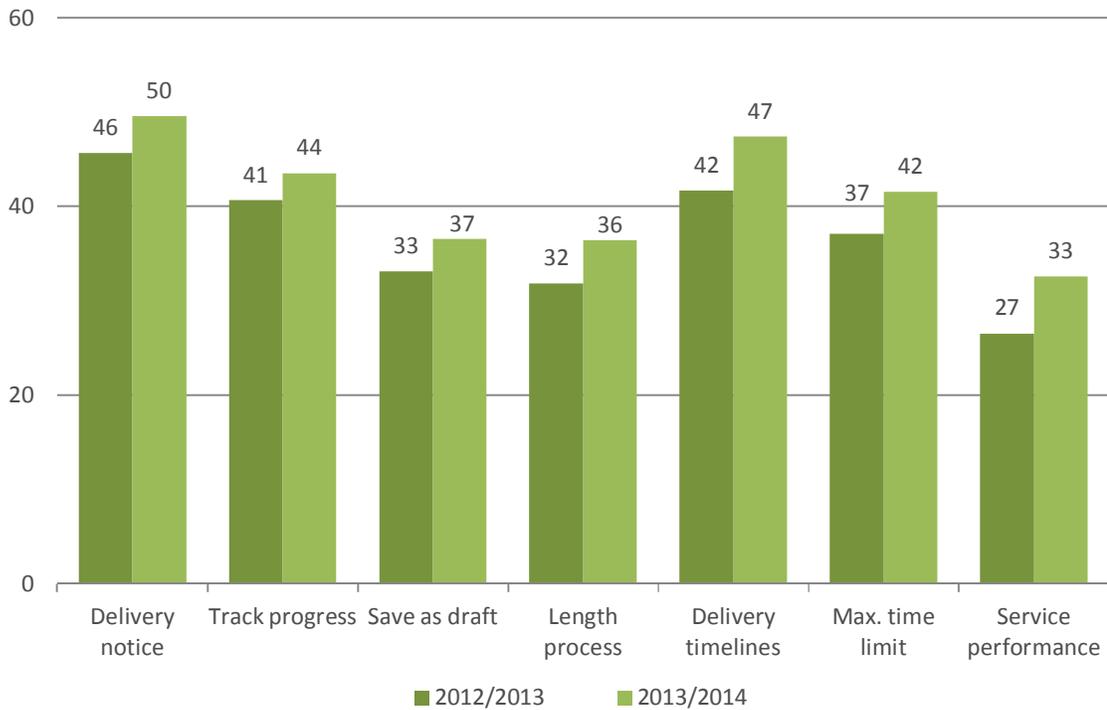
While the EU28+ has seen only modest progress on average, some individual European countries have made great progress. Germany’s scores has increased by 16 points. This German leap forward was driven by great progress on transparency on personal data, which increased by 27 points¹². Other countries which saw their score rise were Luxembourg (up 11 punts) and Belgium (up 10 points). On the other hand, eighteen countries saw their score increase by under 2 points

¹² This is all the more impressive given the fact that the concept of biennial averages softens any big leaps in score because half of the data is identical.

3.4.2 Service delivery

Underlying the Service delivery sub indicator, are seven questions, each representing one aspect of transparency on service delivery. These questions have been answered for all countries, for all steps of all life events. Figure 3.12 shows the European average scores on these questions.

Figure 3.12: Transparency of Service delivery across life events per question (2012/2013 vs 2013/2014, EU28+, %)



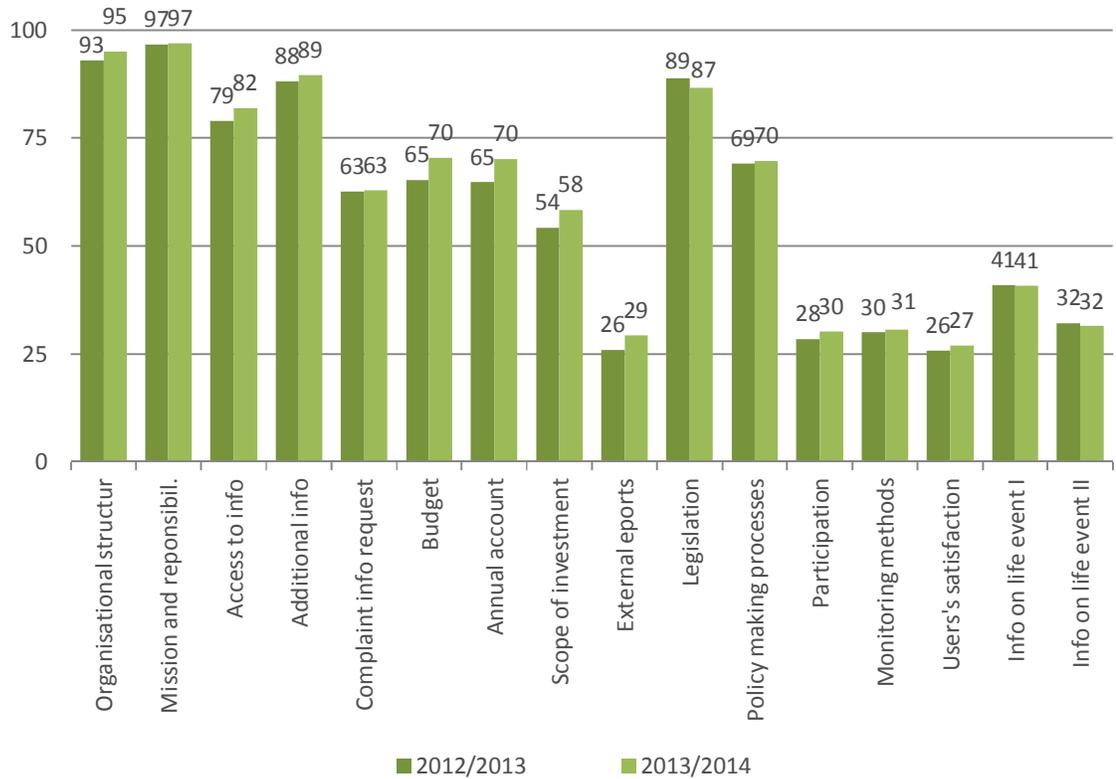
As the above figure highlights, Europe has seen clear progress over the last year. For all aspects of transparent service delivery, the 2012/2013 scores are clearly above the 2013/2014 scores. Most progress has been made with regards to information on service performance, although the score remains low in absolute terms.

Despite this progress, many transparency features are still not available in the majority of cases. Only Delivery notifications reached the 50% mark, meaning that users received a message confirming that the public administration had received their inputs in exactly half of all applicable cases. This is 4 points more than in 2012/2013. Users can also save work as a draft more often, which is important especially when filing extensive or complex information.

3.4.3 Public organisations

Underlying the Public Organisations delivery sub indicator, are sixteen questions, each representing one aspect of transparency on the policy and operations of public organisations. Figure 3.13 shows the European average scores on these questions for the 2012/2013 and the 2013/2014 measurements.

Figure 3.13: Transparency of Public organisations per question across life events (2013 vs 2014, EU28+, %)



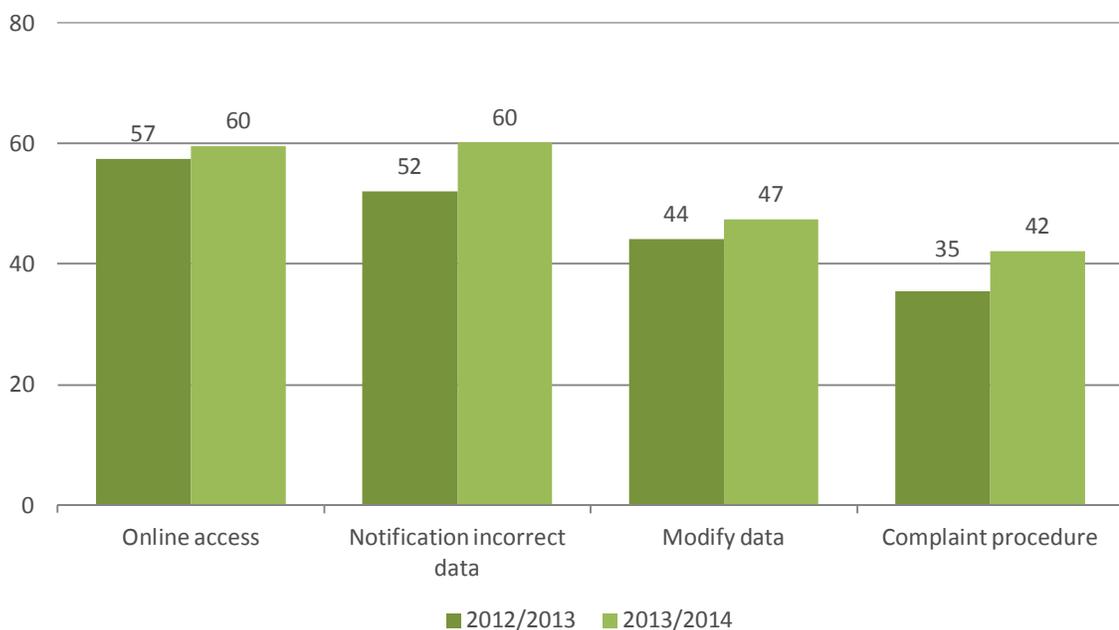
Some progress has been made since last measurement, but the progress is scattered in effect and magnitude. The life events of Starting a business, Losing & finding a job and Studying provide new data. The public organisations responsible for these life events have most progress in financial transparency: both transparency on the budget and transparency on the annual account have increased 5 points. Transparency on applicable legislation, on the other hand, has decreased.

What is clear from this data is that European public organisations still tend to report qualitative information (such as their organisational structure and their mission) much more often than quantitative data. The former type of data is a first step towards transparency, but true transparency will require more effort. There are low scores on questions regarding the opinion of end users and other externals (e.g. auditors). This suggests that governments will only be transparent if they can control the information themselves. Many governments stay away from presenting what others think of them. There is still little attention for monitoring how users and other external evaluate the performance of the public administration.

3.4.4 Personal data

The eGovernment Action Plan states that: '[...] new technologies and services allowing users to trace their personal data stored by public administrations, [...] are featuring amongst the most demanded eGovernment services'. Figure 3.14 shows the four aspects (each measured by one question) of transparency on personal data.

Figure 3.14: Transparency of Personal data per question across life events (2013 vs 2014, EU28+, %)



Europe has made substantial progress with regards to personal data. Especially the 8 point increase in the ability to notify government about incorrect personal data is a significant gain.¹³ The continent is in a better shape when handling personal data than it was one year ago.

However, the 'front end' of personal data is much more transparent than the 'back side'; often, users can view personal data but cannot modify it by themselves. Users can modify their personal data under half of the time. More often, they will need to notify the public administration that they've found the data on themselves to be incorrect, so that the administration can correct it. Governments are increasingly setting up specific formal complaint procedures on how they handle personal data. However, despite the attention for privacy issues in Europe, these procedures are still not available in a majority of the cases.

3.5 Cross Border Mobility: increasing mobility of citizens and businesses

In the domain of eGovernment, the concept of a Europe without border meets the concept of an Internet without borders. The European Commission has recognised the Digital Single Market as an absolutely essential part of the Digital Single Market and as a goal worth pursuing even by itself. Vice President Ansip has articulated a vision for 'a digital area: where goods, people, services and capital can move freely; where everyone can access and carry out online activities, across borders and with complete ease, safely and securely; where there is fair competition, regardless of nationality or place of residence, underpinned by a clear legal structure'.¹⁴

Mobility for businesses implies seamless services, without any burdensome procedures when crossing borders within the EU. This means mobility for citizens to ensure that one can work, live, retire and study in any European country, without the extra bureaucracy that is often needed.

¹³ As this is a comparison of the 2012/2013 set of data with the 2013/2014 set of data, half of the data points are essentially identical. This makes the 8 point increase even more noteworthy.

¹⁴ 20 January 2015 at a debate organised by the European Internet Foundation, see http://europa.eu/rapid/press-release_SPEECH-15-3542_en.htm

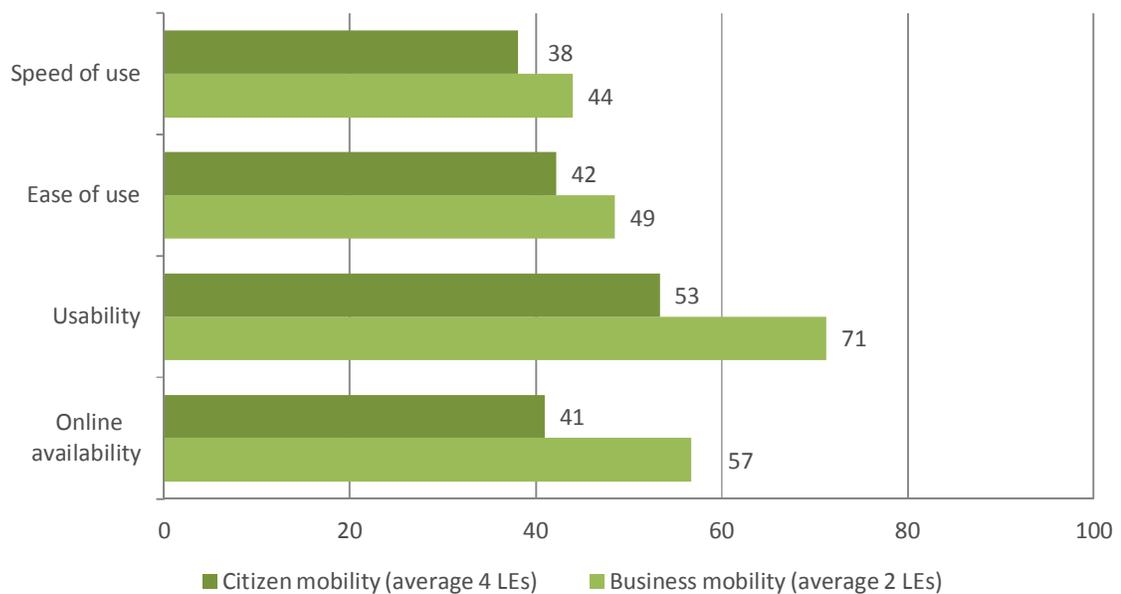
The life event Losing and finding a job is not applicable for this top level benchmark, as governments only support this life event for their own nationals.

3.5.1 Overview of the benchmark

The top level benchmark for the Digital Single Market effectively measures how well eGovernment supports *Cross Border Mobility*. It is measured in the same way as User Centricity (see paragraph 3.3), using the same set of sub indicators. This time however, the user at the centre is a user from another participating European country. Examining the User Centricity for this group of users can lead to distinctly other results than the measurement focussed at national users.

Figure 3.15 below shows the results for the four sub indicators, while differentiating between life events (with corresponding services) focussed on foreign businesses and life events focussed on foreign citizens.

Figure 3.15: Cross Border Mobility indicators for citizen and business life events; Online Availability, Usability, Ease of Use, Speed of Use (2013/2014, EU28+, %)



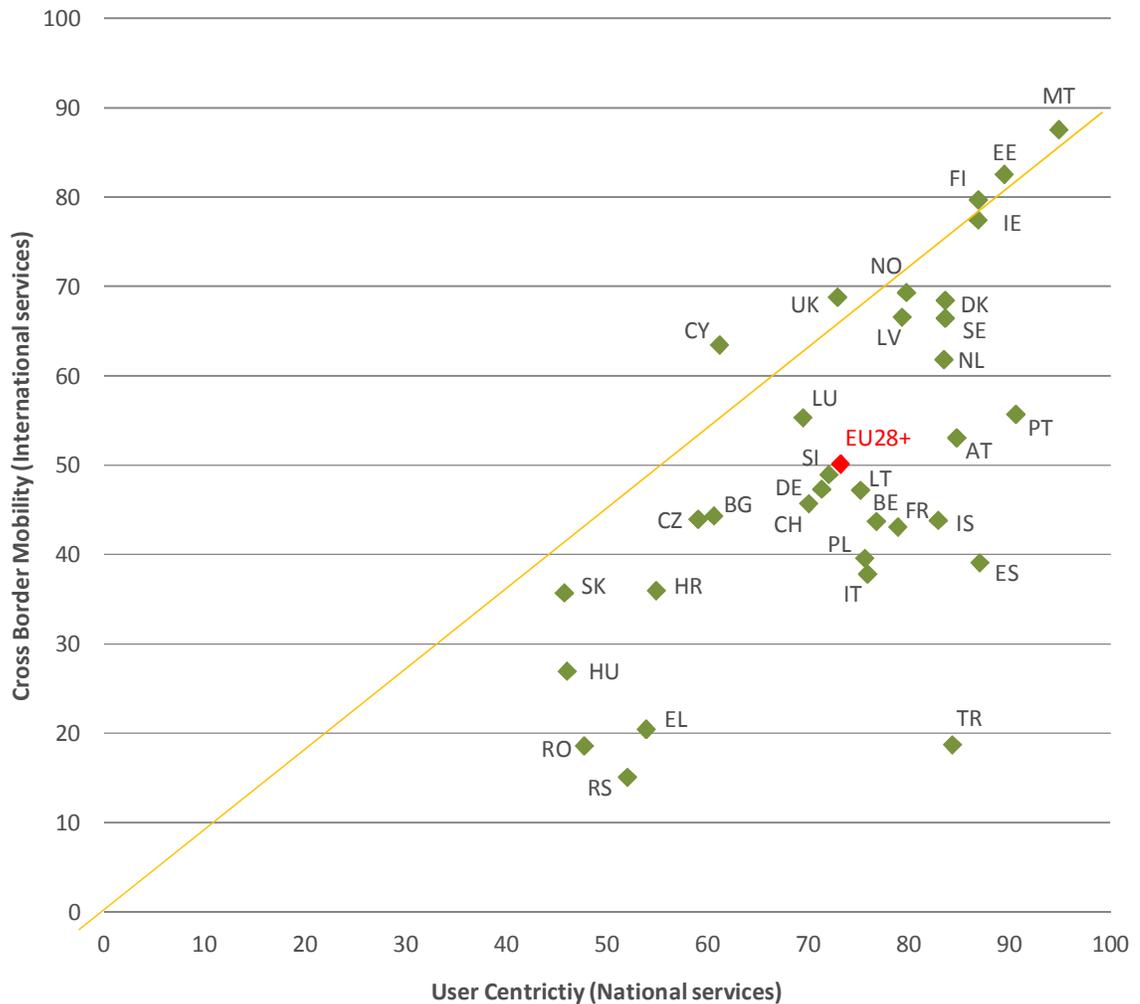
The ‘quantity over quality’ gap is not as large for foreign users (connecting cross border to the online services) than it is for domestic ones. This is primarily caused by the ‘quantity’ part of the equation as number of services available to foreign users is much smaller than for domestic users. Only 57% of all assessed services are available to cross border businesses and only 41% are available to cross border citizens. This is not yet a satisfactory score. Language issues are an important barrier, as are issues using foreign identification mechanisms. Ease of Use and Speed of Use do not attain high scores, but the gap to the User Centricity scores for country nationals is not as big as it is for Online Availability.

When comparing business to citizens, the business related life events attain higher scores on all sub indicators. The gap is especially big when it comes to the number of services provided: there is a 16-point gap between citizens and businesses in the information and services provided. The gap on support functionalities is even 18 points. Cross border businesses are better supported online, as business information is more often provided in foreign languages.

Comparing the 2013/2014 data to the 2012/2013 findings (not visible in the figure), the Ease of Use and Speed of Use sub indicators have not seen any progress over the last year. All indicators have exactly the same score as last year. This suggests what that European governments could not improve the experience for users from other countries. While quality has not improved, quantity has. Usability has improved 3 and 6 points for citizens and business respectively, while Online Availability has improved 5 points for both groups of life events.

Figure 3.16 zooms in at the country level, comparing the (national) User Centricity scores to the Cross Border Mobility scores. Effectively, this figure shows which countries are most focussed on supporting users from other European countries.

Figure 3.16: National User Centricity versus Cross Border Mobility by country (2013/2014, across life events, %)



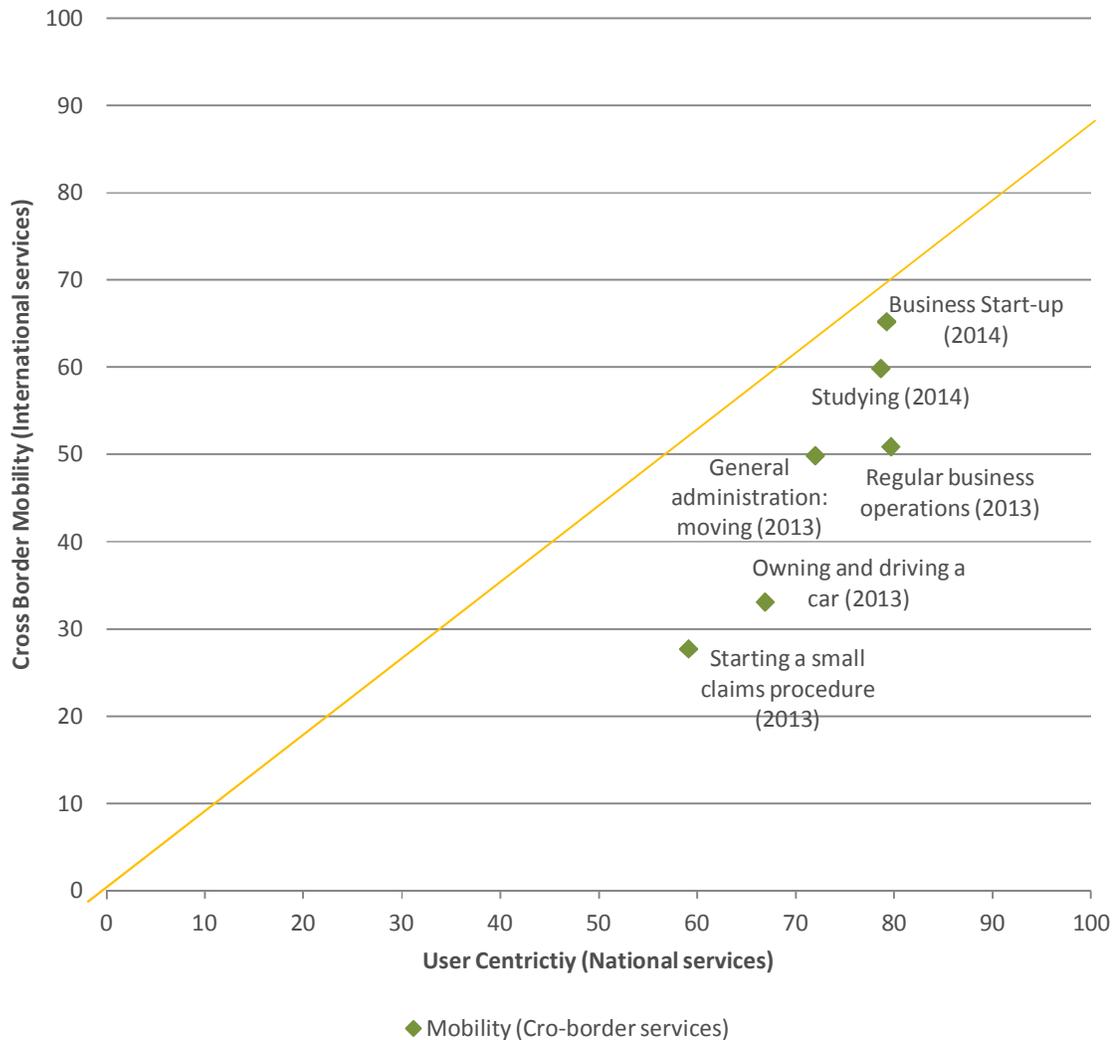
Almost all countries attain higher scores for User Centricity than for Cross Border Mobility, indicating (perhaps unsurprisingly) that eGovernment services are more suited to domestic users than to foreign ones. Cyprus is an exception, being the sole country left of the 45-degree line. This indicates that Cypriot eGovernment services are as user centric to foreigners than they are for Cypriots. Other English speaking countries such as the UK, Ireland and Malta also show little difference between User Centricity and Cross Border Mobility. They profit from the fact that their native language is also an internationally used lingua franca, so that language barriers are not an issue for these countries.

Many other European countries are reasonably close to the 45-degree line, indicating that many public organisations try to make their eGovernment open to users from other countries but do not really succeed yet. Countries closer to the bottom-left part of the graph often struggle to provide eGovernment to their own citizens, let alone foreign ones. The most nationally oriented eGovernment services are provided by Turkey.

3.5.2 Cross border mobility by life event

Figure 3.15 already showed that business-oriented life events attain higher Cross Border Mobility scores than citizen-oriented life events. Figure 3.17 below zooms in on individual life events, comparing their (national) User Centricity scores to the (cross border) Cross Border Mobility scores.

Figure 3.17: National User Centricity versus Cross Border Mobility scores by Life Event (2013/2014, EU28+, %)



For all life events, services are more user friendly to nationals, but the life event Starting up a business is least biased towards national users. This is shown in the above graph by the fact that it is closest to the 45-degree line. The other life event in the 2014 measurement is Studying (as Losing and finding a job is not applicable for Cross Border Mobility). European students tend to be supported quite well by public organisations from other European countries. The life events which are least supported cross border are Starting a small claims procedure and Owning and driving a car.

3.6 Key Enablers

Providing electronic government requires ICT systems to provide services to users. The eGovernment Action plan has outlined that eGovernment requires a broad domain of ICT practices, including Key Enablers, standardisation and innovative technical approaches (Cloud, IPv6, SOA – but also open and big data, mobile and social media). This benchmark takes into account Key Enablers to eGovernment services, measuring the availability and quality of five of these.

As such, the eGovernment benchmark assesses 5 key enablers as sub indicators to the Key Enablers top level benchmark:

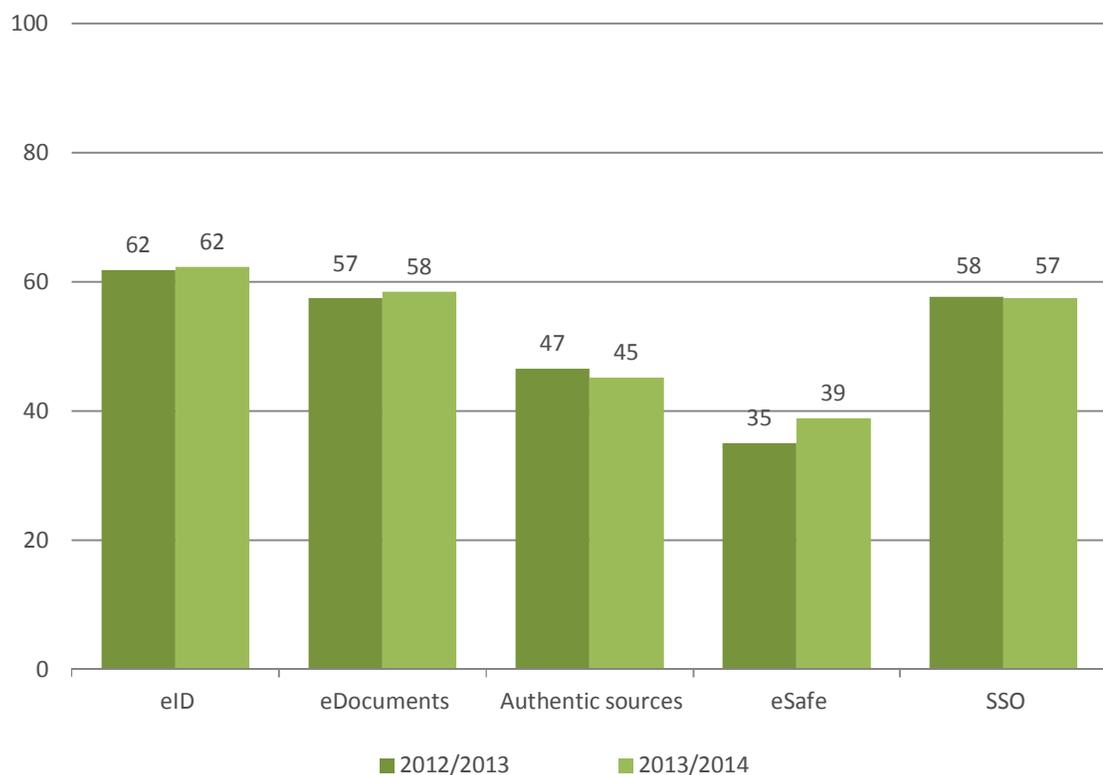
- Electronic Identification (eID):** a government-issued, electronic identification solution to determine if the user is who he claims to be. Allowing users to use their eID enables online transactions, saving time and reducing costs for all involved.

- **Electronic Documents (eDocuments):** an electronic document reduces offline paper processes by allowing citizens and businesses to send authenticated documents online.
- **Authentic Sources:** are base registries used by governments to automatically validate or fetch data relating to citizens or businesses. It facilitates pre-filling of online forms and the implementation of the ‘once-only principle’ that implies governments re-use data to deliver services automatically (without the user having to do anything).
- **Electronic Safe (eSafe):** a virtual repository for storing, administering and sharing personal electronic data and documents. It can be used to securely store personal documents in public service processes.
- **Single Sign On (SSO):** a functionality that allows users to get access to multiple websites without the need to log in multiple times.

3.6.1 Overview of the benchmark

Figure 3.18 shows the availability of each of the key enablers, eID, eDocuments, Authentic sources, eSafe and SSO, in the 2012/2013 and the 2013/2014 measurement.

Figure 3.18: Availability of the Key Enablers across life events (2012/2013 vs 2013/2014, EU28+, %)



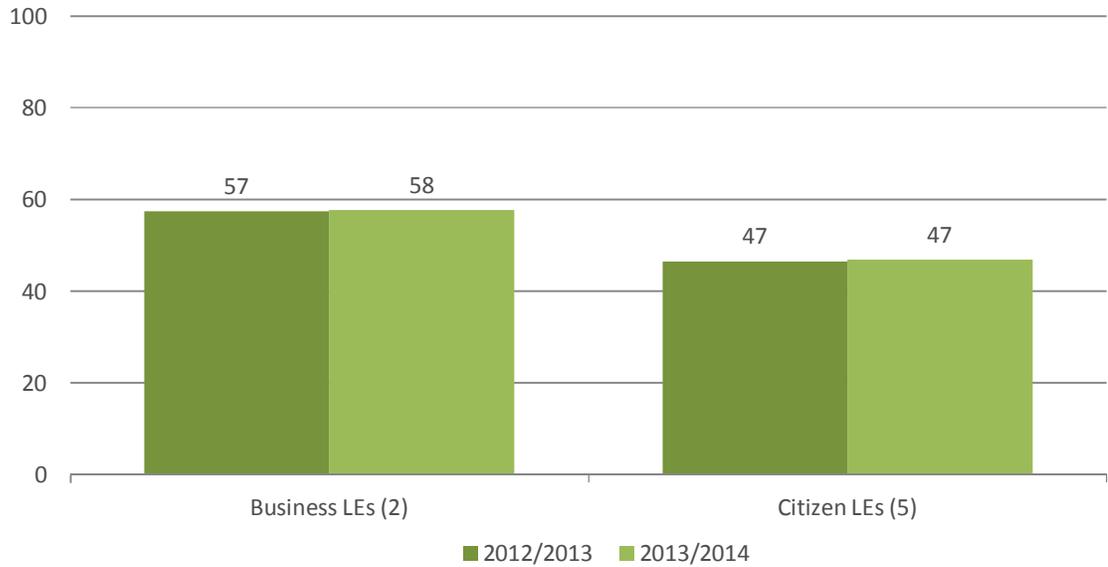
Electronic Identification (eID) is the key enabler which is provided most. This is a good thing as eID is crucial for providing actual services online. After all, almost all of these services require end users to authenticate themselves if they wish to truly interact. Single Sign On functionalities and eDocs are also provided often. In summary, these three Key Enablers are available relatively often, although there is still a lot of room for improvement. The other two Key Enablers are used in a minority of cases. The use of Authentic Sources is crucial as it enables pre-filling of information, but this is only possible 45% of the times. The use of eSafes scores 39%.

Key Enablers have seen little progress over the last year. At the beginning of this chapter, figure 3.1 already outlined that the top level benchmark has seen little progress, and the 3.18 figure above shows that this goes for almost all of the individual Enablers as well. The use of eSafes is the only sub indicator that has seen substantial progress. The use of Authentic Sources has actually decreased, which is disappointing as it indicates that in this age of Big Data, European governments still struggle to re-use data. As a result, citizens and businesses are still

all too often required to submit information that governments already hold. The indicator of Authentic Sources is used in the DESI (Digital Economy and Society Index)¹⁵ for EU Member States, but will display negative progress.

Figure 3.19 compares the use of Key Enablers in business-oriented life events to that in citizen-oriented events.

Figure 3.19: Availability of the Key Enablers for businesses and citizens (2012/2013 vs 2013/2014, EU28+, %)



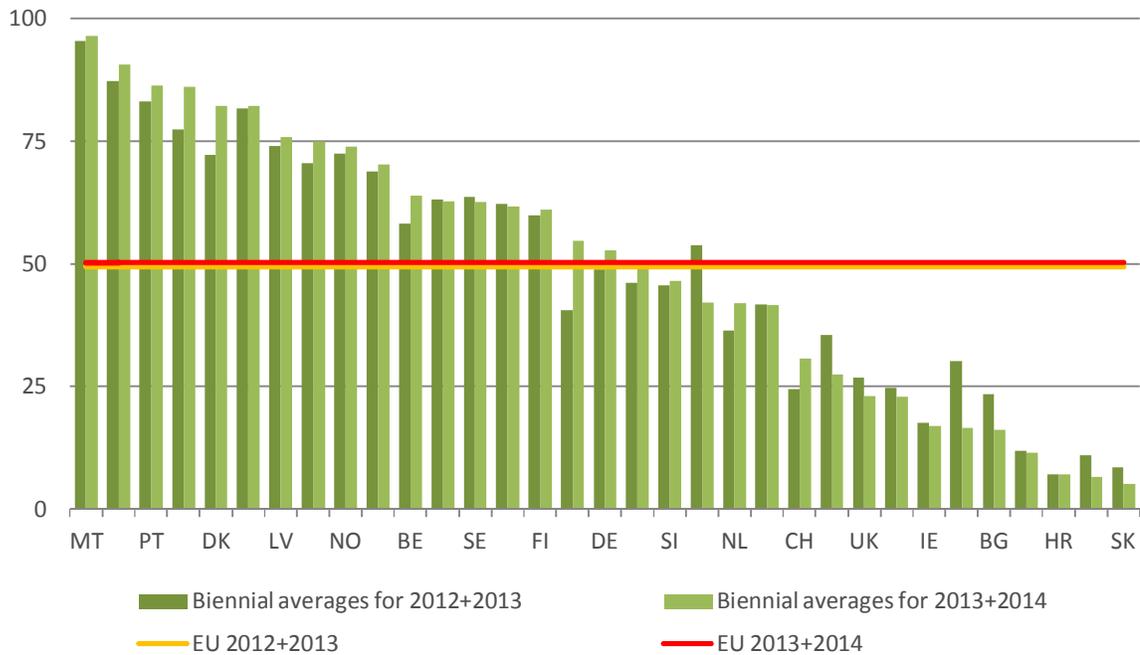
On average across sub indicators, more Key Enablers are available for use by businesses than they are for citizens. The gap has widened by 1 point since the last measurement. This could be a cause for the gap between citizens and businesses that we have seen in other top level indicators, as the lack of Key Enablers can seriously inhibit the orderly provision of other aspects of eGovernment. For example, a lack of eID functionalities can render users unable to authenticate themselves online and request a job seekers allowance, which would cause bad scores for Online Availability as well, as the actual service would be unavailable.

3.6.2 Key Enablers by country

Zooming in from the European averages to the country level, figure 3.20 shows the overall score for Key Enablers (on average across life events) for individual countries, in the 2012/2013 and the 2013/2014 measurements

¹⁵ See: <http://ec.europa.eu/digital-agenda/en/digital-economy-and-society-index-desi>

Figure 3.20: Key Enablers scores by country (2012/2013 vs 2013/2014, %)



A full 27 out of 33 European countries score less than 80%. For Key Enablers this finding highlights the fact that Europe almost as a whole is slow to implement relatively new techniques that can enable better online processes. Notable examples of good practice are Malta, Estonia, Portugal and Spain. Many of the other countries will find themselves to be reasonably good in one Key Enabler, but lacking in another. For example, France scores 100% for both eSafes and Single Sign On but only 27% for Authentic Sources.

Overall, progress in Europe has been extremely modest, which is visually represented by the fact that the horizontal bars for the EU28+ average are almost overlapping. Most individual countries have seen almost no progress. Some countries saw their scores decline¹⁶. Some countries however made better use of Key Enablers in spite of the general European trend. The biggest gains were made by Luxembourg and Spain.

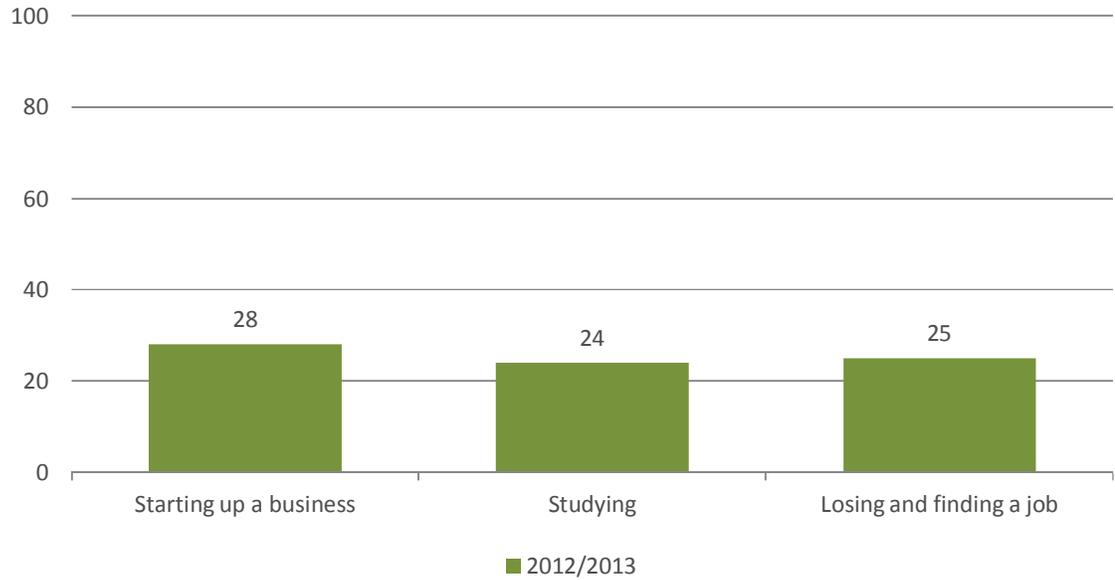
3.7 Mobile friendliness public websites

On top of the 2014 Mystery Shopping measurement, a study has been carried out to assess the mobile friendliness of public administration websites: Do these websites specifically support the use of mobile device? Will citizens and businesses using the website via a mobile device (e.g. smart phones, tablets, etc.) have a user experience equal to that of users who use traditional platforms?

In scope of the analysis were all websites of the 2014 Mystery Shopper study: all websites relating to the life events of Starting up a business, Studying and Losing and Finding a job in the participating countries. While not part of the 'traditional' eGovernment Benchmark (and therefore not included in the results of figures 3.1 and 3.2), this analysis does provide good insights in how governments are deploying new techniques and opening their websites to new platforms. Figure 3.21 below shows the results per life event.

¹⁶ Declining scores tend to represent re-assessment of countries' Key Enablers capabilities rather than actual services being taken down. For example, if new parts of a website are introduced which are not covered by Single Sign On, the SSO score may go down as not all of the website is being covered by a single authentication mechanism any more.

Figure 3.21: Mobile friendly public websites per life event (2014, EU28+, %)

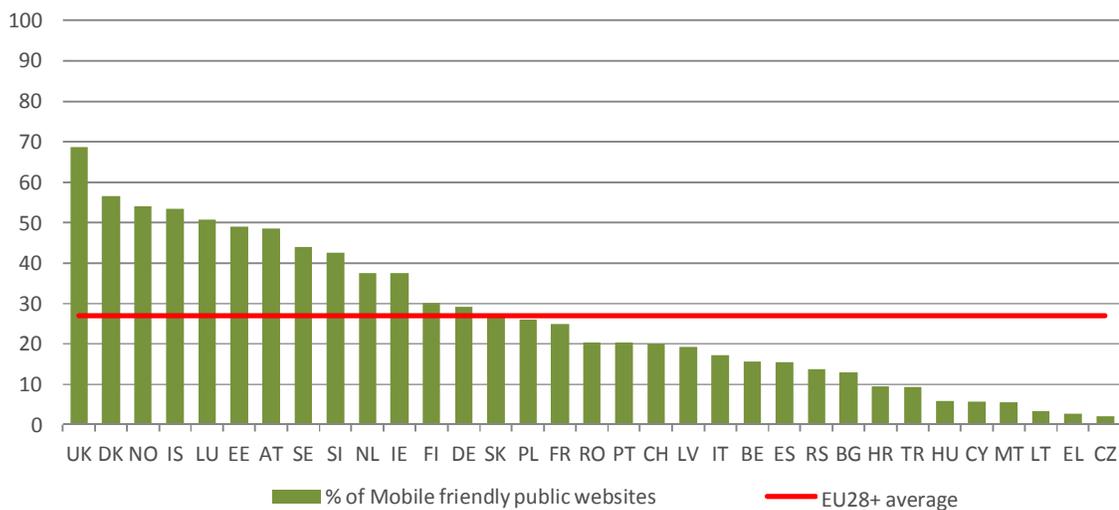


The European average score is low for all three life events. This shows that many European governments and other public administrations have not yet designed websites that are easily usable with a mobile device. As a result, citizens or businesses who wish to interact with government using a mobile device will face a number of barriers. These barriers come in many forms; examples include documents or forms which are unavailable, particular scripts which are unavailable or entire websites which cannot be reached using a mobile device.

The situation is worst for the Studying life event. This is curious as students are one of the demographic groups who use mobile devices the most. While the new generation is the first to use mobile devices *en masse*, the public administrations they would encounter are not. The life event of starting up a business has the highest (although still low) score of 28%. This reflects earlier findings that business-oriented life events tend to score somewhat better.

Zooming in on individual countries, figure 3.22 presents the percentage of websites which are easily usable with mobile devices for European countries.

Figure 3.22: Mobile friendly public websites per country (2014, EU28+, across life events, %)



On average, European countries have low scores. The European average across life events and countries is that only 27% of all websites is mobile friendly.¹⁷ The United Kingdom has the highest score at 69%. It is the only country where over two thirds of the public websites is already mobile friendly. Four more countries score over the 50% mark: Denmark, Norway, Iceland and Luxembourg.

3.8 Mandatory online services

In some cases, businesses and citizens can chose whether or not they use the online channels to interact with government. Other services are mandatory online services, meaning that these services *must* be completed online. For these services, the online channel is, in principle, the only channel through which users can interact with government – although safety nets could be in place to protect vulnerable groups.

An analysis has been carried out to landscape how many services under review are mandatory online services. The results are shown in figure 3.23.

Figure 3.23: Mandatory online services (2014, per country, per life events, %)

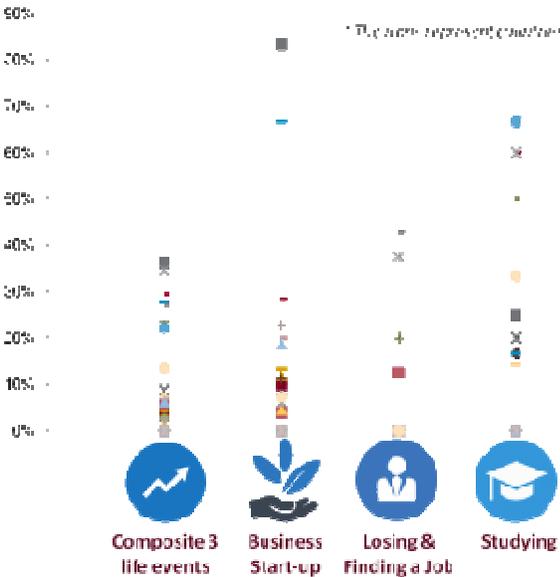


Figure 3.23 shows European countries, with each country being represented anonymously by a different icon (but with a consistent icon across the three life events and the composite column). As the results show, no country has over 40% mandatory online services on average across life events. For individual life events, the European landscape is different.

For the business start up life event, one country has made the online channel mandatory for over 80% of all services. In contrast, many other countries have (almost) no mandatory online services for starting businesses. European countries are slightly more consistent in their approach to the Studying life event. For most students in most countries, 20 to 60% of all services have to be completed online. The life event of Losing and finding a job has the lowest number of mandatory online services. Most countries have no mandatory online services at all for jobseekers at all. Many countries in this part of the graph are not visible as one icon on the 0% line is in front of the others.

¹⁷ Scores in this graph are the unweighted average of all websites applicable to any of the three life events. As a result, the life event Starting up a business is slightly overrepresented as it has the most websites involved. Thus, the EU28+ average is not weighted for life events and therefore it is not the average of the three scores in figure 3.21.

4 Starting up a business and early trading operations

'For future prosperity we have to encourage start-ups, entrepreneurs who might one day take on the world.'

Commissioner Elżbieta Bieńkowska
24 March 2015 in New start for Growth¹⁸

4.1 Introduction to the life event

The next paragraphs present the results of the 2014 measurement for the life event Starting up a business in European countries. Every paragraph addresses one of the four top level benchmark from the Mystery Shopping assessment. These four, all equally important, landscape to what extent starting entrepreneurs are facilitated by European eGovernment services.

- **User Centricity:** Are businesses able to obtain transactional services remotely and are the services easy to understand and quickly obtainable? Are new entrepreneurs supported during their first steps? How far are public services re-using information already provided by businesses, thus speeding up the time for applications for instance?
- **Transparency:** Can businesses easily find information on the use of their company –and sometimes personal – data, the roles and responsibilities of public organisations and the way the service is organised? Can businesses influence policy making or public organisation performance?
- **Cross Border Mobility:** Can businesses comply with administrative requirements from abroad and are the administrative requirements clear from a cross-border point of view?
- **Key Enablers:** Are services for businesses provided seamlessly by using technical enablers such as eID, Single Sign On and eDocuments?

This life event was assessed in the 2012 measurement as well, using the same methodology, allowing to track progress over time.

Key findings

- *The benchmark study shows countries still focus on bringing business services online, often at the expense of a user friendly design. While information or services are mostly online, these are often not easy or fast to use.*
- *A dense network of portals ensures that websites with services on starting a business are easy to find. However, once entrepreneurs reach these websites, they will still find that a number of these do not allow the full service but merely provide information instead.*
- *Support and help functions to starting businesses are well in supply, as 83% of governments have demos, FAQs and contact details in place. This can help starting entrepreneurs with more complicated administrative procedures.*
- *Transparency is slowly improving but remains an issue for this life event. Starting businesses will often face uncertainty on the delivery of services which were requested via the online channels.*
- *An important leap forward has been made in transparency on the data that governments hold on (the people behind) business start-ups. An increasing number of countries provides examples of good practice in handling this data.*
- *Many governments prioritise eGovernment services to foreign start-ups. Services to starting businesses have significantly improved over the last two years. Still, a true Digital Single Market will need less face-to-face interaction and more services to be completely available online to start-ups from other countries.*
- *Europe has not made any more use of important Key Enablers to eGovernment for business start-ups over the*

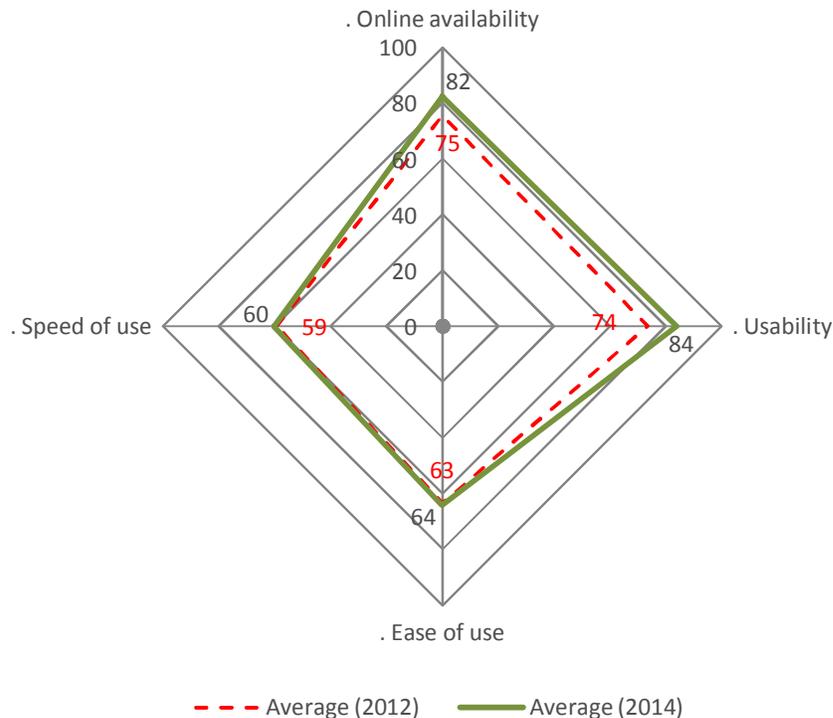
¹⁸ Full text at http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=8170&lang=en&tpa_id=0&title=New-start-for-Growth-%E2%80%93-Interview-with-Commissioner-El%C5%BCbieta-Bie%C5%84kowska

past few years. For example, there is much potential for automated services when starting up a business, but reuse of information from other Authentic Sources is still a rarity.

4.2 User Centric Government

Figure 4.1 below shows the average score of the EU28+ for each of the four elements for the Business start-up life event, comparing the latest measurement to the 2012 measurement.

Figure 4.1: Four components of User Centricity for Starting up a business: Online Availability, Usability, Ease of Use and Speed of Use (2012 vs 2014, EU28+, %)

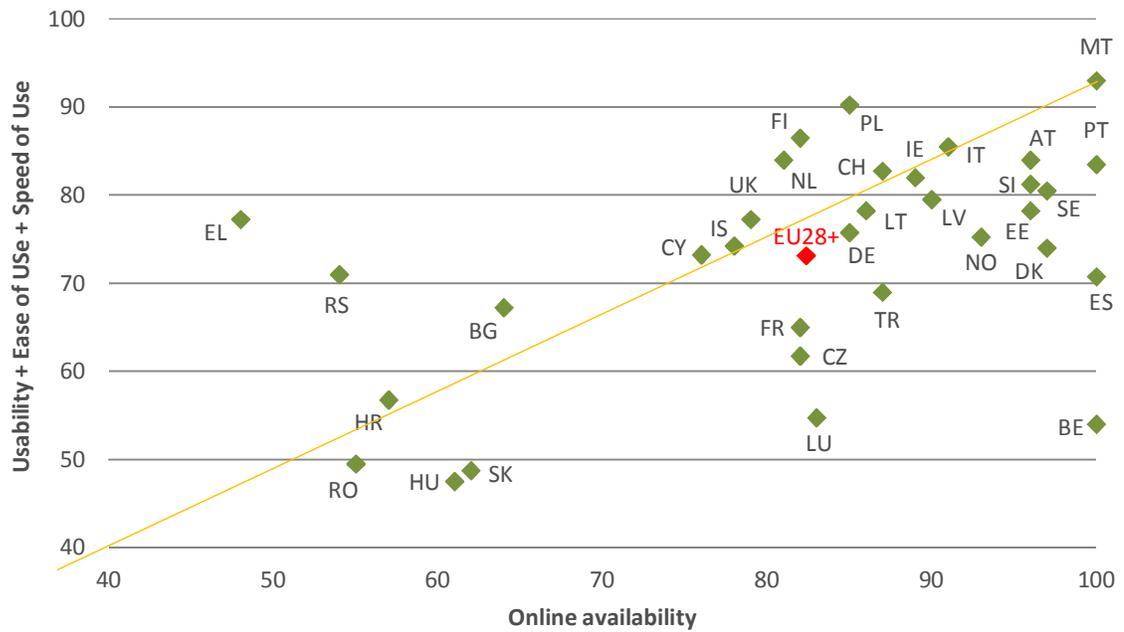


The Online Availability sub indicator attains a score of 82%, indicating that quite a lot of interactions are available online for this life event. Starting entrepreneurs are also well supported by the availability of online support functions, as the Usability score is 84%. While interactions and support are provided in large numbers, the user experience is not at the same level. The score for Ease of Use is at 64% while the score for Speed of Use is at 60%. Both in absolute terms as well as compared to other life events, User Centricity for starting businesses is mostly generated by the number of services available, not the user experience.

Compared to the 2012 assessment of this life event, Europe has made good progress in Online Availability, as the score rose 7 points. This considerable gain indicates that more information and actual services for starting entrepreneurs have been brought online. The average usability score increased even more, rising 10 points. However, the scores for Ease of Use and Speed of Use have not increased significantly, both up only 1 point compared to 2012. This suggests that while more services are available to support this life event, the user experience has hardly improved.

Both the static findings and the progress since 2012 suggest a focus of 'quantity over quality'. Figure 4.2 below examines this in more detail, comparing the scores for Online Availability sub indicators to the combined score on the other three sub indicators for User Centricity taken together.

Figure 4.2: Correlation Online Availability versus Usability + Ease of Use + Speed of Use by country for Starting up a business (2014, %)

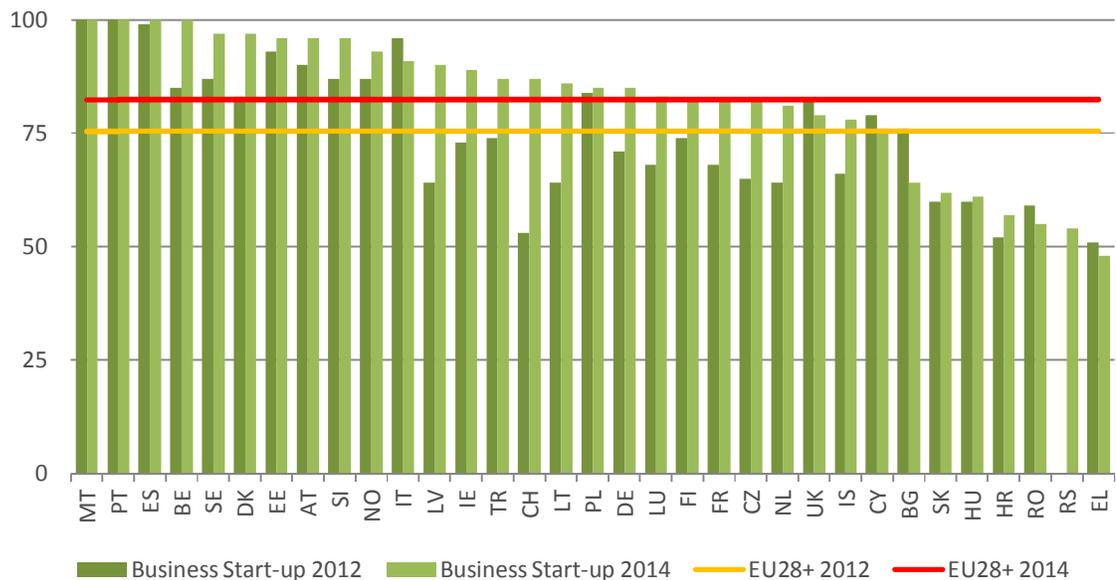


Of the thirty-two participating countries, twenty-seven have a higher score on Online Availability than on the combined score for the other three sub indicators. This suggests the ‘quality over quantity’ situation for this life event in the majority of countries. Belgium is the most extreme case with a 100% score for the former and a 56% score for the latter, a 44 point gap. For six countries, the reverse is true with Greece being the clearest example as it scores 29 points lower on Online Availability than on the combined indicator. The situation in Croatia is perfectly balanced with the same score for both.

4.2.1 Online Availability

Further zooming in on the sub indicator of Online Availability, figure 4.3 shows the progress since 2012 in this life event for all countries individually.

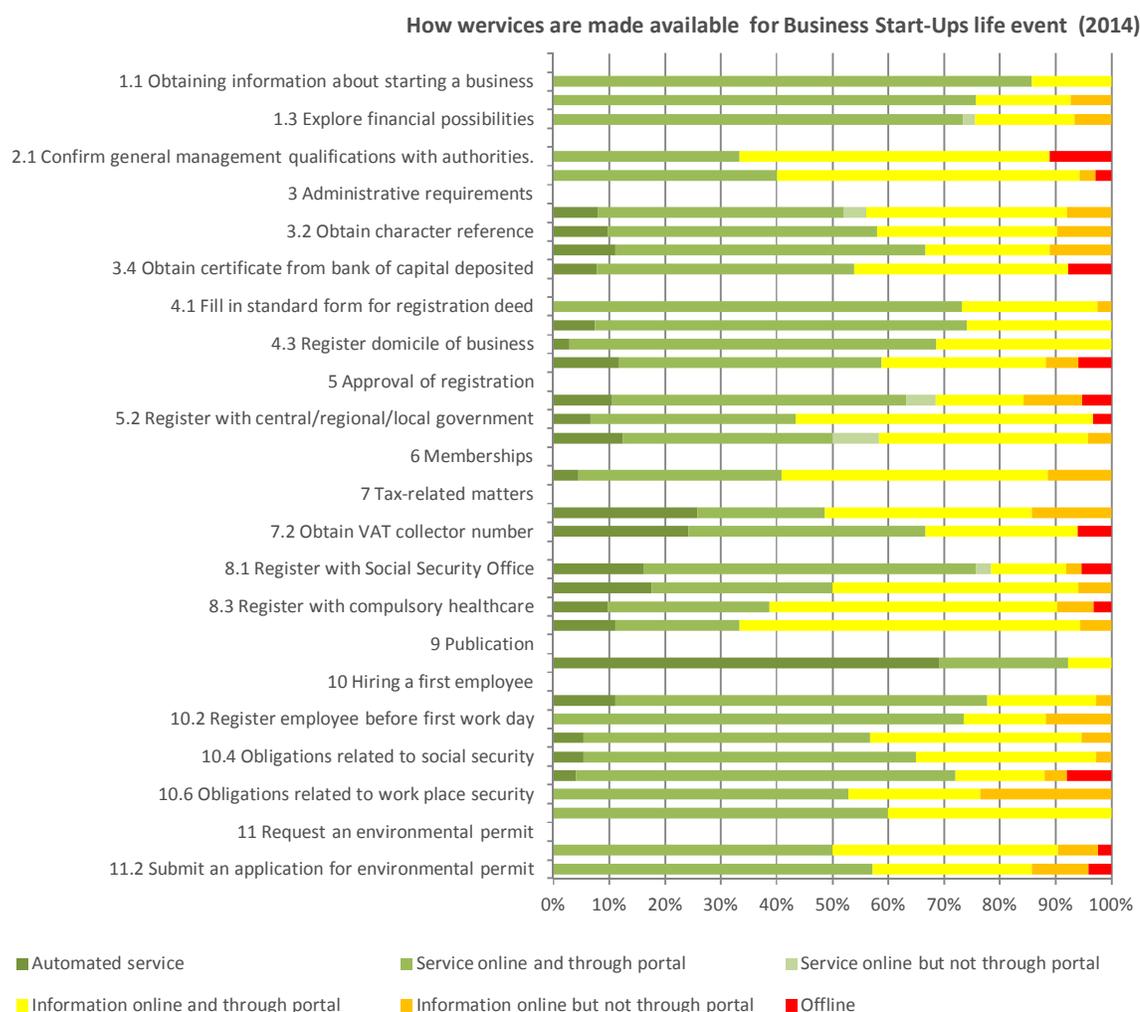
Figure 4.3: Online Availability in 2012 and 2014 for Starting up a Business per country (%)



Twenty-four countries have made progress between 2012 and 2014. They now provide more information and services online to starting entrepreneurs than they did in 2012. The most notable of these countries is Switzerland, which saw its score rise 34 points. Other good examples include Latvia and Lithuania. On the other hand, six countries saw their Online Availability score for this life event go down. In most cases, losses are minor as countries seldom ‘move back in time’. Malta and Portugal already attained the maximum score in 2012, leaving no room for further progress (they are now joined by Spain and Belgium) while Serbia was measured for the first time in 2014.

Figure 4.4 further explores this life event by showing interactions are made available within the life event of Starting up a businesses, on average for Europe as a whole. This is an extensive life event, comprising 11 phases (categories) and 33 interactions in total.

Figure 4.4: How services are made available for the Business Start up life event (2014, EU28+, %)



Across Europe, this life event is generally well supported in terms of the number of services provided online. These are often available via portals. Of the 33 interactions, 27 can be fully completed online (or automated) in a majority (at least 50%) of the participating cases. There are also very few cases of services being supported offline: 21 of the interactions are supported online (with at least some information) by every single participating country.

Automation is quite high: 22 interactions are automated in one or more European countries. The prime example is step 9.1 (Publishing the registration of the business in an official journal) is automated in two thirds of the cases. Tax and insurance related matters are also automated quite often, in close to 20% of the cases. However, most other interactions are only automated in a few countries. This shows that there is still much untapped

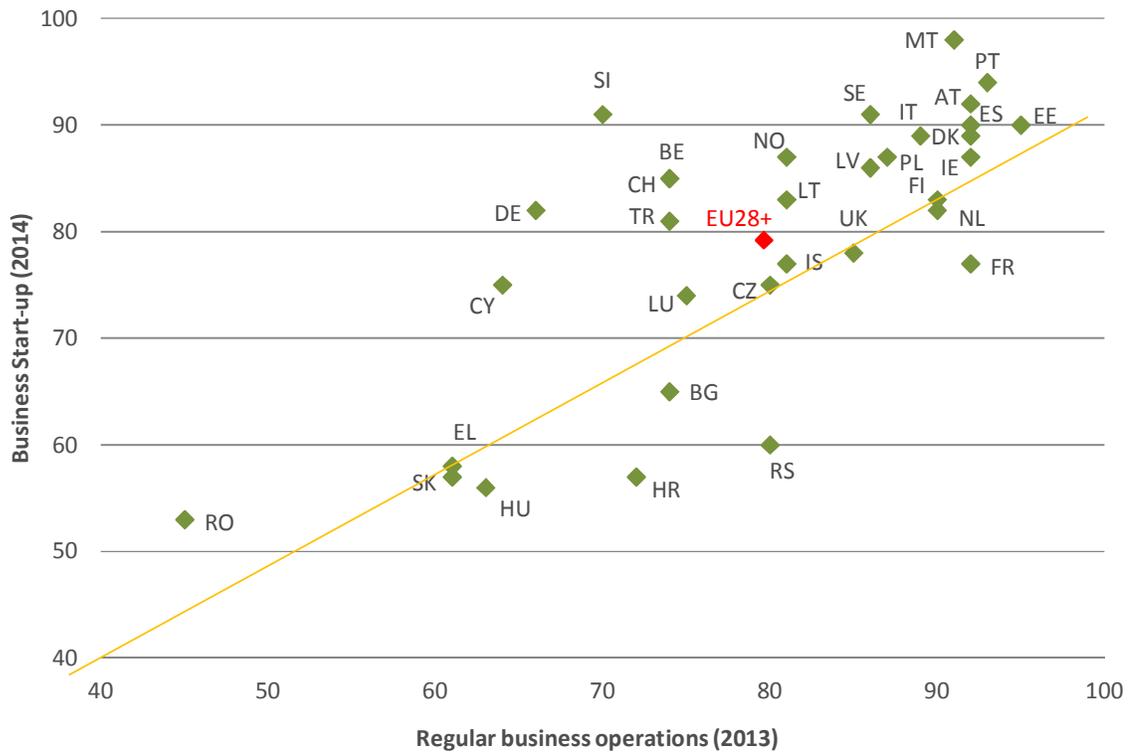
potential for further automation. Further automation would reduce the number of steps that starting entrepreneurs would need to take. After all, many starting European entrepreneurs currently still face a 33-step life event!

Other interactions which are well supported include the orientation phase of interaction 1.1 through 1.3. Registering with social security (8.1) and registering as an employer (10.1) are also well supported: both interactions are automated or possible to complete fully online in 78% of the cases. The least supported steps are step confirming management qualifications (2.1) and registering with mandatory healthcare insurance (10.4). Both are Online Available in a third (33%) of the cases, suggesting a mismatch between business authorities and other public institutions such as the healthcare departments.

4.2.2 Starting business versus established businesses

Eventually, a business will be set up to go and start its normal pattern of business. It can be interesting to compare which life event is better supported with online services. After all, both the Starting up a business life event and the Regular business operations life event are in the eGovernment benchmark. The former was included in the 2014 measurement while the latter was assessed in 2013. Figure 4.5 compares how countries score on Online Availability in both life events.

Figure 4.5: Online Availability for Starting up a business life event vs Regular business operations event by country (2013/2014, %)



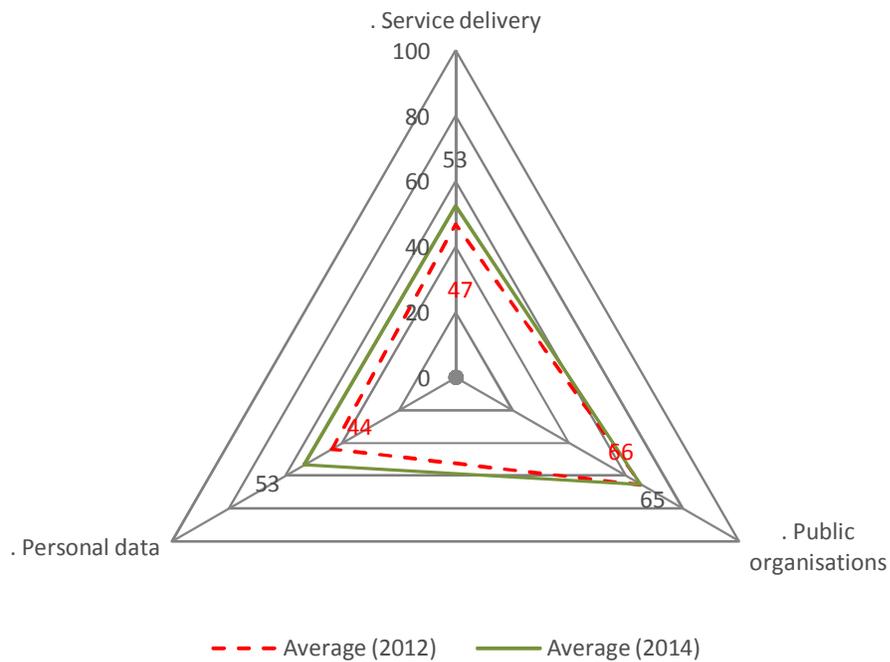
Many countries support starting businesses and running businesses to roughly the same extent. This is represented in the graph by these countries being close to the 45-degree line. For example Poland and Latvia have exactly the same Online Availability score for both life events. The EU28+ average is 80% for Regular business operations and 79% for Starting up a business.

There are countries, however, which are distinctly focussed on one of these two. Business start-ups in Slovenia will find their government to be supporting them excellently during the start-up phase (91% score) but below-average once they get their company conducting business as usual (70%). Serbian entrepreneurs will find their national Online Availability to be on par with Europe once they have enterprise running (80%), but may find it challenging to reach that stage because Serbia has a mediocre score for Starting up a business. Both countries face gaps of over 20 points between both life events.

4.3 Transparent Government

New entrepreneurs who are starting up a business may find themselves in a completely new world. Therefore, Transparent Government is of great importance for this life event. Transparency can help entrepreneurs understand what expected from them and what they can expect from their government. Figure 4.6 shows the Starting up a business EU28+ scores on the three sub indicators of Transparent Government: Transparency of Service delivery, Personal data and Public organisations

Figure 4.6: Three components of Transparency for Starting up a business: Service delivery, Public organisations and Personal data (2014, EU28+, %)

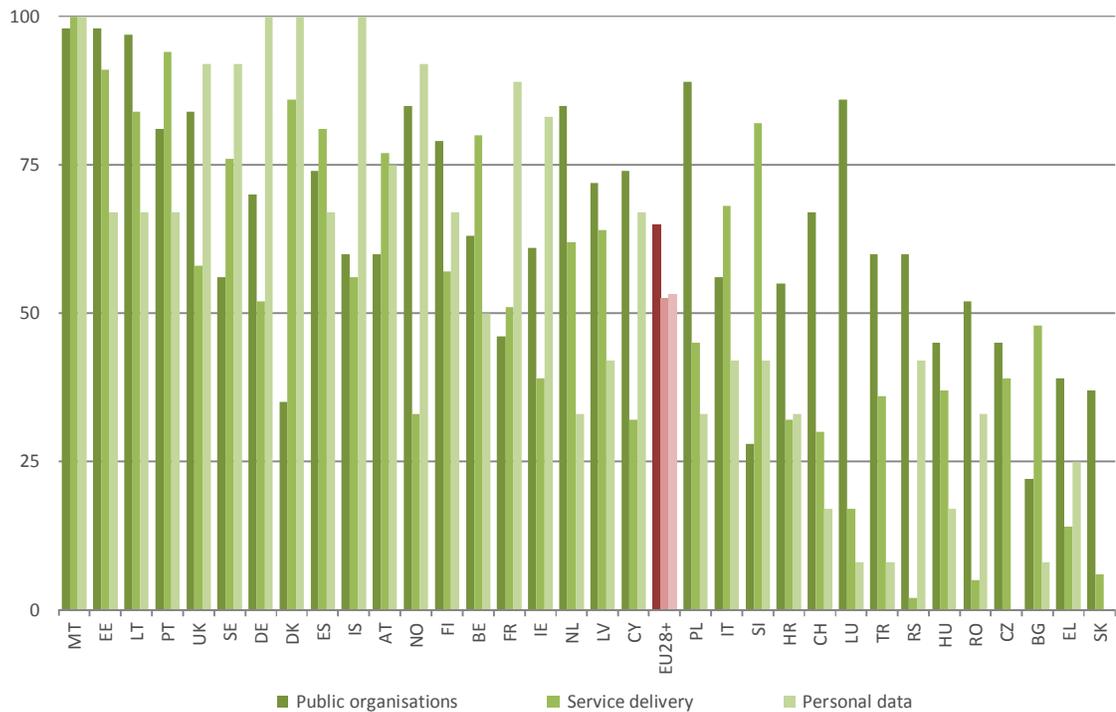


Transparency on public organisations has a score 65%, suggesting that government departments which deal with starting businesses are generally quite open about their own operations. However, these departments have made no (further) progress over the last two years. In fact, the EU28+ score has decreased one point since 2012.

Interestingly, the other two sub indicators still have lower scores in absolute terms, but have made substantial progress since 2012. Transparency on Service delivery improved six points to 53%, suggesting that the starting entrepreneurs now have some view on (timelines of) service delivery in the majority of their interactions, although much work remains. Transparency on Personal data improved an impressive 9 points, indicating that public organisations are now much more open on what data they hold on starting businesses. As the score on this last indicator is 53% in absolute terms, there is still room for further improvement.

Figure 4.7 below further examines Transparent Government for this life event with a view by country.

Figure 4.7: Three components of Transparency for Starting up a business: Service delivery, Public organisations and Personal data per country (2014, %)



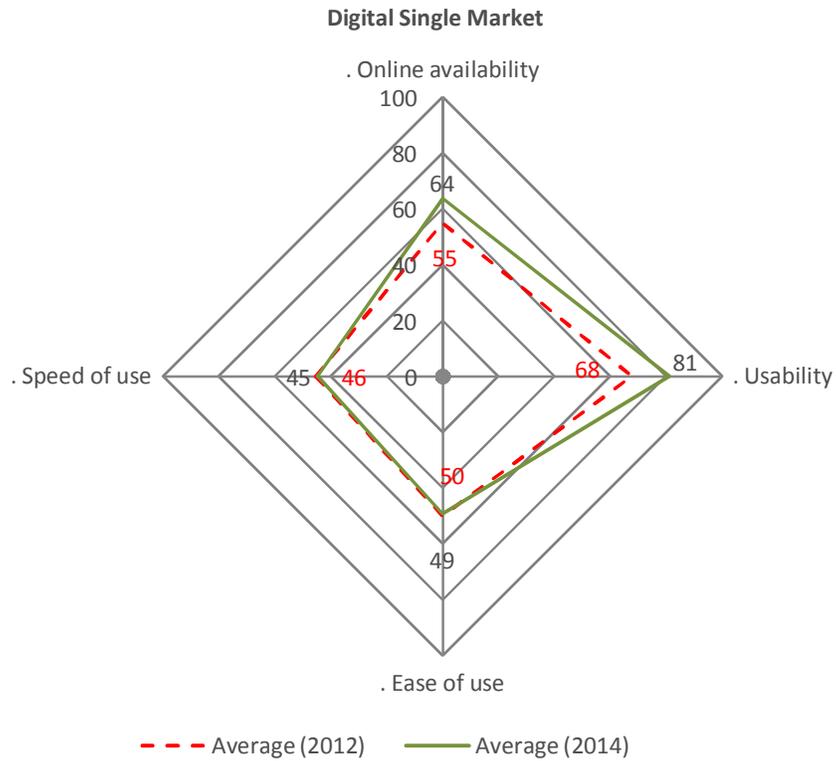
There is very little correlation between the three sub indicators. The countries in this graph are ordered by their overall score for on the Transparency top level benchmark. Rankings for the individual sub indicators would be completely different. For example, Luxemburg has one of the best scores for Transparency on Public Organisations but it ranked third-to-last on Personal Data. Denmark is the complete opposite as it has the maximum score on Personal Data but is ranked third-to-last on Public Organisations. This variation suggests that public organisations that work with starting businesses have no consistent approach to transparency.

Only Malta has good scores on all aspects of transparency. Other good practices for this life event are Estonia and Lithuania for Transparency on Public Organisations, Portugal (and, in a relative sense, Spain) for Transparency on Service Delivery and Germany, Iceland and Denmark on Transparency on Personal Data.

4.4 Cross Border Mobility

Cross-border mobility of businesses is one of the key pillars of EU policy to create a true Digital Single Market, thereby increasing the competitiveness of Europe. This is especially important for entrepreneurs who want to start a business in another country or businesses which are setting up a branch abroad. The Digital Single Market landscapes to what extent this is supported by eGovernment services. Figure 4.8 shows the scores for the Starting up a business life event on the four sub indicators of this top level benchmark.

Figure 4.8: Cross Border Mobility; Online Availability, Usability, Ease of Use and Speed of Use for Regular business operations (2012 vs 2014, EU28+, %)



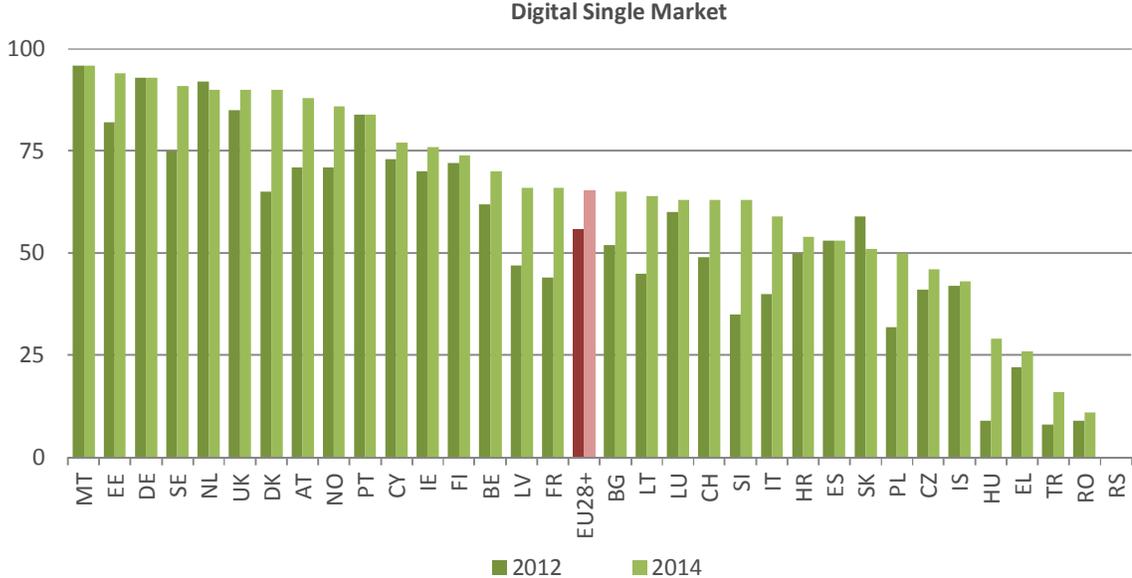
As outlined in previous chapters, the sub indicators for Cross Border Mobility match the sub indicators for User Centric Government, but this time taking foreign users into account. In this case, users would be entrepreneurs or businesses which literally setting up shop in another country.

They will find themselves well supported online, at least compared to other groups of users. Scores on all four sub indicators are generally much higher than those for other life events. This shows that governments treat incoming businesses with some priority as regards facilitating them with eGovernment. In absolute term though, more work needs to be done. The score on Usability is excellent at 81% but the scores for Online Availability (64%), Ease of Use (49%) and Speed of Use (45%) still leave much room for improvement.

Over the last two year more services have come online (Online Availability up 9 points) and the corresponding support functionalities were well worked out (Usability up 13 points). This has not improved the user experience for cross border businesses however. Both Ease of Use and Speed of Use scored 1 point below their 2012 score. This suggests that European efforts to support business start ups across borders have been too much focussed on supply and to little focussed on wishes and demands from users.

Figure 4.9 examines the online support for Cross Border Mobility for starting businesses by country. Scores in this graph are for the Digital Single Market top level benchmark, i.e. the weighted average of the four sub indicators.

Figure 4.9: Cross Border Mobility for Starting up a business per country (2012 vs 2014, %)



Most countries could provide better online services to business start ups from other countries in 2014 than they could in 2012. The exceptions are the Netherlands and Slovakia, whose scores slightly decreased. Malta and Germany were leading countries in 2012 and are now joined by Estonia and Sweden. The biggest gain in absolute term was Denmark (up 25 points in two years), but in relative terms Hungary had the most impressive improvement. The Hungarian has more than tripled in two years.

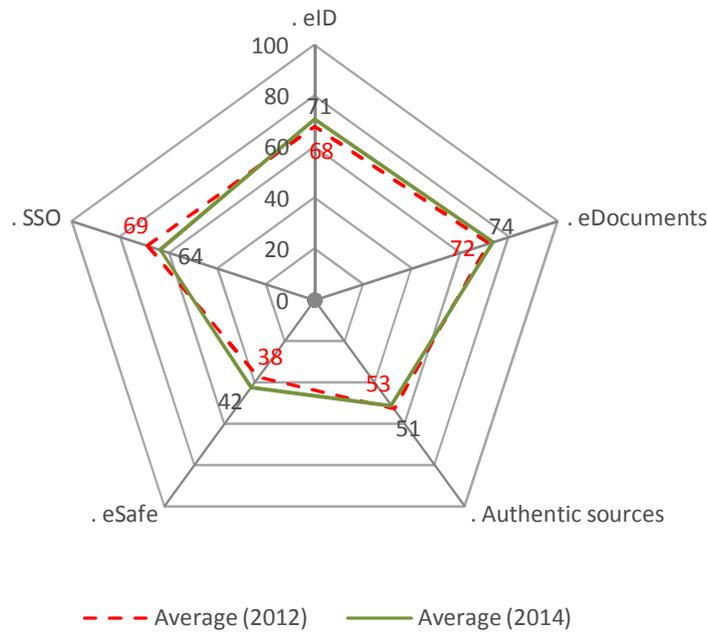
Compared to the generic level (as discussed in paragraph 3.5), English speaking countries are less highly ranked for the Starting up a business life event. This suggests that government departments focussed on businesses struggle less with language barriers than their colleagues focussed on other life events.

4.5 Key Enablers

Starting up a business can cause a considerable administrative burden, as was highlighted by the fact that this life events consists of 33 interactions. Key Enablers can reduce this burden as they provide a requisite for fully transactional eGovernment services and reduce the number of steps to take and the amount of data to submit.

Figure 4.10 shows the availability of the main Key Enablers within the Staring up a business life event: eID, eDocuments, Authentic Sources, eSafe and Single Sign On.

Figure 4.10: Availability of Key Enablers within the Starting up a business life event (2012 v 2014, EU28+, %)



Electronic means of authentication (eID) and formally recognised electronic documents (eDocuments) attain the highest scores in this life event, scoring 71% and 74% respectively. Compared to the general trend, the life event of Starting up a business is more enabled by eDocuments and less by Single Sign On. This could be caused by a great need to submit a great number of documents when starting up a business, which is scattered across many public organisations who struggle to implement SSO functionalities. The score for Authentic Sources stands at 51%, which is high compared to other life events. This reflects the fact that data is relatively often reused in this life event, which was also reflected by the relatively high level of automation as discussed in paragraph 4.2.1.

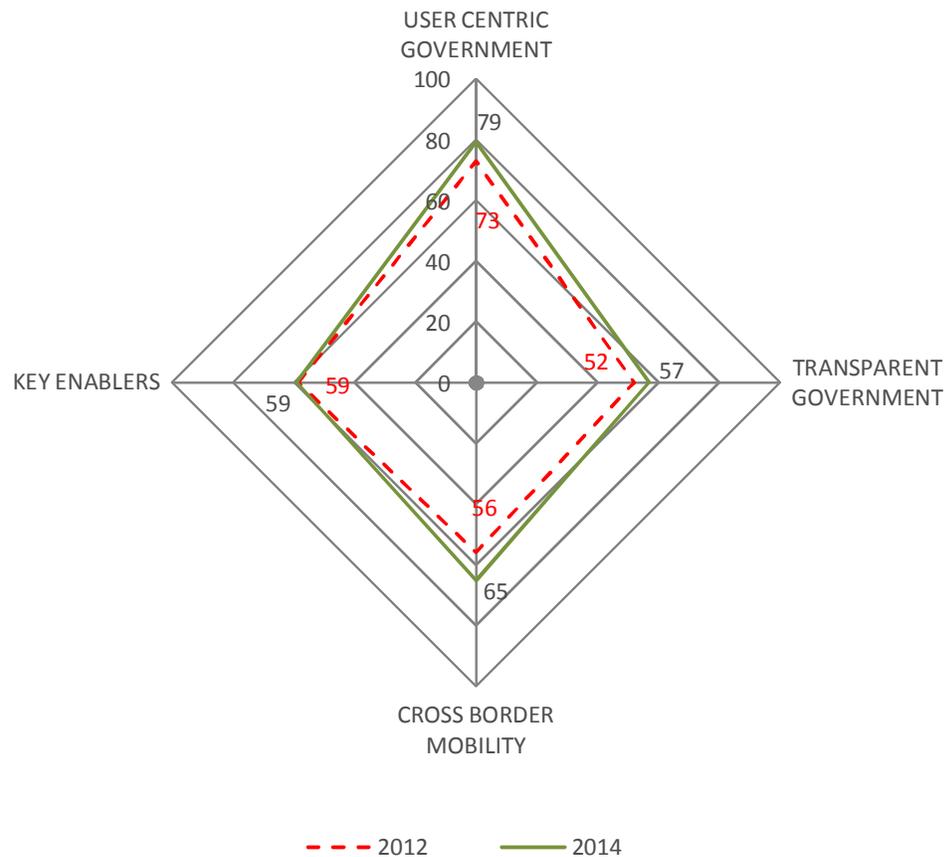
Progress since 2012 is mixed at best. The use of eID, eDocs and eSafes has slightly increased by 3, 2 and 4 points respectively. However, scores for SSO and for Authentic Sources, both important Key Enablers, have gone down since 2012. In the case of SSO, the decrease is 5 points which is considerable.¹⁹ This signals a serious lack of progress in these areas.

4.6 Overall

To provide an overall summary for this life event, figure 4.11 shows the scores of all four top-level benchmarks; User Centricity, Transparency, Cross Border Mobility and Key Enablers.

¹⁹ This does not necessarily mean that public organisations are actively taking down SSO functionalities. The EU28+ average is also affected by the fact that Serbia, which scored no points at all on SSO, is now included in the measurement. The other European countries made virtually no progress and thus could not compensate the EU28+ average. While the situation is not in fact getting worse, it does signal a serious lack of progress.

Figure 4.11: Four top level benchmarks Starting up a business: User Centricity, Transparency, Cross Border Mobility and Key Enablers (EU28+, 2012 vs 2014, %)



Compared to other life events, the life event of Starting up a business has good scores on all four top level benchmarks. On Key Enablers and Cross Border Mobility, it even has the highest scores of all life events measured to date. This can be partly explained by the fact that business-oriented life events tend to score better (as was discussed in chapter 3), combined with the fact that the other business-oriented life event, Regular business operations, was measured one year ago (granting the former one more year for development). Overall, Europeans who wish to start up a business will find themselves relatively well supported.

Furthermore, the life event has seen good progress over the last two years. Transparent Government increased by 5 points, User Centricity (for domestic start-ups) increased by 6 points and Cross Border Mobility (i.e. User Centricity for foreign start-ups) even increased by 9 points. Key Enablers however did not improve at all on average. Even though this life event which scores well compared to other life events, there is still room for further progress, especially with regards to Transparent Government.

5 Losing and finding a job

‘Growth and jobs, combined with skills development to make people better equipped for the jobs and for societies of tomorrow, are in my view the best instruments to promote social inclusion.’

Commissioner Marianne Thyssen

12 February 2015 on the Opening Conference of the Belgian Chairmanship of the Council of Europe²⁰

5.1 Introduction to the life event

This chapter will discuss the benchmark results for the life event of Losing and finding a job. For this life event, the eGovernment services of thirty-three European countries have been assessed on three top level benchmark indicators. These represent the three main aspects that citizens going through this life event will need:

- **User Centricity:** Are citizens able to obtain transactional services remotely and are the services easy to understand and quickly obtainable? Are citizens really supported when they request operations? How far are public services re-using information already provided by businesses, thus speeding up the time for applications for instance?
- **Transparency:** Can businesses easily find information on the use of their company –and sometimes personal – data, the roles and responsibilities of public organisations and the way the service is organised? Can businesses influence policy making or public organisation performance?
- **Key Enablers:** Are services for businesses provided seamlessly by using technical enablers such as eID, Single Sign On and eDocuments.

After the 2012 measurement, this is the second time that this life event is assessed using the same methodology, allowing for comparison over time. The top level benchmark of Cross Border Mobility is not included in the benchmark for Losing and finding a job, because cross border eGovernment services were applicable not to be measured for this life event.

Key findings

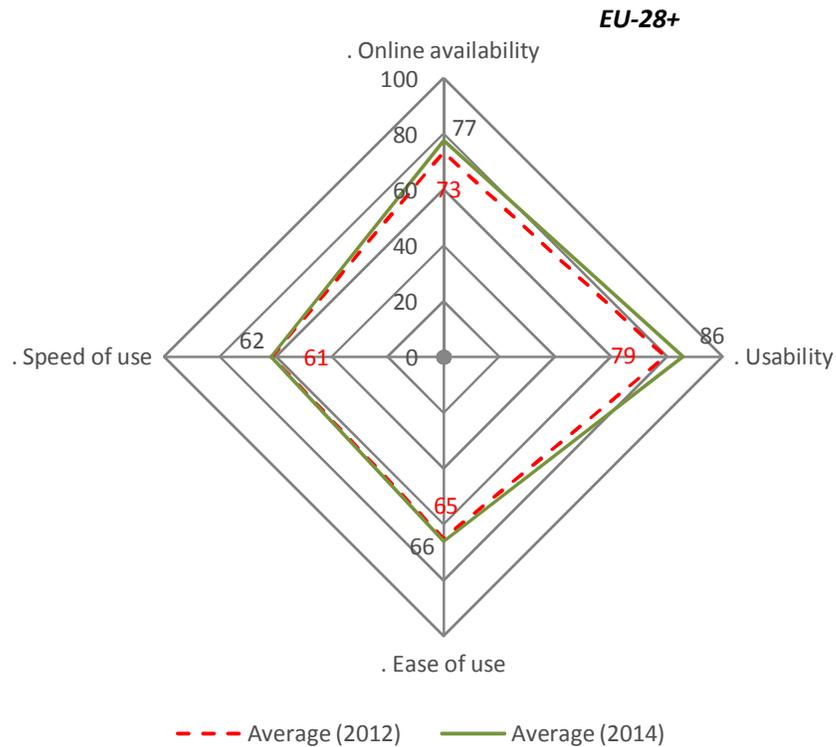
- *eGovernment services to jobseekers have not become much more user centric over the last two years. User experience in particular has seen little progress. These services are not significantly more user friendly or fast to use than they were at the time of the 2012 measurement.*
- *The journey of ‘finding a job’ is generally well supported. Many countries provide the required services fully online. The journey of ‘losing a job’ on the other hand is often impossible to complete fully online. Many countries merely provide information on unemployment benefits via the online channels; actually obtaining these benefits requires physical interaction.*
- *The supply of support and help functionalities is very high. Over 86% of all government agencies provide tools such as FAQs, live chat and fora online to support jobseekers.*
- *The (often semi-independent) agencies concerned with this life event feel the need to be transparent on what their organisation is, but not on how and when it will complete the requested services.*
- *Transparency on personal data is more of a priority now than it was two years ago. Still, procedures to view, edit or complain about this data could be further refined.*
- *The use of electronic tools for identification has not increased for this life event over the last two years. This could explain why not many services can be completed fully online.*

²⁰ Full text at http://europa.eu/rapid/press-release_SPEECH-15-4404_en.html

5.2 User Centric Government

User Centricity indicates the extent to which European governments are on average supporting users (jobseekers) in their journey via the online channels. In figure 5.1 below, the European score for User Centricity is displayed for each of the four sub indicators. These sub indicators include Online Availability, Usability, Ease of Use and Speed of Use.

Figure 5.1: Four components of User Centricity for Losing and finding a job: Online Availability, Usability, Ease of Use and Speed of Use (2012 vs 2014, EU28+, %)

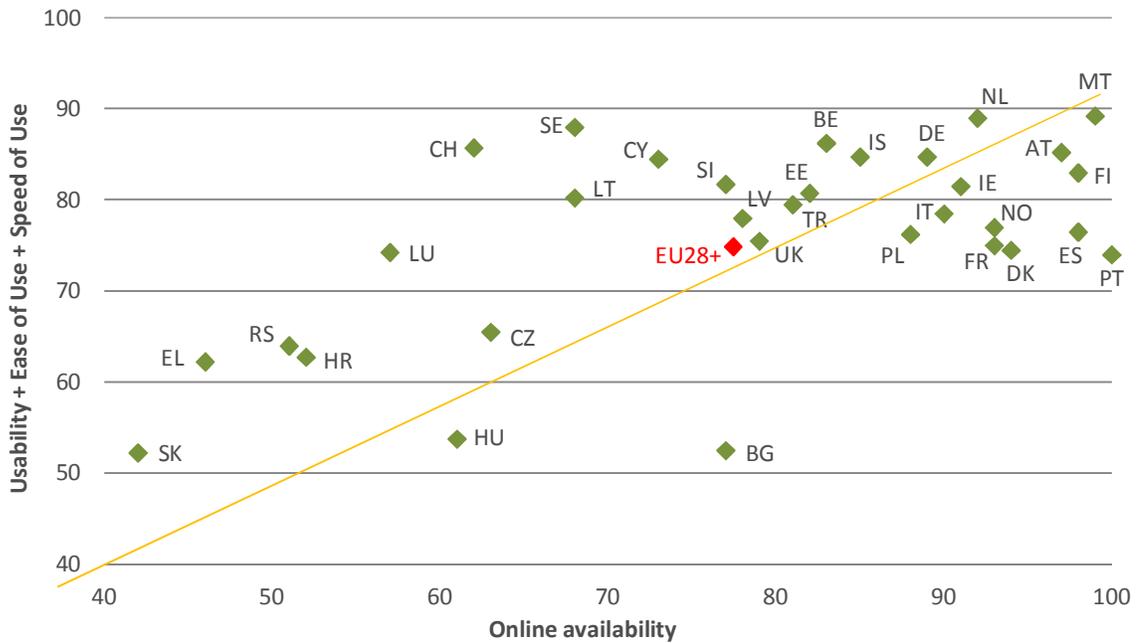


The Online Availability score for Losing and finding a job is 77%. Compared to other life events, this score is not particularly good or particularly bad, indicating that the life event is pretty well supported in term of quantity of services provided. Usability stands at 86%, which is the highest usability score for any life event, indicating that the government agencies responsible for jobseekers generally provide enough support functions. The score for Ease of Use is 66% while the score for Speed of Use is 62%. Both scores are very good scores compared to other life events but not very high scores in absolute terms or compared to other indicators. This suggests that users may not have a good user experience per se when using eGovernment after losing or finding a job, but that they will rate this user experience better than when they use eGovernment services for other purposes.

As can be seen in the figure, this life event has seen little progress in User Centricity since 2012. The scores for Ease of Use and Speed of Use both increased by exactly 1 point each. The sub indicator of Usability saw more progress, as the European average rose 7 points. This indicates that more support and help functions came available to jobseekers. Finally, the sub indicator of Online Availability saw a modest increase of 4 points, indicating that some European countries were able to provide some more information and services online.

Figure 5.2 provides more detail as regards User Centricity, comparing Online Availability (representing the quantity of information and services) to the three other sub indicators combined.

Figure 5.2: Correlation Online Availability versus Usability + Ease of Use + Speed of Use by country for Losing and finding a job (2014, %)

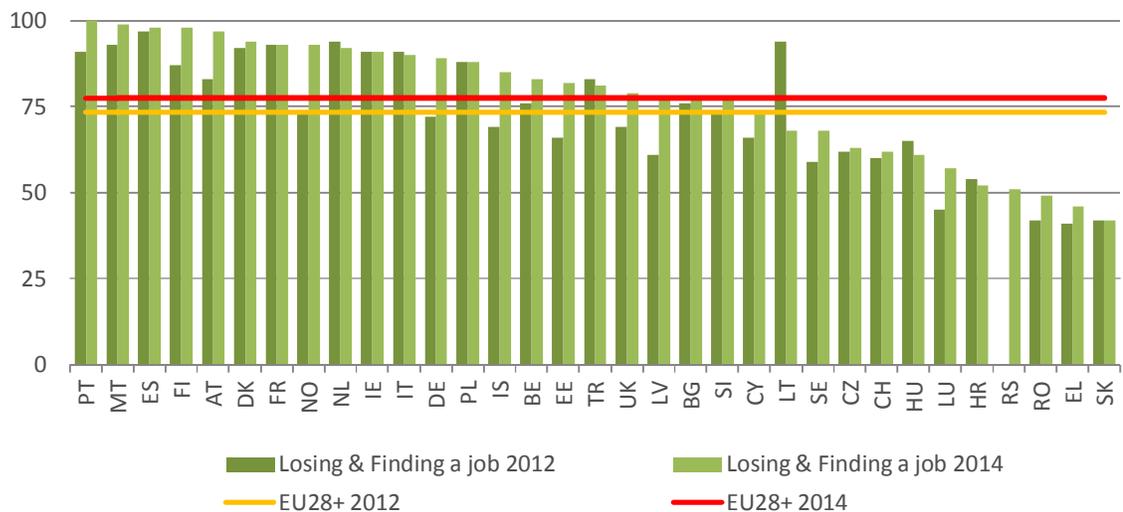


On average, European eGovernment providers value quality as much as quantity when it comes to Losing and finding a job. This is represented by the EU28+ average being close to the 45-degree line in the graph. Interestingly, the top performers (those closest to the top right corner) all display a slightly better score on Online Availability than on the other three sub indicators combined. A cause could be that jobseekers need quite a lot services to be available in this life event: without quantity, there will never be top quality.

Countries who are not in the top quartile have much more mixed results. For example, Sweden and Switzerland both have good scores for the combined indicator but a lower score for Online Availability. Bulgaria on the other hand can provide many services (as shown by its high Online Availability score) but struggles to make these truly attractive to users.

Zooming in on the quantity of information and services provided, figure 5.3 below shows the 2012 and 2014 Online Availability scores by country.

Figure 5.3: Online availability in 2012 and 2014 for Losing and finding a job per country (%)

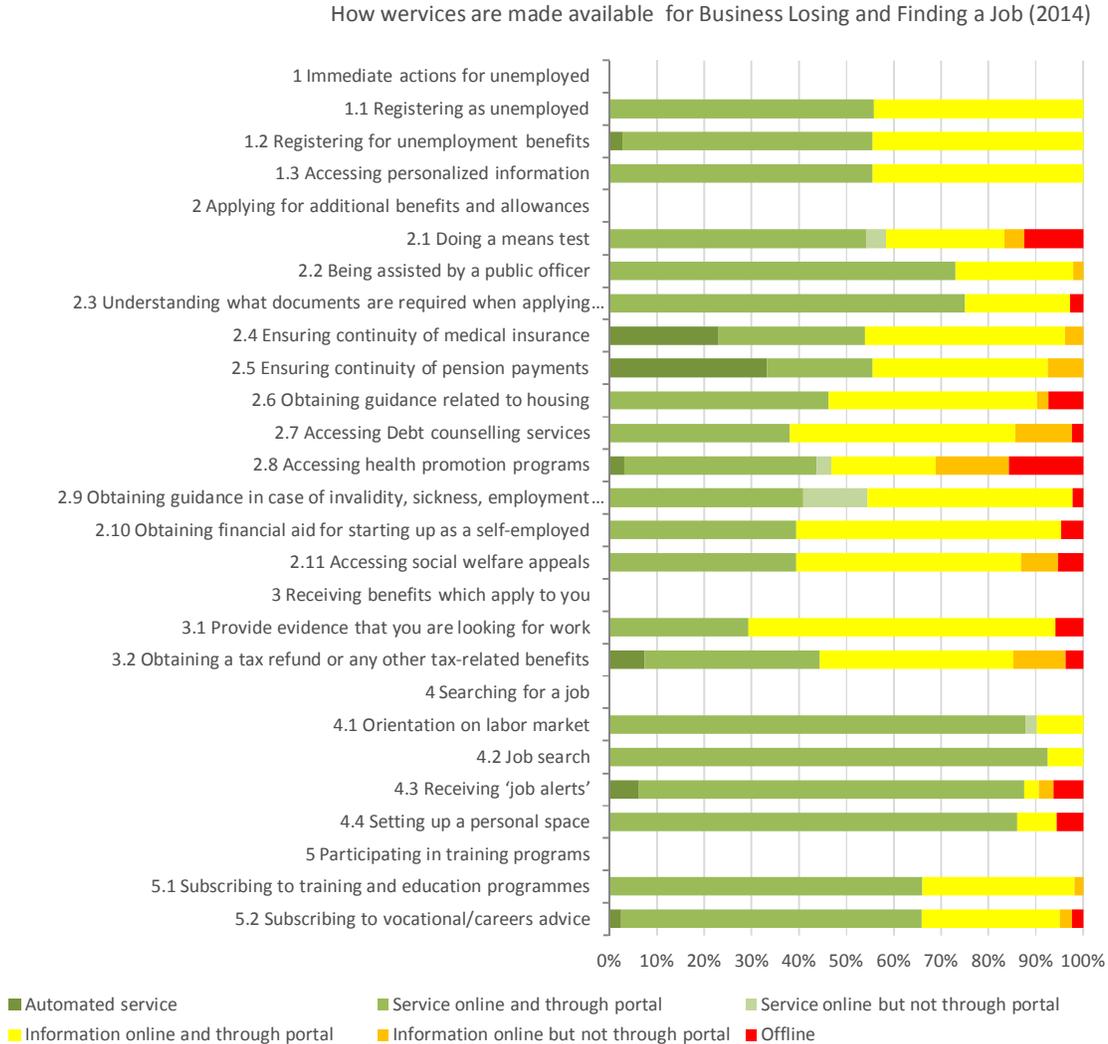


There are large differences among the European countries when it comes to supporting jobseekers. Portugal attained the maximum possible score of 100%, indicating that all its services are now fully online or even automated. In contrast, twelve countries score less than 75%. As a result, Portuguese users can complete the journey of Losing and finding a job via online channels, many users in other European countries will need significant offline interaction.

Relatively few countries have made significant progress over the last two years and as a result, the European average has only gone up four points. Still, there are a number of countries who have made exemplarily gains. Norway's score rose 19 points to 93%. Other examples include Germany and Latvia. On the other hand, ten countries made no or negative progress and a further three countries only gained one point.

Figure 5.4 below sets the life event of Losing and finding a job step by step. In total, the jobseekers will go through five stages and 22 interactions with government. The figure shows to what extent these steps are provided online by European governments.

Figure 5.4: How services are made available for the Losing and finding a job life event (2014, EU28+, %)



One notable conclusion from the figure above is that 'finding a job' is better supported by eGovernment services than 'losing a job'. The interactions in phase 4 (Searching for a job) are available in almost 90% of the cases, indicating that most European jobseekers can look for a job via publically provided online channels. The assessed interactions in phase 5 (participating in training programs) are also often provided fully online, although to a lesser extent.

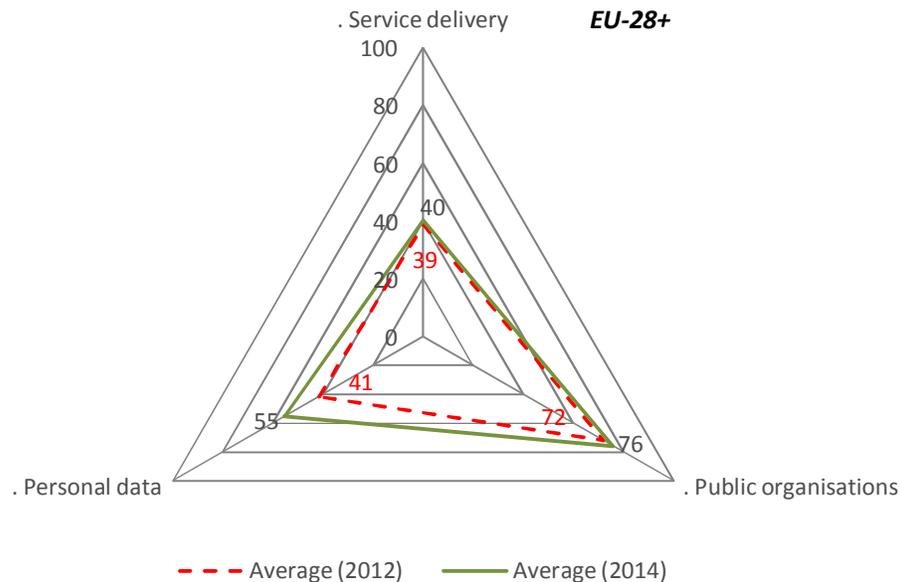
The interactions in phases 1-3 are less often fully supported online. The score for services which are provide online is hardly anywhere above 60% for these interactions. On the other hand, information is often well available, so that users who cannot complete the actual service online can at least obtain information about the service. An exception is step 2.8, Accessing health promotion programs, which is completely unavailable online in 16% of the cases.

The use of portals is very common across Europe for this life event. The vast majority of countries uses portals to links to virtually all of their services and information on Losing and finding a job. In fact, not a single participating European country fails to provide portals in 8 of the 22 interactions. Automating is markedly less common. For example, registering as unemployed (step 1.1) and registering for unemployment benefits (step 1.2) are two distinct steps in almost all of the European countries. The second step is marked as ‘automated’ in only one European country. Only steps 2.4 (Ensuring continuity of healthcare insurance) and 2.5 (Ensuring continuity of pensions payments) are automated in a significant number of countries.

5.3 Transparent Government

Losing one’s job means entering a period of uncertainty. In such a time, when people become more dependent on the government, it is important that government is transparent and open about what can be expected in the time ahead. This goes beyond simply stating what government expects from people, it also means stating what can be expected from the government. Figure 5.5 below shows the score on Transparent Government for Europe as a whole. This score comes from three sub indicators: Transparency on service delivery, Transparency on Public organisations and Transparency on Personal data.

Figure 5.5: Three components of Transparency for Starting up a business: Service delivery, Public organisations and Personal data (2014, EU28+, %)



There are large differences in scores between the three sub indicators. Transparency on public organisations scores 76%, which is a good score. This high score, the highest of all life events on this sub indicator, shows that jobseekers can have a clear view on how government agencies work and how they are organised. Welfare agencies responsible for this life event are often semi-independent agencies at some distance from the ministries or regional departments. This score suggests that these agencies feel the need to explain how they work. They have made some progress over the last two years as the score is 4 points up compared to 2012.

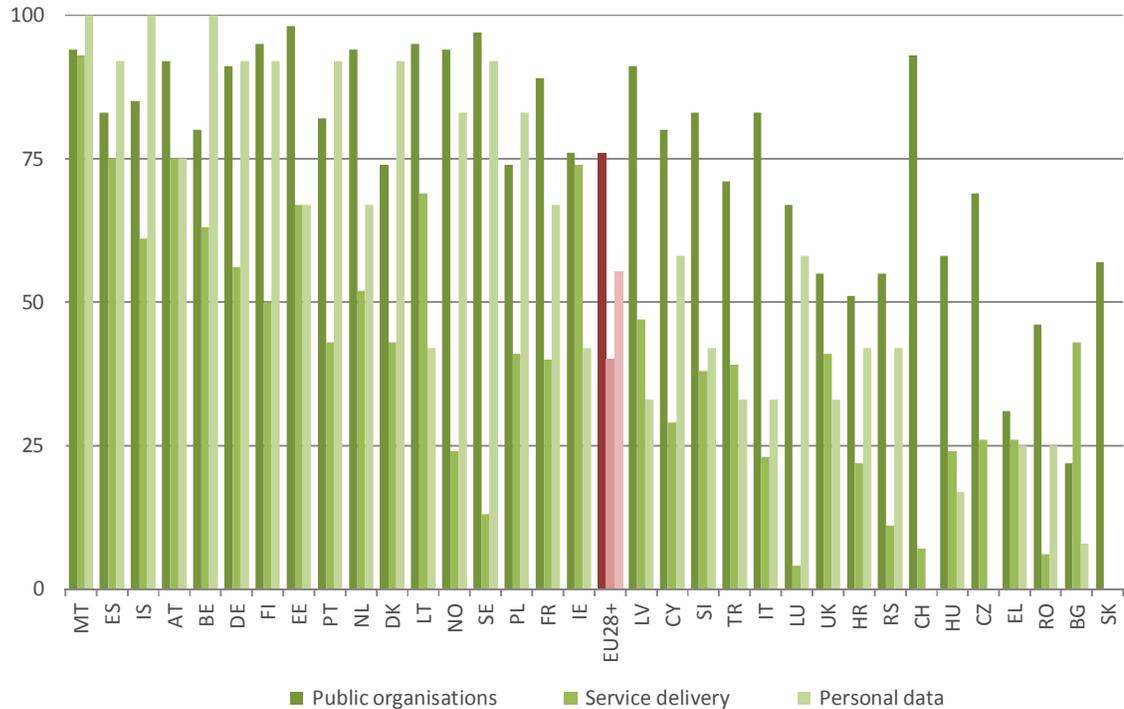
The good score on organisations stands in contrast to a low score on Transparency on Service delivery, which is only 40%. The low score indicates that while users know *who* is delivering services, they are often left in the dark about *how* and *when* the services will be delivered. For example, users may be unable to find out via the online

channels when their request for unemployment benefits will be processed. Alarming, Europe has made little progress on the issue as the score for this sub indicator has only increased 1 point over the last two years.

Much more progress has been made in the field of personal data. This score has increased from 41% to 55%, which is up 14 points, a increase of over a third of the original score. In absolute terms, 55% is still not particularly high, indicating that European welfare agencies will need to be even more open on which personal data they hold and how citizens can respond to this.

Moving down from the European level to the country level, figure 5.6 shows the three scores for the three aspects of Transparency by country.

Figure 5.6: Three components of Transparency for Losing and finding a job: Service delivery, Public organisations and Personal data per country (2014, %)



In the graph above, countries are ordered by their overall Transparency score for this life event. Regarding the element of transparent public organisations, many countries have high scores. Eleven countries attain a score of over 90%. Estonia, Sweden, Finland and Lithuania are the leaders in this regard. Furthermore, there are many countries that are well underway in this regard, as a further nineteen countries have scores between 50% and 90%. This indicates that welfare agencies responsible for jobseekers are very transparent about themselves.

The results are more mixed as regards Transparency on Personal data. Excellent examples are provided by Malta, Portugal and Belgium, who all attain the maximum score of 100%. But this good practice is not spread far. Sixteen countries score under 50%. Switzerland, the Czech Republic and Slovakia score no points at all.

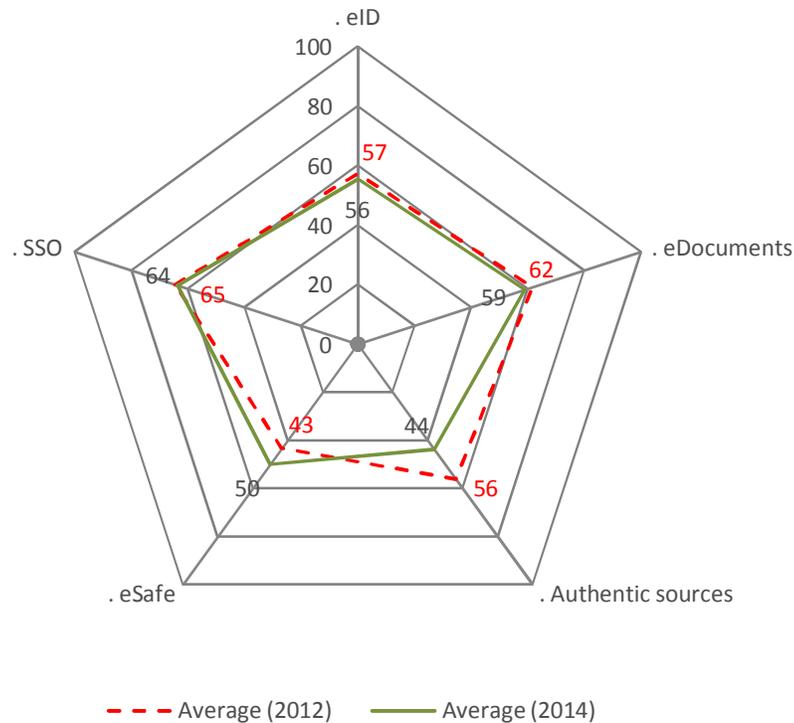
European countries struggle most with transparency on the delivery of services to jobseekers. Ten countries score very low, under 25%, on this sub indicator. These ten include a number of countries which score very well on the other two sub indicators. Good practice is rare for this aspect of the life event. Malta scores 93%, followed by Austria and Spain which score 75%. Many countries have much better scores on Transparency of service delivery in other life events, indicating that good scores are not impossible but will require more effort everywhere in Europe.

As cross border services are not applicable for Losing and finding a job, Cross Border Mobility is not measured for this life event. The next paragraph will discuss the use of Key Enablers.

5.4 Key Enablers

Figure 5.7 shows the availability of the main Key Enablers, i.e. eID, eDocuments, Authentic Sources, eSafe and Single Sign On, within the Losing and finding a job life event.

Figure 5.7: Availability of Key Enablers within the Losing and finding a job life event (2012 v 2014, EU28+, %)



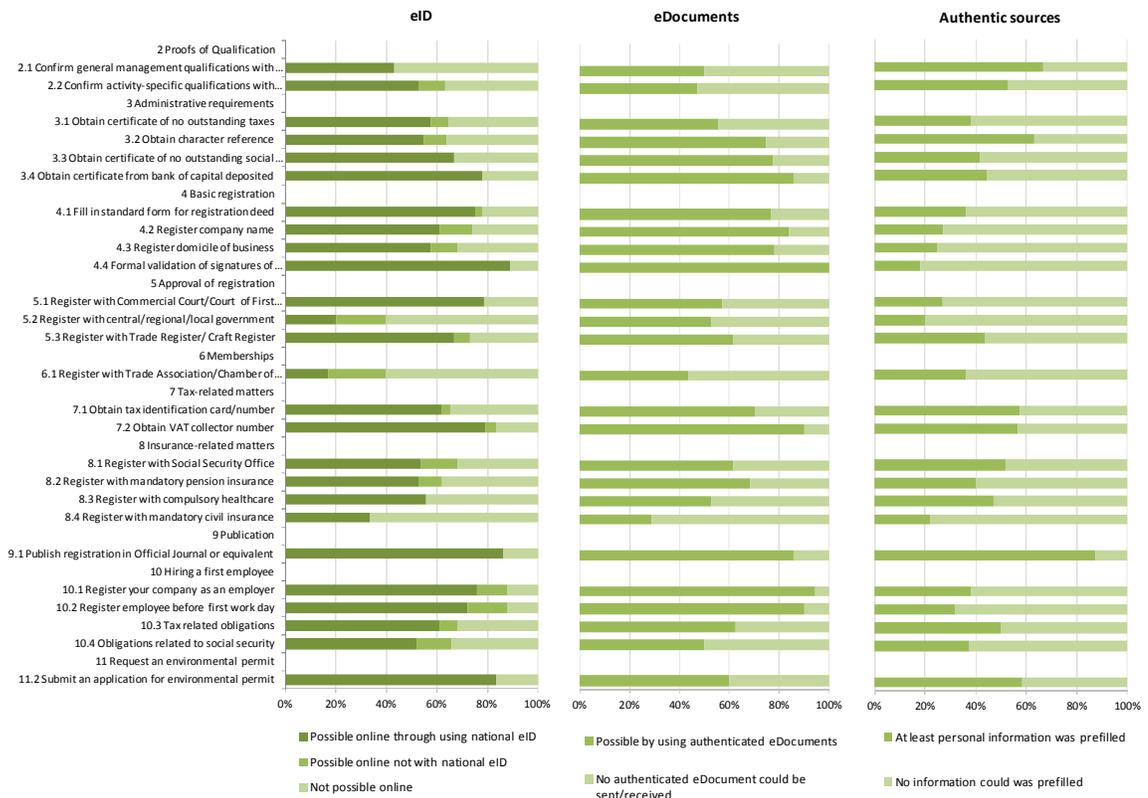
For this life event, Single Sign On (SSO) is the Key Enablers which is used most to build good eGovernment services. The score for SSO is 65%, which up 1 point compared to 2012. The score for eSafes also went up. In fact, it increased by 7 points to 50%, indicating that European welfare organisations now make significantly more use of digital places to safely store information.

Notably, scores on the sub indicators, eDocuments, eID and Authentic Sources, have all decreased since 2012 to 59%, 56% and 44% respectively. Especially the score on the use of Authentic Sources is disappointing. This reflects the finding of paragraph 5.2.1 that this life event has a lot of unused potential for automating.

The heavy loss in score for Authentic Sources is due to a number of reasons. Some countries actually make slightly less use of the enabler than they did two years ago. For other countries, using Authentic Sources was classified as 'not applicable' in 2012. By 2014, the use of this enabler was found to be possible (and thus applicable) but not practices, so that these countries scores 0%. Similarly, Serbia was not included in the 2012 measurement but was included in the 2014 measurement, scoring 0%. Finally, the rest of Europe made virtually no progress to compensate for these effects.

Reviewing the use of Key Enablers in more detail, figure 5.8 shows the average availability of eID, eDocuments and Authentic Sources per service.

Figure 5.8: Integration of Key Enablers per service in the Losing and finding a job life event (2014, EU28+, %)

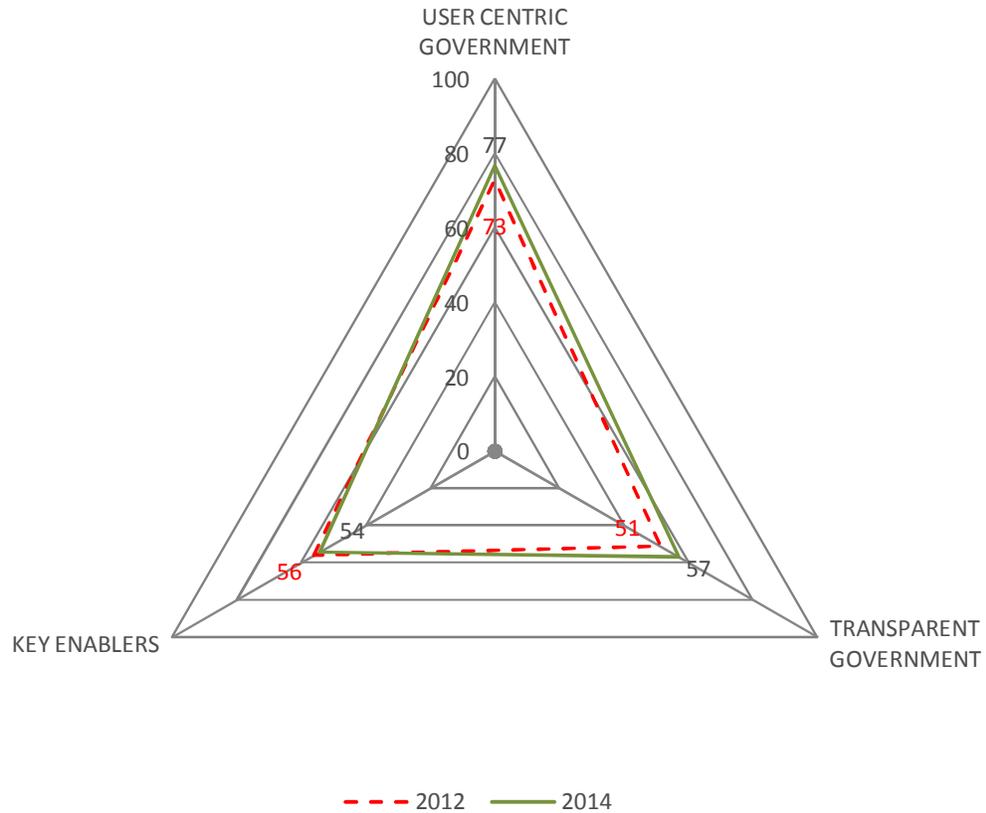


As the above figure shows, eIDs are generally available in about half of the cases. Registering for unemployment benefits (step 1.2) and Job search (step 4.2) are best supported by eID, although this does not always mean the national eID but can also include other methods of online authentication. As regards the use of eDocuments, the wide spread of eDoc use for job searches is notable. This may include the downloading and uploading of diplomas, list of requirements and curriculum vitas. As regards the use of Authentic Sources, the possibility to use these remains quite limited for this life event. Only three of the steps (2.4, 2.5 and 4.2) are supported by data from other sources in over 60% of the cases.

5.5 Overall

In conclusion for this life event, figure 5.9 provides an overview on the scores of the three top level benchmarks for Losing and finding a job.

Figure 5.9: Four top level benchmarks Losing and finding a job; User Centricity, Transparency and Key Enablers (EU28+, %)



Europeans who go through the life event of Losing and finding a job will find that eGovernment services provided to them are quite user centric. The score for User Centricity stands at 77%, which is up 4 points compared to the score in the 2012 measurement. For a citizen-oriented life event, this is a good score. As we have seen in paragraph 5.2 this good score comes from substantial quantity in services provided as well as above average quality.

Europe has made most progress on Transparency. The score has increased 6 points over the last two years to 57%, which is good compared to other life events but not too high a score in absolute terms. European citizens could benefit from more transparency, especially with regard to Transparency on service delivery.

Cross Border Mobility has not been measured for this life event as this is not applicable for cross border interaction. The score for Key Enablers has been measured. The score is now 54%, which is lower than two years ago. This reflects that Europe has made very little progress in employing more technical solutions to the problems of users, in this case jobseekers.

6 Studying

'The digital revolution increasingly affects all aspects of our lives, and education is no exception.'

Commissioner Tibor Navracsics

25 February 2015, at European Democrat Students Winter University²¹

6.1 Introduction to life event

The next paragraphs present the results of the 2014 eGovernment Benchmark assessment of services for Studying in European countries. The results address four different sides of eGovernment services, all equally important to facilitate (prospective) students in their needs:

- **User Centricity:** Are students able to obtain transactional services remotely and are the services easy to understand and quickly obtainable?
- **Transparency:** Can students easily find information on the use of their personal data, the roles and responsibilities of public organisations and the way the service is organised? Can they influence policy making or public organisation performance?
- **Cross Border Mobility:** Can students comply with administrative requirements from abroad and are cross-border services designed in such a way that the idea of a Digital Single Market is stimulated in this field?
- **Key Enablers:** Are services for students provided seamlessly by using technical enablers such as eID, Single Sign On and eDocuments?

Key findings

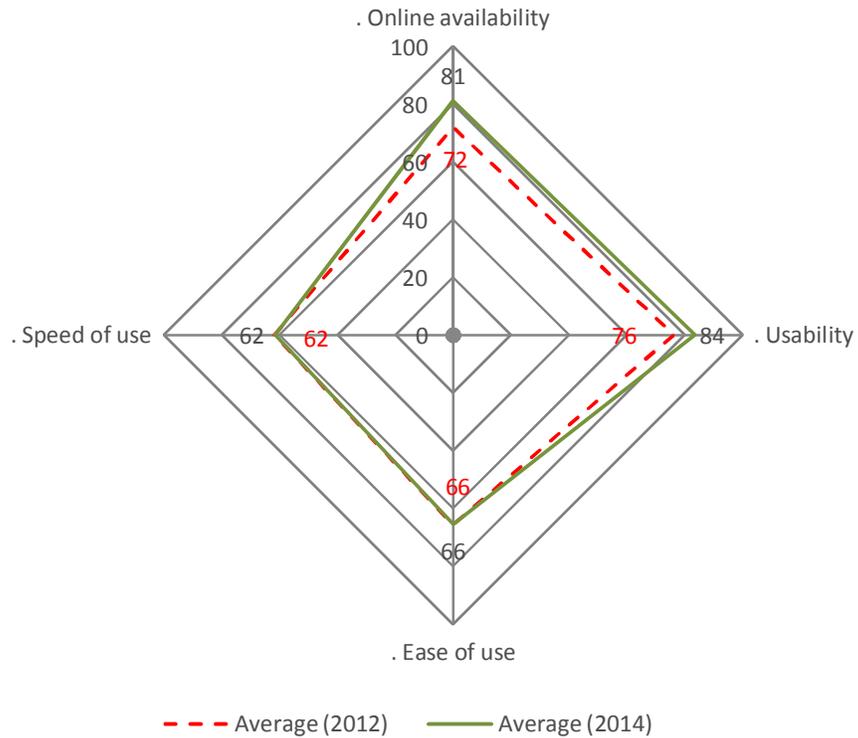
- *Many services to students are available online. In this sense, students are better supported via the online channels than other citizens and are just as well supported as businesses.*
- *However, students can make less use of portals than citizens going through other life events. European universities and government departments have made good progress over the last two years in supporting cross border moving students via the online channels. Almost all European countries can follow this trend and provide at least basic support.*
- *Overall there is steady progress in how user centric this life event is, but there is still room for improvement.*
- *Universities and departments of education are not very transparent about their own operations and organisation, but they have open up to some extent as regards the personal data they hold.*
- *Over 75% of the European universities now have a dedicated international office with an online presence, supporting students from other countries*
- *Potential for automation of this life event may be limited, but it is certainly not exploited to the fullest extent. The reuse of information has declined over the last two years.*

6.2 User Centric Government

Figure 6.1 shows the scores of each of the four elements of User Centricity for the Studying life event. The results from the 2014 measurement are compared to those from the earlier measurement in 2012.

²¹ Full text at http://ec.europa.eu/commission/content/going-digital-how-are-european-universities-doing_en

Figure 6.1: Four components of User Centricity for Studying: Online Availability, Usability, Ease of Use and Speed of Use (2012 vs 2014, EU28+, %)

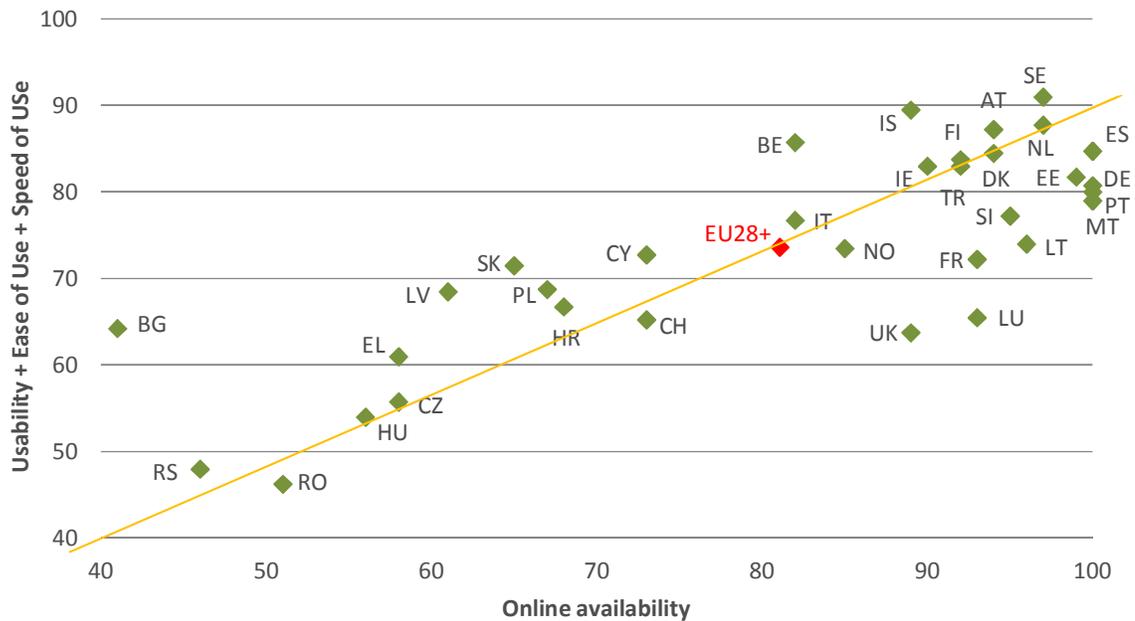


The score for Online Availability is now 81%, which is a good score, indicating that many of the services in this life event are completely available via the digital channels. Usability scores 84%, indicating that many support and help functionalities are online as well. The score for the Ease of Use sub indicator is 66%, indicating that information for students is usually easily accessible but that there are still many exceptions to that trend. The score for Speed of Use is 62%, indicating that while the online channels are probably already faster than traditional channels, there is still unused potential to guide users through them quicker.

Analysing the progress since 2012, many more services are now offered online (Online Availability up 9 points). At the same time, the number of support functions increased significantly as well (Usability up 8 points). The magnitude of this gain is substantial: particularly Online Availability has risen fast, indicating that European governments and universities have quickly brought a lot of service online. At the same time, no progress has been made with regards to the user experience. The scores for Ease of Use and Speed of Use remained exactly the same, a view we have seen with both other life events as well.

This trend mirrors the User Centricity results of the other two life events discussed in this report: the quantity of services (and information) has increased but the user experience did not improve at all. Figure 6.2 provides more detail by comparing the score of individual European countries on Online Availability to their score on the other three User Centricity sub indicators combined.

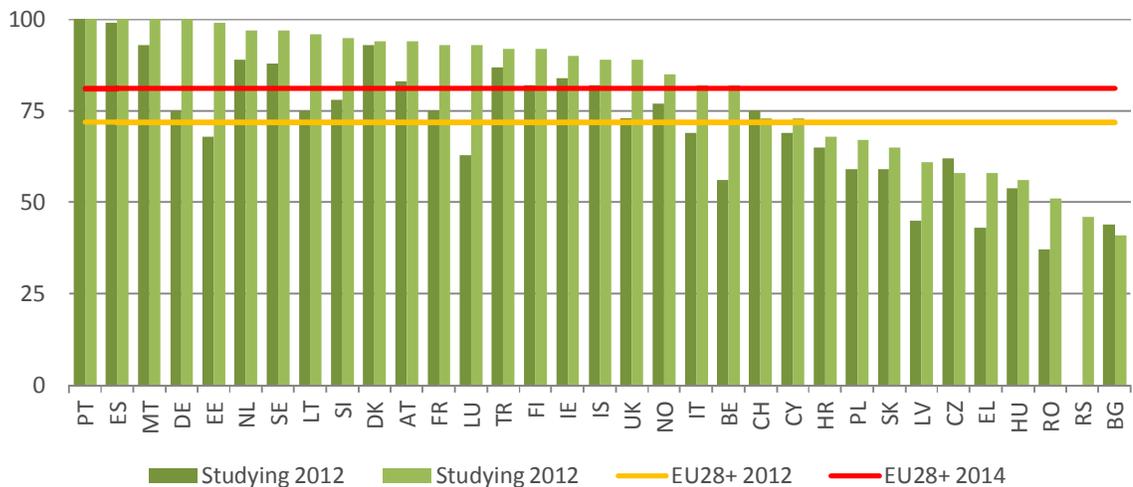
Figure 6.2: Correlation Online Availability versus Usability + Ease of Use + Speed of Use by country for Studying (2014, %)



The majority of European countries has a better score on Online Availability than they have on the other three sub indicators. As 16 countries score over 90%, it is safe to conclude that this is caused by high Online Availability scores rather than low scores on the other indicators. As a result, the differences among European countries are generally not as large for Studying as they are for other life events, indicating that a common European base in eGovernment for education may be achievable.

Figure 6.3 explores the progress of individual European countries in Online Availability, thus indicating to what extent these countries can now provide online services to students.

Figure 6.3: Online Availability in 2012 and 2014 for Studying per country (%)



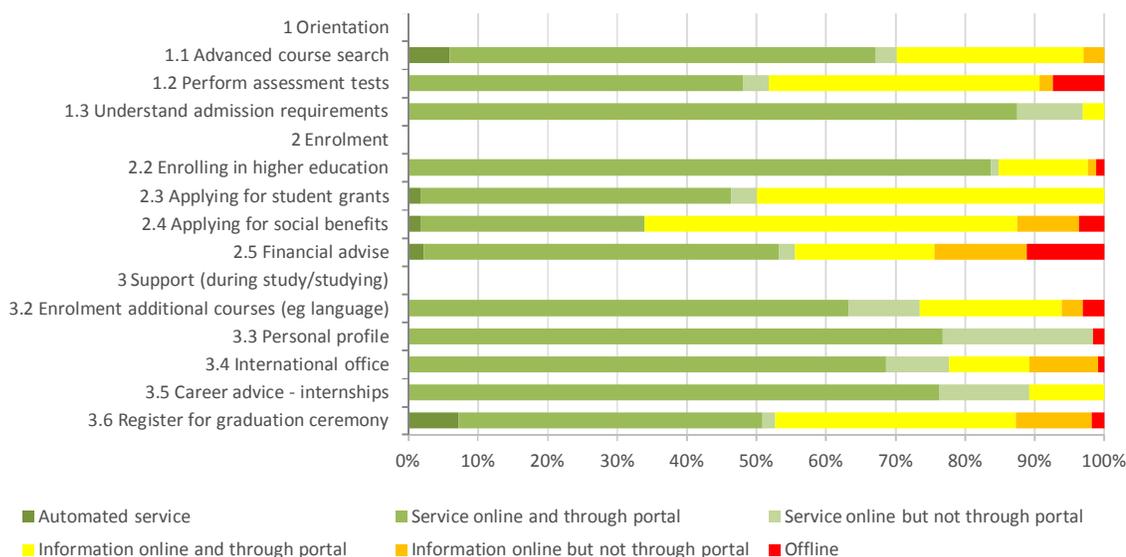
Four countries attained the maximum score of 100%, indicating that they all services under review fully online or even automated. These countries are Portugal, Spain, Malta and Germany, with Estonia scoring 99%. In total, twenty-one countries score over 75%, indicating that there is a substantial group of countries which has developed eGovernment services for Studying.

Many countries have made good progress since 2012. Most notable are Estonia (score up 31 points) and Luxembourg (score up 30 points). Both countries have set a very large step. Not all countries improved their

electronic services to students in such a big leap, but progress is spread wide. The score of twenty-eight out of the thirty-three countries under review increased between 2012 and 2014. Portugal could not make any more progress as it has already attained the maximum score in 2012 and Serbia could not either as it was only measured for the first time in 2014. The other three countries, Switzerland, the Czech Republic and Bulgaria saw their scores decrease by minor margins.

Figure 6.4 below examines the extent to which services and information are provided online, in this case by step in the journey of the life event. This journey when Studying consists of 3 phases and a total of 12 interactions.²²

Figure 6.4: How services are made available for the Studying life event (2014, EU28+, %)



The interaction with the highest online channel availability is step 3.3 (viewing a) ‘Personal profile, which is fully available online in over 98% of the cases. The interaction step 2.4, ‘Applying for social benefits’, which is fully available online or automated in only 34% of the cases. While many countries at least provide information on step 2.4, this is not always the case for step 2.5, (gaining) ‘Financial advice, which is completely offline in over 11% of the cases.

Overall, steps of the journey which are within the domain of ‘pure’ education focussed public organisations are more often available online then parts of the journey that require interaction with other government departments. These results suggest that cross-government cooperation is not optimal in many European countries.

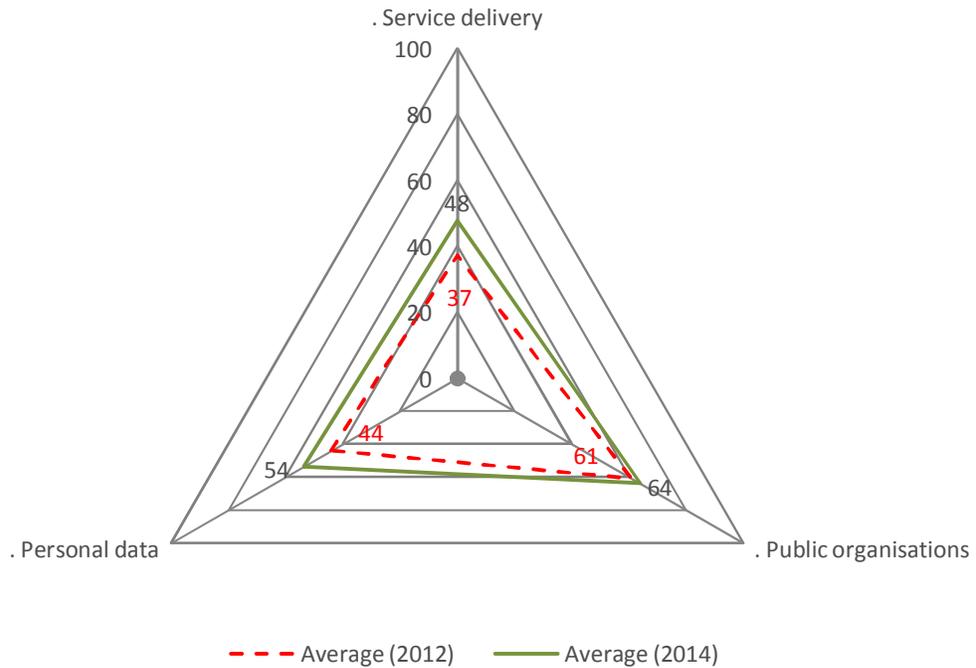
The use of portals is significantly less common for this life event than it is for other life events. For every step of the journey, portals are lacking in one or more European countries, suggesting that services and information on Studying are generally available but hard to find. This is represented in the graph by the relatively broad blue and orange horizontal bars. Automation is another challenging issue for this life event. Only five of the steps are automated in at least one European country and these five examples are seldom adopted by other countries. Only steps 1.1 (Advanced course search) and 3.6 (Registering for graduation ceremonies) are automated in multiple countries. This suggests that although potential for automation may be limited, it is certainly not exploited to its full extent.

6.3 Transparent Government

Figure 6.5 shows the EU28+ scores on the three elements of Transparency: Transparency of Service delivery, Personal data and Public organisations. The results of the 2014 measurement for Studying are compared to the 2012 results.

²² Interactions 2.1 and 3.1 are not assessed on Online Availability and are therefore intentionally not included in the figure.

Figure 6.5: Three components of Transparency for Studying: Service delivery, Public organisations and Personal data (2014, EU28+, %)



Transparency on public organisations is now 64%. This is the best score of the three Transparency sub indicators for this life event. Still, it is not very high compared to the other two life events under review in this report. It is also only a modest increase compared to 2012, up 3 points. European organisations are not much more open about their own operations and responsibilities.

Transparency on personal data has improved over the last two years, up 10 points. This suggest there is now more attention for the personal data universities and government hold and that some measures have been taken to make this phenomenon more transparent to users. These measures remain incomplete as the score is still only 54%. The score for the life event of Studying is in line with other life events however. Europe continues to struggle with Transparency on personal data in all domains.

The score for Transparency on service delivery is now 48%. European organisation focussed on Education have made good progress in this regard over the last two years, as the score is up by 11 points, which is an increase of almost a third of the original score. Still, 48% is not a very good score in absolute terms or compared to other life events. Students will still encounter a lot of uncertainty about what to expect when from European education organisations.

Figure 6.6 shows the scores on the three sub indicators of Transparency for individual European countries. These countries are ordered from left to right based on their score for Transparency across the three sub indicators.

Figure 6.6: Three components of Transparency for Studying: Service delivery, Public organisations and Personal data per country (2014, %)



There is significant variation between the various European countries, with large differences between the top and bottom quartiles. Furthermore, there are substantial differences within many countries between the scores on the three sub indicators. Both findings suggest that there is often no unified approach to Transparency in Education on the national level, let alone at the European level. Only Spain, Malta and to a lesser extent the Netherlands have consistently high scores on all three sub indicators.

As regards Transparency on public organisations, variation is relatively low with all countries at least scoring over 25%, indicating that there is at least basic information available on the responsible public organisations. No country provides this information perfectly, however, and therefore no country attains the maximum possible score. Leaders in this regard are Spain, Malta and Austria.

The scores for Transparency on service delivery show more variation. Portugal has the maximum score of 100% while Romania and Serbia score no points (for Denmark, the assessments in question were classified as ‘not applicable’). Overall, providing good transparency on how and when government will work via the online channels is possible, but often not achieved by European education organisations.

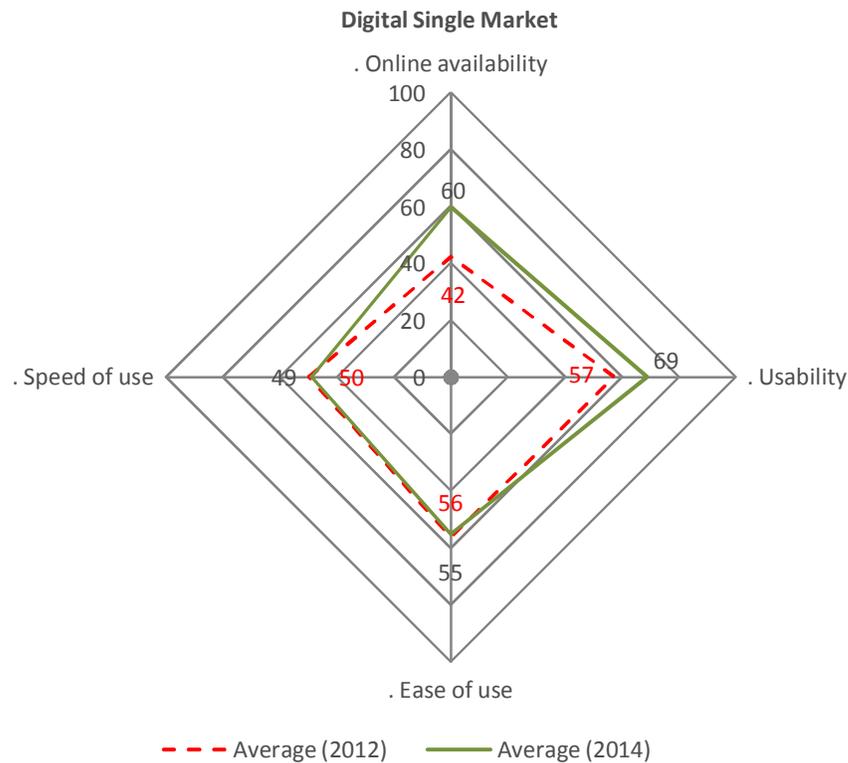
Transparency on Personal Data shows even more mixed results across Europe. Nine countries achieve a score of 100%: Austria, Belgium, Denmark, Germany, Iceland, Malta, the Netherlands, Spain and Sweden. On the other hand, eight countries score less than 10%, five of which score no points at all. Compared to last year, many countries have made big leaps, indicating that transparency in this field can be provided as long as it is a priority. Good scores are not limited to countries that always top these charts. The Croatian organisations responsible for this life event, for example, achieve a score of 92%.

6.4 Cross Border Mobility

Education is one of the domains which are leading cross border mobility. Exchange students and degree seeking students studying in another European are a common phenomenon. Facilitating the life event of Studying across borders is therefore important for the education level, and eventually the competitiveness, of Europe. The eGovernment Benchmark assesses how well the online channels of public organisations (universities and education departments) support students studying abroad.

In the graph below, figure 6.7 shows the scores on the four elements of Cross Border Mobility for the life event of Studying. These elements mirror the sub indicators for User Centricity, but taking students studying abroad as the main users.

Figure 6.7: Cross Border Mobility; Online Availability, Usability, Ease of Use and Speed of Use for Studying (2012 vs 2014, EU28+, %)



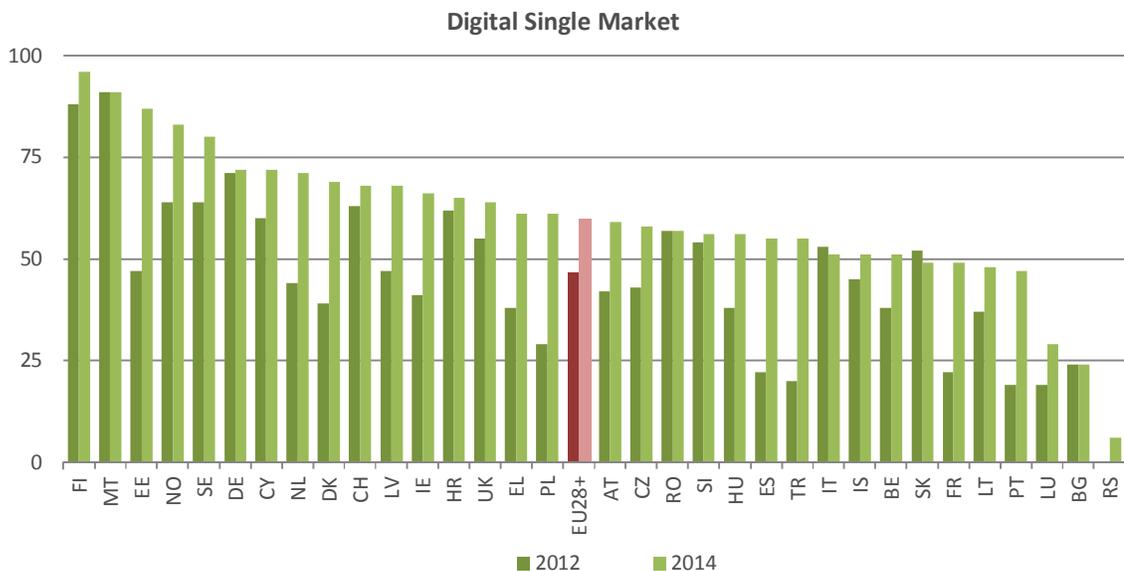
The Cross Border Mobility scores for Studying are reasonably high, especially compared to other citizen-oriented life events. Online Availability is now at 60%, which is a reasonably high score. The gap to the Online Availability for domestic users is 21 points (Online Availability for the User Centricity top level benchmark is 81%), which is a large gap but not as large as the same gap in other citizen-oriented life events. This suggests that while students studying abroad will not be able to use all electronic services, they can at least use the majority of them. In that sense they are better off in the domain of Education than in other domains.

Usability is 69%, indicating that a number of support and help functionalities are online for cross border moving students. Ease of Use for them is at 55% which is good compared to other life events and not bad compared to the Ease of Use for domestic users. The score for Speed of Use is lower, at 49%, indicating that while the majority of eGovernment services are available online along with support functions and are reasonably easy to use, this does not create an experience which is particularly fast.

Looking at the progress since 2012, much more services and functionalities can now be completed fully online, with Online Availability up 13 points and Usability up 18 points. On the other hand, user experience for Studying has not improved at all; in fact, Ease of Use and Speed of Use scores both declined by 1 point.

Figure 6.8 below shows the scores for the top level benchmark of Cross Border Mobility (the weighted average of all four sub indicators) by European country for 2012 and 2014.

Figure 6.8: Cross Border Mobility for Studying per country (2012 vs 2014, %)



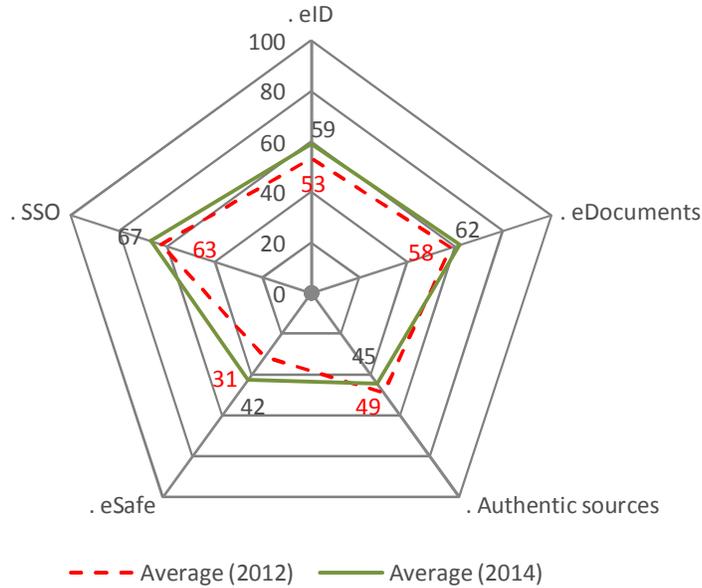
Finland is the leading example in providing eGovernment to foreign students, scoring 96% on this top level benchmark. Other good practices are to be found in Malta, Estonia, Norway and Sweden. Estonia made most progress over the last two years, with its score rising an impressive 40 points. Another big leap was made in Turkey. The Turkish score on Cross Border Mobility for Studying more than doubled, rising 35 points or a 175% increase. Almost all countries made some progress, with Italy and Slovakia being the only exceptions (and Serbia being assessed for the first time).

Differences among European countries are not very big for this life event. Twenty-four countries have a score between 72% and 48%. This indicates that eGovernment for cross border students are a priority in almost all of Europe, although this does not lead to very good services immediately. Only three countries struggle to keep pace and score below 30%.

6.5 Key Enablers

Figure 6.9 shows the availability of the main Key Enablers within the Studying life event i.e. eID, eDocuments, Authentic Sources, eSafe and Single Sign On.

Figure 6.9: Availability of Key Enablers within the Studying life event (2012 v 2014, EU28+, %)

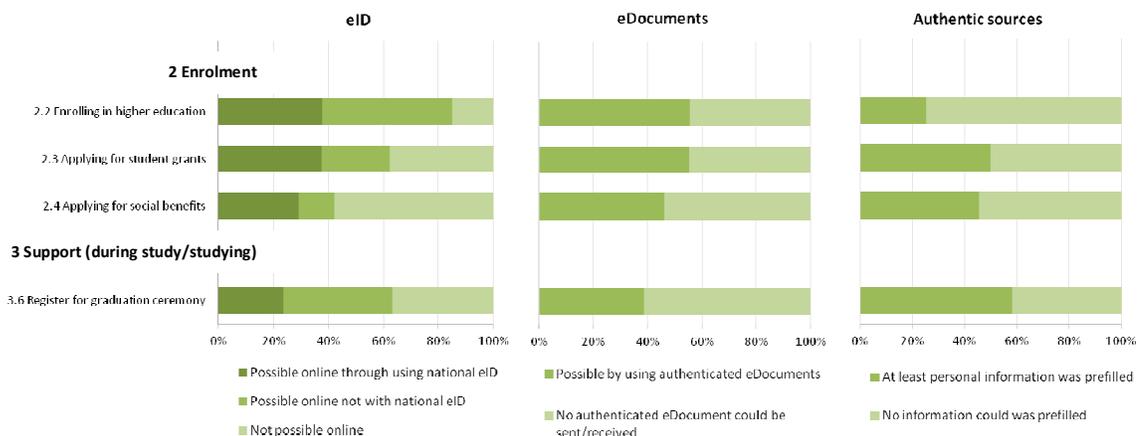


European organisations responsible for education make somewhat more use of four out of the five Key Enablers than they did at the time of the 2012 measurement. The scores for the use of eSafes, eID, eDocuments, and Single Sign On are 42%, 59%, 62% and 67% respectively. Of these four, the use of eSafes scores lowest but has seen most progress, up 11 points in two years. The other three sub indicators rose 4-6 points. All of these are modest increases.

On the other hand, the use of Authentic Sources has decreased over the last two years. The score for this sub indicator has decreased 4 points to 45%. Compared to other life events, the use of Key Enablers is at a reasonable level for Studying, with the use of Single Sign On being notably high. SSO functionalities are relatively common for universities.

Figure 6.10 examines the use of Key Enablers in more detail, reviewing the use of eID, eDocuments and Authentic Sources for four key steps of the journey behind the Studying life event.

Figure 6.10: Integration of Key Enablers per service in the Studying life event (2014, EU28+, %)

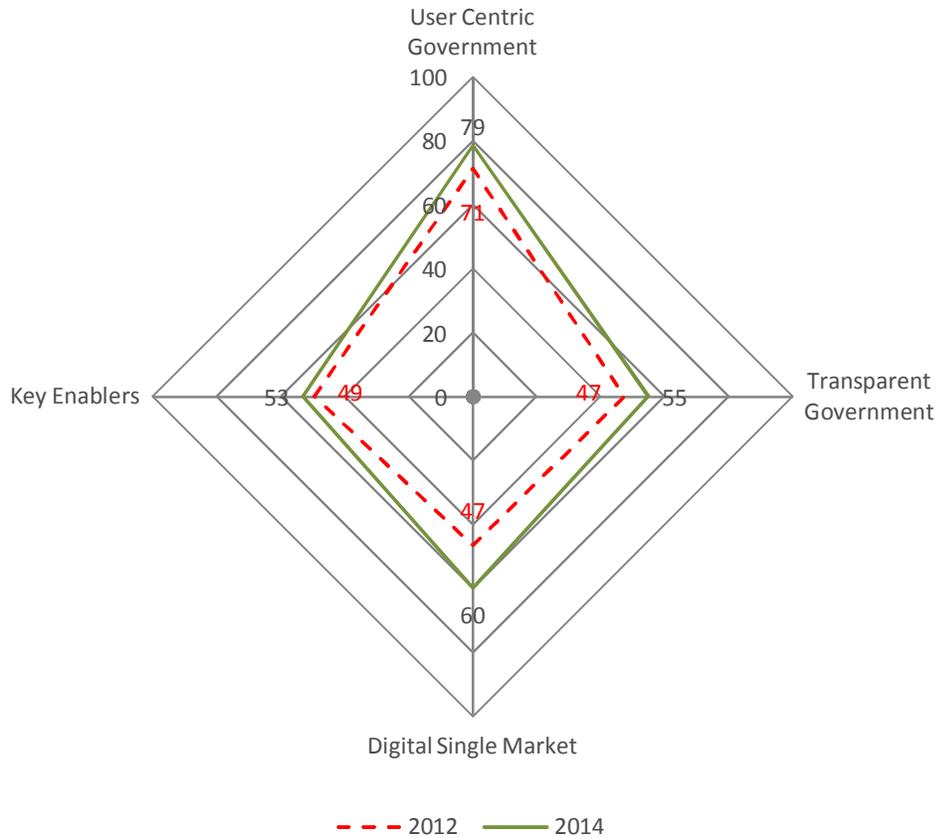


The use of eID is quite common for Enrolling in higher education (step 2.2). To complete this step fully online, a good method of electronic identification is indispensable. In under half of the cases where eID is available, this is a national eID tool, indicating that local or commercial methods of identification are quite common. Electronic Documents are most often applicable for Applying for student grants (step 2.3). The use of Authentic Sources is quite rare, with the exception of Registering for graduation ceremonies (step 3.6). In this step, information from other sources is reused for this interaction in almost 60% of the countries.

6.6 Overall

As a summary for this life event, figure 6.11 shows the scores of all four top-level benchmarks, i.e. User Centricity, Transparency, Cross Border Mobility and Key Enablers, on average for the EU28+.

Figure 6.11: Four top level benchmarks Studying: User Centricity, Transparency, Cross Border Mobility and Key Enablers (EU28+, %)



For a citizen-oriented life event, Studying is reasonably well supported by eGovernment services. Good progress has been made on all four domains over the last two years. The increase of the Cross Border Mobility score by 13 points is especially noteworthy. Online Availability is the highest scoring top level benchmark with a score of 79%, indicating that European students are supported in their journey most of the times.

Still, more work is needed, especially regarding the other three domains. Transparency and Key Enablers score 55% and 53% respectively. Despite the great progress, the Cross Border Mobility score of 60% is still somewhat modest as the field of Education is seen heavy internationalisation over the last years.

7 Clustering of countries to drive learning

‘Better regulation means efficient rules, minimum burdens for business and consumers, effective competition and high-quality services across pan-European markets.’

Vice President Andrus Ansip

26 November 2014, in the European Parliament plenary session²³

The European eGovernment Benchmark has evaluated online service evolution since 2001, at first by measuring basic service availability and sophistication. For over a decade it has supported policy makers, provoked valuable discussions, set new ambitions, and identified countries to learn from. A sustainable eGovernment should produce efficiency. Hence, innovation policies objectives should take into account not only the diffusion of online services and the citizen eGovernment usage, but also, for example, the degree of digitalisation of the back office, as a proxy of a Country ability to manage eGovernment projects in order to improve public administration efficiency and effectiveness through the correct use of ICT. Hence, new eGovernment performance indicators should be taken into consideration.

Moreover, despite investments and efforts in eGovernment, the results obtained by some countries do not seem to improve strongly over time and the use of eGovernment still remains at a low level. What are the factors that hinder the innovation actions? How can the characteristics of a country in terms of educational level of the population, different level centralisation of the government organisation, availability of adequate ICT infrastructures, etc influence the eGovernment performances and, hence, an eGovernment strategy?

Even if the strategic objectives remain the same, the operational objectives (and hence the actions to be taken in order to achieve them) can differ from country to country. Therefore, in order to define the specific eGovernment policies and strategies that a country should implement, it is important to understand:

- The impact of a specific context on eGovernment maturity performances;
- The contextual differences of countries with similar performances;
- The differences between countries with similar context but reaching different performances.

To understand these three factors, this year’s eGovernment benchmarking report presents a new element that could provide the basis for future developments: a country clustering exercise based on a two-step analysis.

7.1 A new explorative framework: Two-step analysis

The new element covers 30 out of the 33 countries that participate in the eGovernment Benchmark. Serbia, Switzerland and Turkey cannot be included yet as too much data on these countries is missing in the various datasets. All other countries are analysed in two steps.

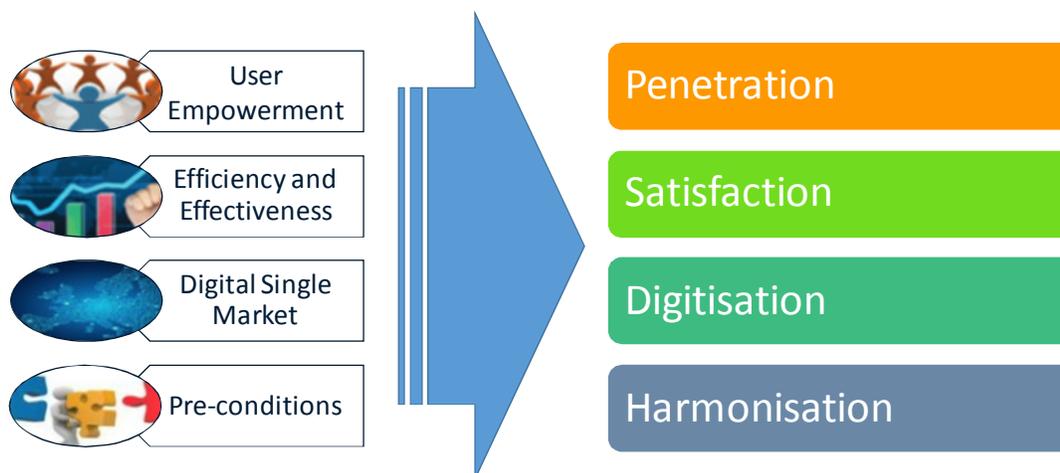
7.1.1 Step 1: Absolute indicators

The **first step** of the analysis is to assess and to compare the eGovernment through new performance indicators able to measure a country’s maturity, in terms of the ability of the Public administration to manage innovation, to improve efficiency and effectiveness through processes’ **digitisation**, while maximising the advantages for its users.

In the first step, eGovernment maturity is assessed through four dimensions, so-called absolute indicators. Figure 7.1 presents the relationship between the eGovernment Action Plan policy priority areas and the absolute indicators.

²³ Full text at http://europa.eu/rapid/press-release_SPEECH-14-2182_en.htm

Figure 7.1: Relationship between eGovernment policy priorities and absolute indicators



In the following, these four absolute indicators will be shortly discussed.

7.1.1.1 Penetration

The availability of digital public services in Europe has definitely risen in recent years. In order to understand the maturity of eGovernment supply, the market penetration can be described through the diffusion of online eGovernment services, which could be measured as a ratio between usage and either the total population or a specified part of the population, such as internet users.

Furthermore, the use of eGovernment services can be analysed in different users clusters, to understand what actions should be taken in order to maximise Penetration and to understand potential improvement in services availability. Users clusters will be set up through factors such as age, literacy rate, and social status..

7.1.1.2 Satisfaction

An important indicator to determine whether users will continue to use an online service, is their Satisfaction, both in terms of overall evaluation of the experience, and in terms of comparison with expectations and objectives. Satisfaction should be studied from the perspective of individual users, in order to better understand what drives satisfaction.

In order to improve Satisfaction, it is fundamental to carry out a citizen-oriented approach, through listening initiatives addressed to understanding users' needs and through planning services which are able to meet these objectives. Just as for Penetration, Satisfaction will be analysed in comparison to non-governmental eServices (e.g. eBanking, social networks, eCommerce), to understand the drivers of satisfaction.

7.1.1.3 Digitisation

The digitisation process and the ICT introduction in public administrations cannot overlook efficiency and effectiveness objectives. Therefore, eGovernment maturity is also represented by the public administrations ability to produce a procedure and services supply which is efficient and effective.

Efficiency can be represented by the ability to anticipate user's activities and needs, e.g. information that users do not have to provide because public bodies can get it from other sources. These variables represent back-office and front-office integration; hence they are able to represent back office digitisation, a proxy of savings achieved through process digitisation.

7.1.1.4 Harmonisation

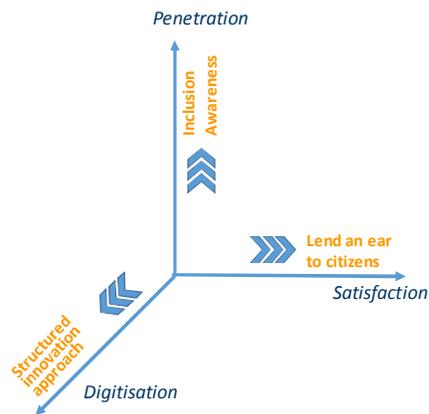
One task to achieve the European Digital Single Market objective, is for each country to improve the Harmonisation within agencies of its national public sector. This Harmonisation need is pushed on the one hand by technological motivation; and on the other hand by user's needs to take advantages of learning curves. Harmonisation is a proxy of public administration ability to coordinate innovation actions, homogenising the

supply of eGovernment services (e.g. standard websites layouts, authentication functionalities of different services or of the same service offered by different administrations), in order to reduce usage barriers, to exploit economy of scale and to foster a digital single market.

7.1.2 Country Assessment on eGovernment Performances

The identified absolute indicators are interconnected; therefore it is possible to combine them in a synthetic maturity index. It is important to evaluate each country performance for Penetration, Satisfaction and Digitisation indicators (**Error! Reference source not found.**figure 7.2), to understand which specific actions countries can take in order to improve their own eGovernment maturity. After all, context specific eGovernment policies can be more effective than a generic European strategy, which can be difficult to translate into concrete actions.

Figure 7.2: Action to improve eGovernment maturity



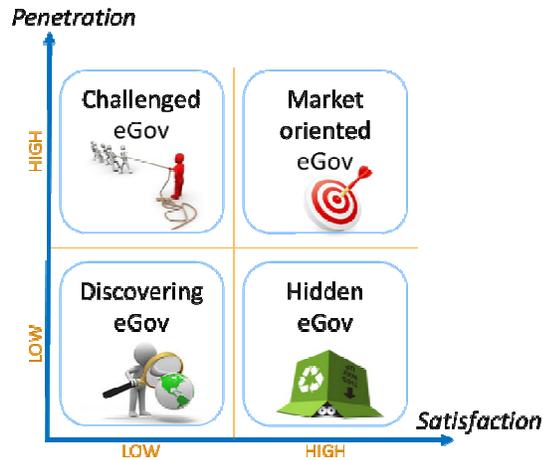
It is possible to highlight the relationship between the variables of Satisfaction, Penetration and Digitisation. Harmonisation is a proxy of each country's ability to coordinate innovation, and is introduced to verify the model's ability to forecast maturity.

7.1.2.1 Penetration versus Satisfaction

Comparing Penetration with user's Satisfaction (Figure 7.3), it is possible to identify four scenarios, that each represents a country's ability to distribute online services versus the extent the country responds to user's needs. Four scenarios are possible:

- **Discovering eGovernment:** A country with a lower level of satisfaction and a lower level of penetration might be a sign of an eGovernment which is still to be discovered broadly; significant efforts are needed to achieve eGovernment maturity, more structured policies and innovation plans have to be deployed without overlooking a citizen centric approach.
- **Challenged eGovernment:** Lower level of satisfaction with higher level of penetration might be the result of an eGovernment, which is challenged to provide citizens with services compliant to their needs; future actions should involve a more citizen-centric approach.
- **Hidden eGovernment:** Higher level of satisfaction with lower level of penetration might prove the Government's ability to offer quality services, but Government should investigate on what provokes the lack of usage, in order to exploit the investment in digitising Public Administration services.
- **Market Oriented eGovernment:** Higher level of both penetration and satisfaction might shows an eGovernment able to meet users' need, in a market-oriented approach, where citizens use online services and appreciate them.

Figure 7.3: Penetration – Satisfaction Scenarios

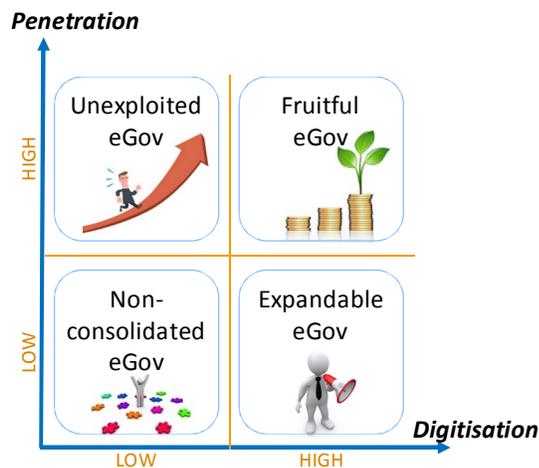


7.1.2.2 Penetration versus Digitisation

In order to understand a country's ability to exploiting ICT for increasing the efficiency of its processes, we could compare Penetration with Digitisation. Figure 7.4 shows that four scenarios are possible:

- **Non-consolidated eGovernment:** lower level of Digitisation and lower level of penetration might characterizes an eGovernment which doesn't utilize ICT opportunities yet, but is aiming to benefit from it in the future.
- **Unexploited eGovernment:** lower level of Digitisation combined with a higher level of penetration could mean that the Public Administration has digitised mainly its front. Digitisation the back offices is still ongoing, thus these countries are reaching a lower level of efficiency in managing its resources. There is room to exploit the advantages of high online use of eGovernment services.
- **Expandable eGovernment:** higher level of Digitisation together with lower level of penetration may suggest a scenario where the innovation process has been carried out efficiently, but the urgency exist to expand on the number of online users that currently prevents the administration to reap the potential advantages.
- **Fruitful eGovernment:** higher level of both Digitisation and Penetration may indicate a successful process of innovation, whereby the public organisations have achieved an efficient and effective way of working.

Figure 7.4: Penetration - Digitisation Scenarios

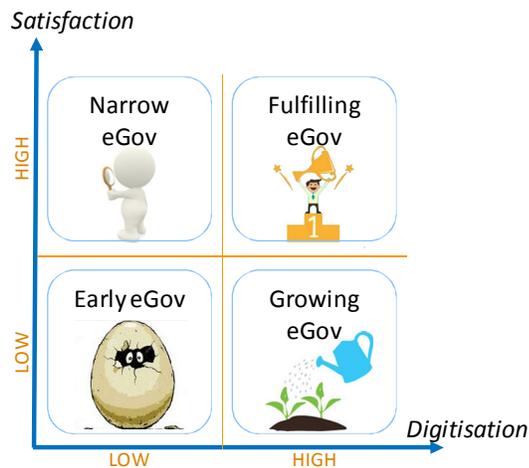


7.1.2.3 Satisfaction versus Digitisation

Comparing Satisfaction with process Digitisation (Figure 7.5) allows us to represent a country's ability to lead the internal innovation process without overlooking citizens' needs, and to manage internal-external equilibrium. Four scenarios are identified:

- **Early eGovernment:** lower level of Digitisation and satisfaction might show the difficulties for a Public Administration to develop eGovernment services that fulfil user's needs and at the same time to generate a higher level of efficiency in digitising its internal processes. For these governments, it is important to understand if the causes are related to exogenous or endogenous factors.
- **Narrow eGovernment:** lower level of Digitisation and higher level of satisfaction may reveal a perception of high quality of online services by citizens, but these online services are supported by internal process digitisation only to a limited extent and consequently leave room for governments to improve on the latter and to harvest.
- **Growing eGovernment:** higher level of Digitisation combined with lower level of satisfaction may show an eGovernment with strong focus on digitising internal processes but so far without a strong correlation with user's needs. Growing the satisfaction of users will lead to the next scenario.
- **Fulfilling eGovernment:** higher level of both Digitisation and satisfaction may represent an eGovernment fulfilment, where the digitisation process serves as an example for others and services on offer respond to users' needs.

Figure 7.5: Satisfaction - Digitisation Scenarios



Having assessed the eGovernment maturity using these absolute indicators, this maturity can be set in the right context using a number of relative variables.

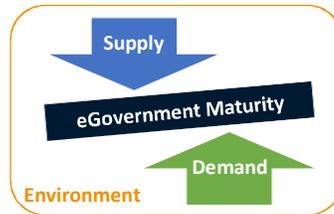
7.1.3 Step 2: Relative indicators

Consequently, a **second step** of the analysis is performed in order to understand how the eGovernment performance of individual countries is influenced by exogenous factors shaping a specific context.

There are three categories of these contextual, or relative, indicators. These three categories, visualised in the below, are:

- **Government supply:** The spread of eGovernment services, including investments and efforts in innovation, diffusion and quality of services;
- **eGovernment demand:** Citizens' willingness to use online services. This includes factors that enable citizens to use the online channel, such as eReadiness, Awareness and Attitude of citizens;
- **Environment:** Readiness of the background. Some exogenous factors that are considered are socio-demographic data, ICT Readiness and Governance structure.

Figure 7.6: eGovernment maturity framework



All three categories consist of a number of sub-indicators. First of all, eGovernment Supply sub indicators are:

- **Investments:** each country's performance should be compared with the effort in innovation realised, in order to understand which actions lead to better results; this effort could be represented through the percentage of public expenditure in ICT, or the level of European Union funding spent in public administration innovation.
- **Diffusion of services:** heterogeneous availability of different services per country. Availability of eGovernment services can be measured with standard statistical indicators provided by Eurostat or each country's statistical institutes and they refer, for example, to the availability of online services, online features availability, and interaction level online.
- **Quality of services:** added value provided by online services rather than offline services, which increases if the whole service procedure is offered online. To compare service offerings in different EU countries in terms of the services availability and their quality, the mystery shopping methodology can be used to measure services' usability and the integration of IT enablers in the service delivery chain.

Secondly, eGovernment Demand sub indicators which enable citizens in using the online channels include:

- **User's eReadiness:** citizens' readiness is a prerequisite to use eGovernment services; this could be observed through use of other non-governmental online services, such as eCommerce, internet banking, and social networks. Finally the user's readiness to eGovernment adoption can be also analysed in terms of trust in government as a proxy of propensity of public online services demand.
- **Awareness:** public administrations which offer online services should plan intensive communication initiatives, in order to inform citizen on the availability of services. Citizens' awareness still represents a barrier to eGovernment diffusion.
- **Attitude:** online services should be designed in order to respond to specific users' needs. Perceived benefits of using electronic services/eGovernment channels, the preferences of citizens and businesses for future use. That is, if the respondents were to use a service again, how likely that they would re-use the same channel for contact or access. The issue of future use is further elaborated by measuring indications on specific barriers to as well as potential motivators for (increased) future use.

Third, environmental variables need to be taken into consideration. Sub indicators for this category include:

- **Socio-demographic data:** standard demographic data including gender, age, educational level, or geographical characteristics such as the number of municipalities or population density can be integrated with others variables to analyse users' needs and the propensity to use online services. Also, a corruption index could be used as a proxy of transparency and information asymmetry of governments, factors which could explain part of resistance to change.
- **ICT Readiness:** eGovernment maturity depends on a country's readiness to deal with new ICT opportunities, represented by the availability of infrastructure and enabling technologies. In addition to standard indicators such as broadband or free Wi-Fi coverage, number of IT device per capita, adoption of advanced technology standard (e.g. Single Sign On), it could also be interesting to look at countries' efforts to improve eReadiness, for example, through the percentage of GDP invested in ICT.
- **Governance structure:** there is a significant impact on eGovernment output generated by the administrative, political, and decisional structure of each country. This aspect includes the ability to legislate.

This can be measured by average time of laws' implementation, governance factors represented by the presence of coordinating agencies, and the average time to convert European directives. In order to understand government readiness and innovations commitment, we could compare eGovernment maturity to other innovation process in public administration, such as time to manage public work in general, or more specifically the procurement process, measured by, for example, the average time to manage a public purchase.

Figures III.1 – III.3 in Annex III list and describe the single indicators considered.

7.1.4 Methodology and data analysis

Using these absolute and relative indicators, a cluster analysis was conducted in order to identify clusters of countries with similar eGovernment maturity performances, and clusters of countries with a similar context. Comparing these clusters will build understanding of the context impact on performances.

Cluster analysis is a technique for exploratory statistical data analysis, which divides a set of objects into groups (clusters) that are meaningful and useful. The objects in the same cluster are more similar in some sense (the clustering variables) to each other than to those in other clusters. Researchers should identify the variables (i.e. the clustering variables) which represent the objects' characteristics of interests; then one of several statistical algorithms could be applied to divide the objects by calculating the distances among the objects in terms of the clustering variables. Statistically, the optimal number of the clusters represents the solution which provides the most distinctive clusters. Then the clusters should be profiled and the result be interpreted. An object in one cluster should have similar values and patterns in the clustering variables as other objects in the same cluster; and it should be considerably different in the clustering variables from the objects in other clusters.

In order to reduce the dependence of the dataset on relative variables and to enhance the interpretability of the data analysis results, where several variables share a mutual dimension, they are aggregated together. Such grouping of variables are further verified by a factor analysis which is a statistical method aiming at identify unobserved variables (i.e. factors) whose variations are reflected by the variations of all the single variables. Usually there is lower number of unobserved variables (i.e. factors) than the number of observed variables; thus factor analysis is often applied to reduce the data dimension and to prepare the dataset for further analysis.

7.2 Step 1: Clustering countries on eGovernment performances

The clustering exercise proposed in this year's eGovernment benchmark report aims at providing the basis for future developments. The valorisation of the indicators has been made through the available dataset, which may still have limitations at this point. Future versions of the report could be aimed at improving and building out the data collection framework in order to obtain indicators more fitting with the new methodology.

7.2.1 Absolute indicators valorisation

This phase's scope was to identify indicators able to represent eGovernment maturity coherently with the Action Plan objectives. As discussed in paragraph 7.1.1, the absolute indicators identified are Penetration, Digitisation, Satisfaction and Harmonisation. Figure 7.7 shows the valorisation of these indicators.

Figure 7.7: Indicators valorisation

Indicator	Composed variables	Data source
Penetration	<ul style="list-style-type: none"> ■ Internet use to interact with public administration, submitting completed forms (in the last 12 months). Percentage of individuals who used the Internet within the last year.²⁴ 	<i>Eurostat 2014</i>
Satisfaction	<ul style="list-style-type: none"> ■ eGovernment user satisfaction: Overall, how satisfied were you with the contact with public agencies or officials by e-mail, via Internet websites and/or via tablet / smartphone apps as a result of the following events? Top user satisfaction score 8+9+10 on 0-10 scale (rescaled on a 0-100 scale) ■ Likelihood of re-use: If you were to come into contact again with public agencies or officials, how likely is it that you would use e-mail, Internet websites and/or tablet / smartphone apps again? % likely + very likely to re-use (rescaled on a 0-100 scale) 	<i>eGovernment Benchmark - User Survey 2012</i>
Digitisation	<ul style="list-style-type: none"> ■ Authentic Sources: personal data pre-filled, documentation required ■ Automated Service: percentage of automated services per country (across all life events Mystery Shopping) 	<i>eGovernment Benchmark - Mystery Shopping 2014</i>
Harmonisation	<ul style="list-style-type: none"> ■ eID ■ Single Sign On ■ Mobility 	<i>eGovernment Benchmark - Mystery Shopping 2014</i>

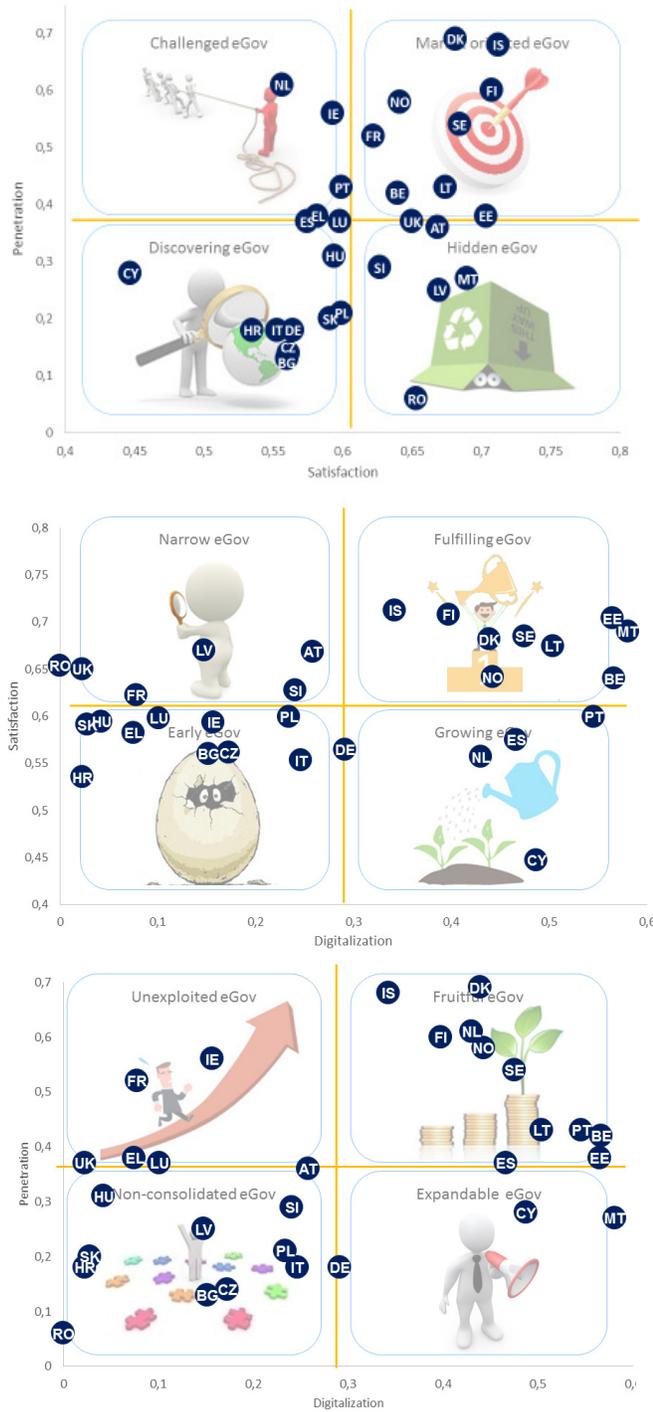
Using these (sets of) indicators, the performance of individual countries can be characterised using the outlines presented in paragraph 7.1.2.

²⁴ This indicator does not take in account more sophisticated services which allow for a reduction of interactions between public administration and citizens or business, for example because of automated services using interoperable databases.

7.2.2 Country performance characteristics

The figures below show how each country is characterised in the different scenarios.

Figure 7.8: eGovernment performance scores (on absolute indicators) for individual countries



European countries show more variance in Digitisation and Penetration than they do in Satisfaction of users. As a result, the first and third graph are relatively centred around the vertical and horizontal axis, respectively. In contrast, the second graph shows a clear eGovernment divide between *fruitful* eGov countries and *non-consolidated* eGov countries.

The fourth absolute indicator, Harmonisation, represents the capability of public administrations to coordinate their eGovernment actions on different institutional levels. Harmonisation is highly correlated with Digitisation.

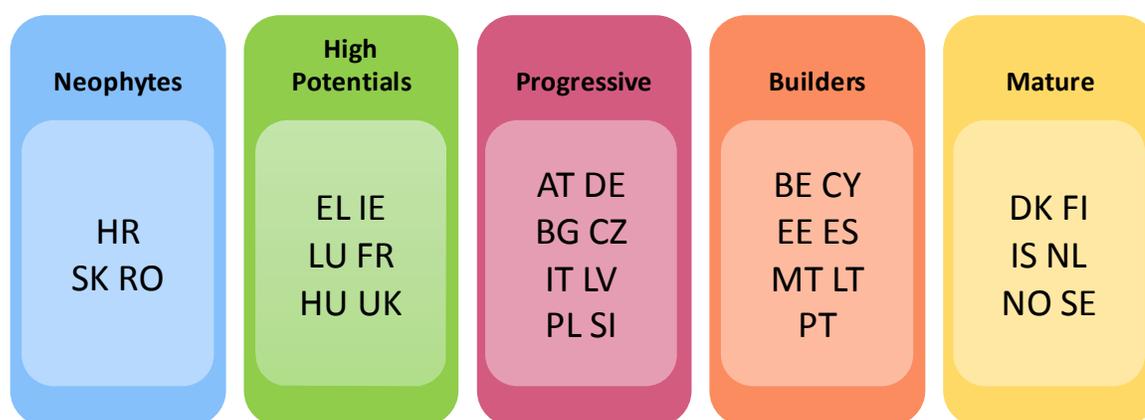
In fact, a country able to coordinate its actions is more efficient and effective in fostering Digitisation, through promoting standards and guidelines. Therefore, Harmonisation is not used to the next step: creating clusters.

7.2.3 Clusters creation

The assessment allows to determine the eGovernment maturity of countries and to identify different clusters of countries with a similar eGovernment maturity performance. In particular, a cluster analysis is performed in order to identify cluster of countries with a similar eGovernment maturity. In this analysis, we defined the clustering variables as three of the four absolute indicators: Penetration, Digitisation, and Satisfaction. While there are significant differences in the level of Penetration and the level of Digitisation, the level of Satisfaction shows little variation across clusters.

Figure 7.9 below shows the outcome of the cluster analysis. The thirty²⁵ European countries are clustered into five groups, based on their eGovernment performance measured by the three absolute indicators. The clusters are described below.

Figure 7.9: Clusters of countries with similar eGovernment Maturity



Neophytes Cluster: This cluster scores low on both penetration and digitisation, resulting in eGovernment that insufficiently exploits ICT opportunities and is dependent on significant efforts, which are essential to move towards eGovernment maturity.

High Potential Cluster: This cluster is characterised by a wide contrast between the level of digitisation (low) and the level of penetration (medium-high). This cluster is getting things right, but the lower level of digitisation implies that Public Administration processes could increase in efficiency and cost savings could be realised if the necessary action were to be initiated. It also shows that despite the efforts required, citizens are confident of the eGovernment potential and use online services.

Progressive Cluster: This cluster is characterised by a low level of penetration, yet a medium level of digitisation. This means that countries in this cluster have been working on a digital approach, but there are some factors that constrain full distribution of satisfying eGovernment services. The Progressive Cluster should focus on removing those barriers. Policies and innovation plans should specifically address and support deployment of a citizen-centric approach to further increase use of eGovernment services.

Builders Cluster: This cluster is characterised by the highest level of digitisation, but a medium-low level of penetration. This suggests a scenario where the innovation process has been carried out efficiently, but online interactions with government are nonetheless not yet common practice for citizens in these countries. Satisfaction is higher than in three other clusters (all but the Mature cluster). This means that in these countries the Public Administration is doing well, with a structured approach to innovation. However, the lack of penetration prevents government from completely exploiting the advantages of digitisation. These countries

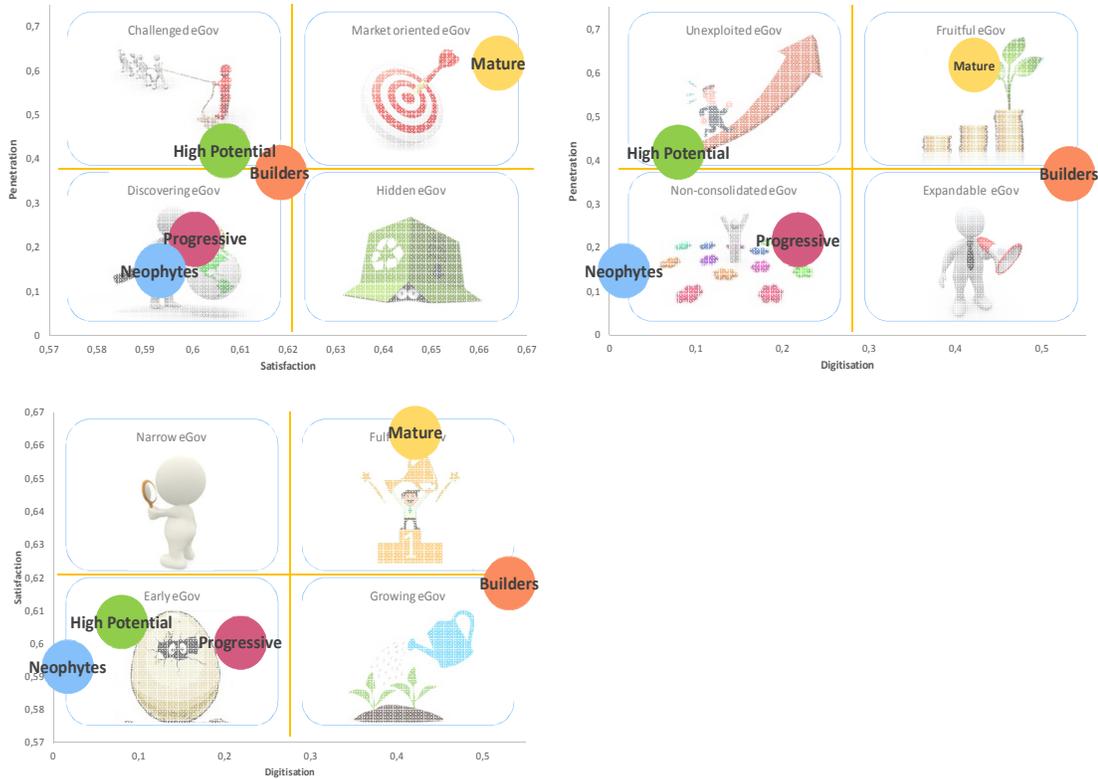
²⁵ As outlined in paragraph 7.1, Serbia Switzerland and Turkey are not included in the cluster analysis because there is insufficient data available on these countries in several data sources.

have to understand what causes the relatively lower level of usage, in order to identify the most suitable actions to carry out. A multi-channel strategy could be an option.

Mature Cluster: This cluster has the highest level of penetration and a high level of digitisation, displaying a successful process of innovation, making it possible to exploit the opportunities offered by ICT. The Mature Cluster also achieves quite a high level of satisfaction, showing a market-oriented approach that succeeds in meeting users' needs. Use of eGovernment services and online interaction with governments in these countries might be the most mature in Europe, but are not close to 100%. Similarly, there is still more that can be done to digitise the internal processes and harmonise both between government tiers as well as across borders.

Figure 7.10 below summarizes the characteristics of each cluster by plotting them into the maturity scenarios.

Figure 7.10: eGovernment performance scores (on absolute indicators) for clusters



7.3 Step 2: Understanding the impact of context-specific variables on maturity performance

7.3.1 Group of countries with similar context

The assessment allows to determine eGovernment maturity, which is affected by different variables. At the same time, undertaking an eGovernment project could have different meanings in different countries. Therefore, it is important to understand the impact of the national context on performance.

In order to derive significant implications, it is important to understand the context of specific countries. Five groups of countries with a similar context are identified, based on the values of the context variables which were defined per country (eGovernment Supply, eGovernment Demand and Environment)²⁶. This is shown in Figure 7.11.

Figure 7.11: Group of countries with homogeneous context

Group	Countries
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²⁶ See Annex III for the detailed dataset

Group 1	Latvia	Slovenia	Luxembourg	Iceland	Cyprus	Estonia	Lithuania	Malta
Group 2	Poland	Germany	Italy	France	United Kingdom	Spain		
Group 3	Netherlands	Belgium	Austria					
Group 4	Romania	Czech Republic	Greece	Hungary	Portugal	Bulgaria	Croatia	Slovakia
Group 5	Sweden	Ireland	Denmark	Finland	Norway			

Group 1 is composed of countries with smaller populations that are relatively young, highly educated and of medium income (measured by GDP per capita); the level of centralisation of services in these countries is high.

Group 2 is composed of the countries with the largest populations, and those populations are relatively older and have a level of education in line with the European Union average; the maturity of infrastructures and the take-up of the internet are also in line with the EU average.

Group 3 is composed of high income countries with relatively large populations that are highly urbanised, highly skilled in ICT, and more inclined to use e-commerce and e-banking services; the ICT infrastructure is highly developed; the level of centralisation is low.

Group 4 is composed of lower income countries with populations that are less urbanised and have a relatively lower level of education level and fewer digital skills; the infrastructures are not as highly developed in this group of countries; these countries also face higher perceived levels of public sector corruption.

Group 5 is composed of high income countries with small populations that are highly educated and very much inclined to use e-commerce and banking services; the infrastructures are very well developed; the level of centralisation of services is high; these countries face low perceived levels of public sector corruption.

A cross analysis on context-specific factors allows to understand the relative performance of individual countries and takes into account exogenous factors in putting those performances in the right perspective.

7.3.2 The impact of the context variables on performances

Despite significant differences in the level of Penetration and the level of Digitisation, the level of Satisfaction shows little variation across clusters. Hence the analysis focuses on the impact of the context variables on Penetration and Digitisation indicators. Through a multivariate regression analysis, which is a technique used to perform studies across multiple dimensions while taking into account the effects of all variables on the responses of interest, we verified the specific impact of each of these variables on the indicators of Penetration and Digitisation. This is shown in Figure 7.12.

Figure 7.12: Impact of context variables on Penetration and Digitisation

		Penetration	Digitisation
Environment	Population		
	Old Age Ratio	X	
	Urban Population Ratio	X	
	Educational Level	X	
	GDP per capita	X	
	Households internet access	X	
	Digital Skills	X	X
	R&D Expenditure EU		
	Mobile Broadband EU	X	X
	Broadband EU	X	X
	Corruption	X	X
	Level of centralisation	X	X
Demand	eChannel preference	X	X
	Lack of Trust	X	
	Lack of Willingness	X	
	Lack of Ability	X	
	eCommerce	X	
	eBanking Users	X	X
	Internet Users EU		X
	Social Media EU	X	
	Fulfilment of expectations	X	
	Perceived Benefits	X	
	Lack of Awareness	X	
Supply	Mobile Friendly	X	
	Clarity	X	X
	Usability	X	X
	Speed	X	
	Availability	X	X
	Ease of Use	X	X

In the following, we provide the interpretations of how the contextual variables impact on a country's eGovernment performance in terms of level of penetration and level of Digitisation. In particular, for each relative variable we identify three scenarios:

- **'Impact' (++)**: there is a linear relationship between the variable and the performance (i.e. when the value of the relative variable increase, proportionally increase/decrease the value of the performance);

- **‘Small impact’ (+):** there linear relationship between the variable and the performance is affected by the cohesistence by other factors;
- **‘Not relevant’:** there is no relationship between the variable and the performance.

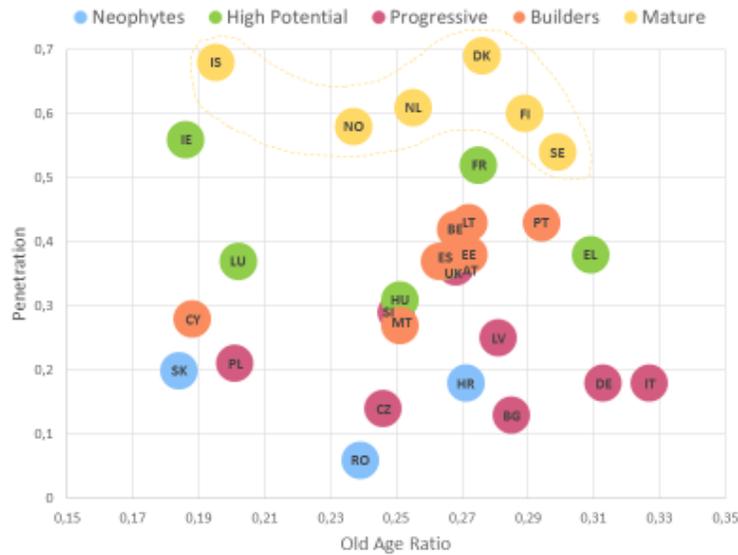
7.3.3 The impact of socio-demographic factor

Under social-demographic factor, four variables are analysed: old age ratio, urban population ratio, education level, and income (GDP per capita).

With regard to the Old Age Ratio, it seems that no significant consideration arises. Indeed, countries with a similar Old Age Ratio have a different performance rate. Within the Progressive Cluster, Germany and Italy have a high Old Age Ratio while Poland has a lower ratio. Looking at the High Potential Cluster, countries seem to have a younger population compared with European average, particularly Ireland and Luxemburg, while Greece has an older population. In Mature Cluster, Iceland’s Old Age Ratio is below the European average, while Finland and Sweden have an older population.

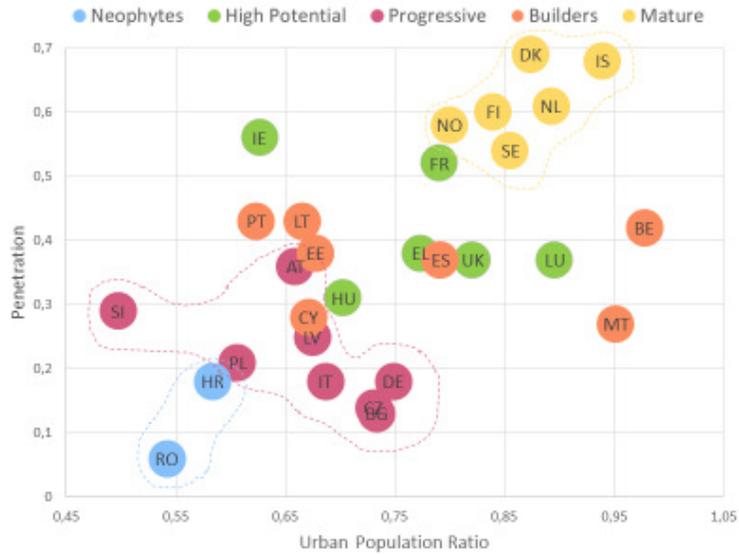
Socio-Demographical	Driver for Penetration	Driver for Digitisation
Old Age Ratio		
Urban Pop Ratio	++	
Educational Level	++	
GDP per capita	+	

Figure 7.13: Comparing Penetration with Old Age Ratio



The Urban Population Ratio seems to have a linear relationship with Penetration. However, there are some outliers, such as Ireland, which shows a lower Urban Population Ratio, with a high level of Penetration. Conversely, Belgium and Malta, have a higher level of Urban Population, combined with lower level of penetration. With regard to the Progressive Cluster the Urban Population Ratio is higher within the biggest countries, while Slovenia is below the Cluster average. Examining the High Potential Cluster, Luxemburg has a high Urban Population Ratio, similar to those countries which belong to the Mature Cluster, while Ireland shows lower values. Urban Population Ratio is higher in all the Mature Cluster countries and lower in the Neophytes Cluster. The Builders Cluster is heterogeneously distributed, and indeed, Belgium and Malta have high level of Urban Population Ratio, positioning far from other Cluster’s countries.

Figure 7.14: Comparing Penetration with Urban Population Ratio²⁷

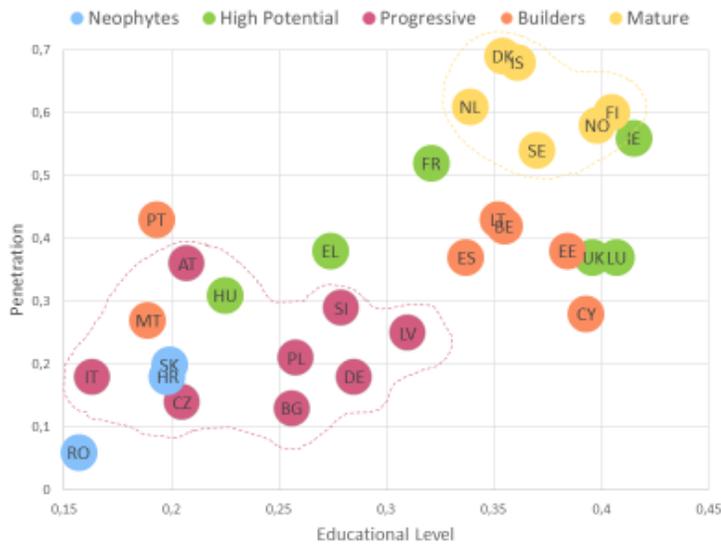


A higher educational level in the Mature Cluster is related to a higher level of Penetration, while low educational level in the Neophytes Cluster could explain the apparent low level of penetration. However, other clusters show an heterogeneous behaviour.

Within the Progressive Cluster, a higher level of education in Latvia is not matched with a higher degree of Penetration, as for countries with even lower educational level such as Austria and Slovenia.

Looking at the Builders Cluster, Portugal and Malta score a higher level of Penetration, even though they have an educational level similar to countries in the Neophytes Cluster.

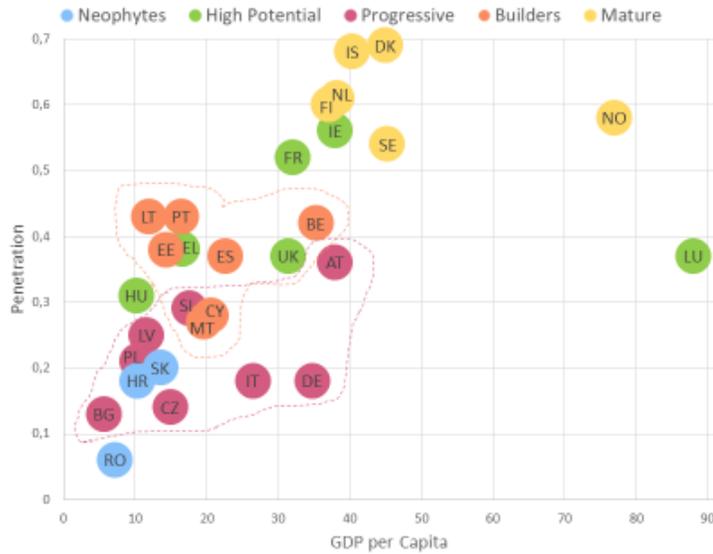
Figure 7.15: Comparing Penetration with Educational Level



The factor of GDP per capita seems to impact Penetration, as showed by Mature and Neophytes Clusters. Within the Progressive Cluster countries have a slightly different behaviour. Indeed Germany and Italy have a higher GDP per capita, but disclose a low level of penetration – for instance when compared to Austria. The High Potential Cluster's GDP per capita is above European Average, and although in France and Ireland this has led to an increase in penetration, this did not occur in the United Kingdom. Belgium is similar to the United Kingdom, where GDP per capita over the Cluster average does not correspond with a higher score in penetration.

²⁷ Data from Slovakia is missing

Figure 7.16: Comparing Penetration with GDP per Capita



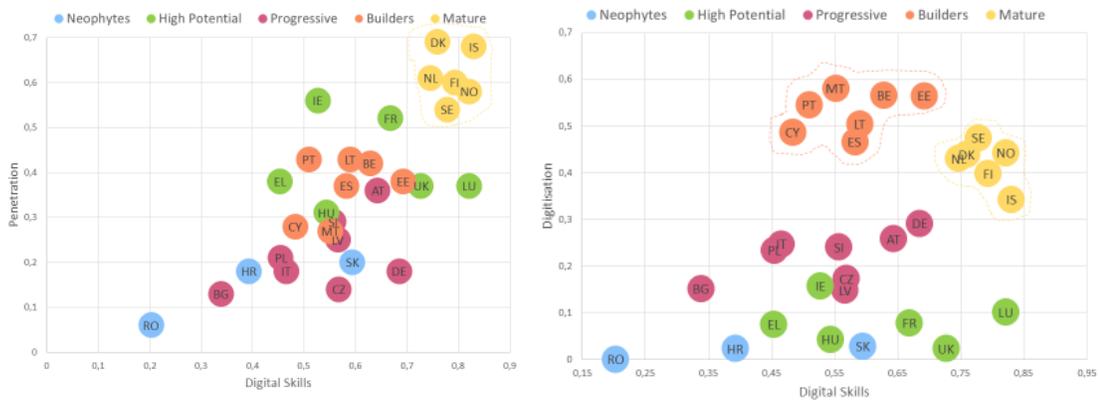
7.3.3.1 The impact of ICT readiness factors

Under ICT readiness factors, four variables are analysed: Digital Skills, Household internet access, Mobile Broadband Diffusion, Broadband Diffusion.

Digital skills of the population seem to have a linear relationship with Penetration. The Mature Cluster’s population has a higher level of digital skills which contributed to a higher level of eGovernment penetration in these countries. However, Digital skills are a necessary but not sufficient condition: Austria, Germany, Luxemburg and Slovakia have a higher level of digital skills than other nations in their relative clusters, nonetheless it did not lead to higher Penetration levels.

ICT Readiness	Driver for Penetration	Driver for Digitisation
Digital Skills	++	+
Household Internet access	+	
Mobile Broadband	++	
Broadband	+	+

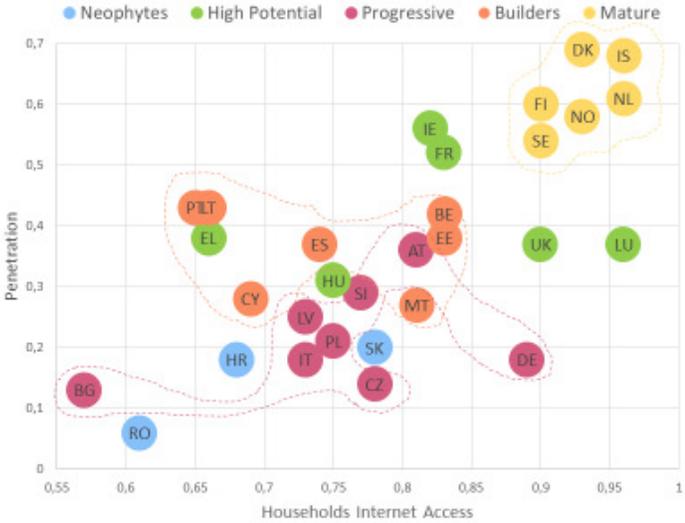
Figure 7.17: Comparing Penetration and Digitisation with Digital Skills



The factor of Household Internet Access seems to be a key enabler to eGovernment Penetration. In fact, the Mature Cluster shows a high diffusion of internet access. In the Progressive Cluster, Bulgaria scores lowest as regards Household Internet Access within Europe, and is confronted with a low Penetration rate. On the other hand, Germany, which has a similar Household Internet Access compared to those countries in the Mature Cluster, does not reach similar levels of Penetration.

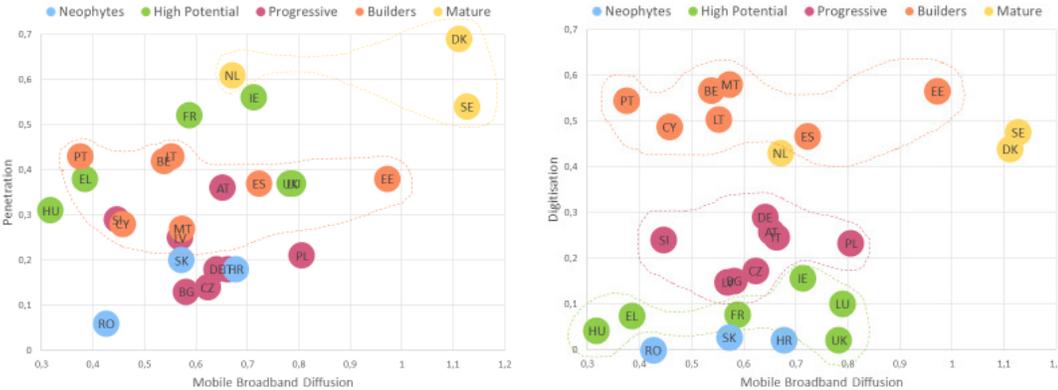
Even the High Potential Cluster shows a heterogeneous behaviour. The United Kingdom and Luxembourg and Greece show similar (lower) levels of penetration, while the United Kingdom and Luxembourg have a similar Household Internet Access as the countries in the Mature Cluster, while Greece reports a much lower Internet Access Diffusion.

Figure 7.18: Comparing Penetration with Households Internet Access



Similar considerations emerge observing Mobile Broadband Diffusion where the Mature Cluster presents the highest values. The Neophytes Cluster presents values in line with the European average, therefore mobile could represent a development opportunity for these countries. The diffusion of mobile broadband in Estonia is very high; in contrast with Portugal, Hungary and Greece that show low mobile diffusion. This however appears to be no barrier for level of penetration.

Figure 7.19: Comparing Penetration and Digitisation with Mobile Broadband diffusion²⁸

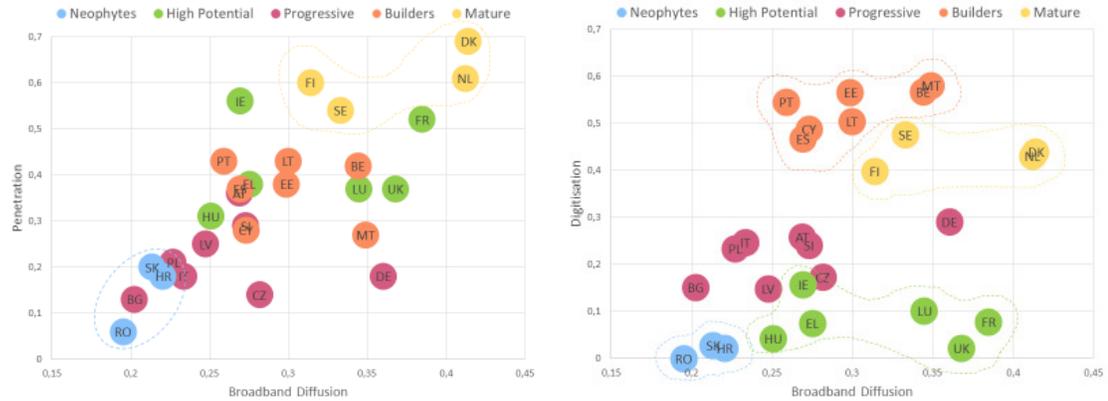


With regard to Broadband diffusion, the Mature Cluster is characterised by a high diffusion of broadband, contrary to the Neophytes Cluster which is affected by low diffusion of broadband.

Bulgaria and Germany have a very different level of broadband diffusion, but almost the same performance in penetration. Therefore, broadband diffusion seems to represent an enabling factor for higher Penetration, but not a sufficient condition on its own. The Builders and High Potential Clusters score medium-high level of Broadband Diffusion. In particular, in France, United Kingdom, Belgium, Malta and Luxembourg, Broadband is highly diffused, similar to the Mature Cluster.

²⁸ Data from Iceland and Norway is missing

Figure 7.20: Comparing Penetration and Digitisation with Broadband diffusion²⁹



7.3.3.2 The impact of government structure factors

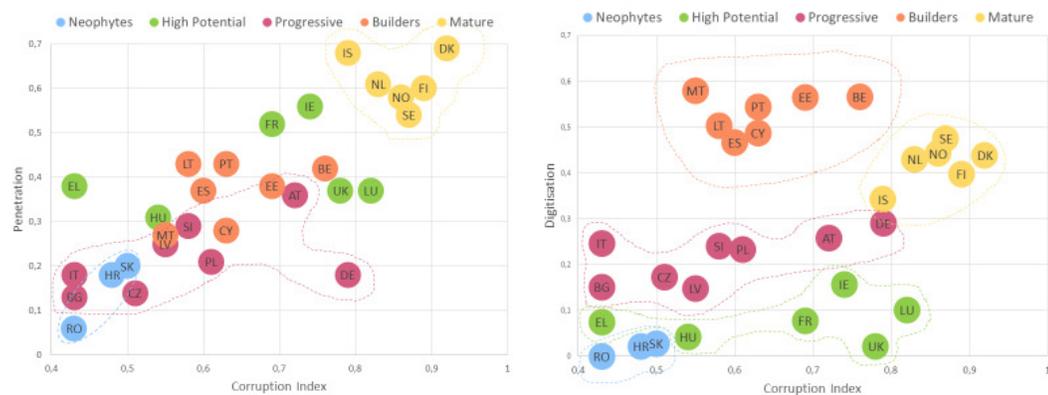
Under government structure factors, two variables are analysed: the Corruption Index and the Level of centralisation.

The Corruption Index represents how corrupted a country's public sector is, as perceived by its population. This perception affects service usage, and thus penetration. Indeed, corruption is almost absent in the Mature Cluster, while the Neophytes and Progressive Clusters are affected by higher level of corruption. An exception seems to be Germany, where the low score in penetration is not linked with corruption challenges. In the Builders Cluster a medium-high level of the corruption index corresponds to a medium-high level of penetration. The High Potential Cluster seems to behave in a similar way, apart from Greece and Hungary, where corruption is considered to be high, but does not necessarily forms a barrier to the eGovernment diffusion.

Structure Factors	Driver for Penetration	Driver for Digitisation
Corruption Index	++	+
Level of centralisation	+	+

Corruption also affects the indicator of Digitisation. The Builders and Mature Clusters, which score a higher level of Digitisation, are composed by countries with a higher level of transparency. In the High Potential Cluster, where the digitisation is low, the corruption does not seem to be the obstacle (except for Greece and Hungary).

Figure 7.21: Comparing Penetration and Digitisation with Corruption Index

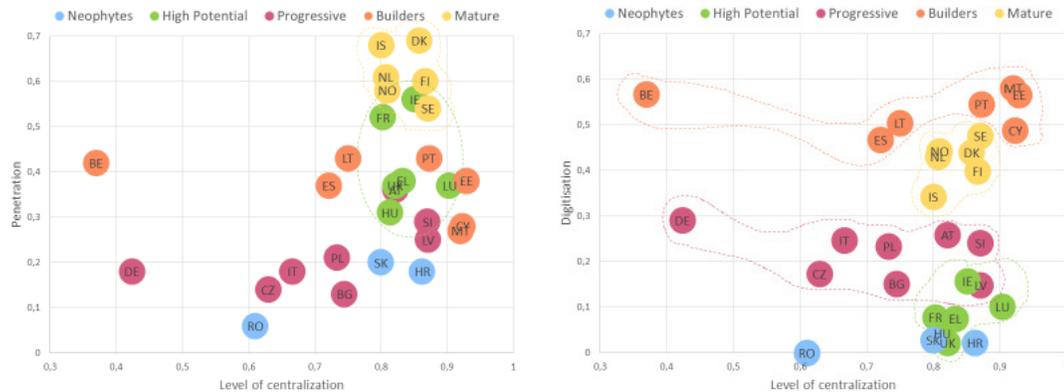


Examining the level of centralisation of services, it appears that countries with lower levels of penetration have a less centralised structure.

²⁹ Data from Iceland and Norway is missing

Germany and Belgium, which have showed to be similar (in terms of environment variables) to countries with higher performances,,are more decentralised. Therefore, the level of centralisation could represent a possible root cause that explains a low penetration rate.

Figure 7.22: Comparing Penetration and Digitisation with Level of Centralisation



7.3.3.3 The impact of availability factors

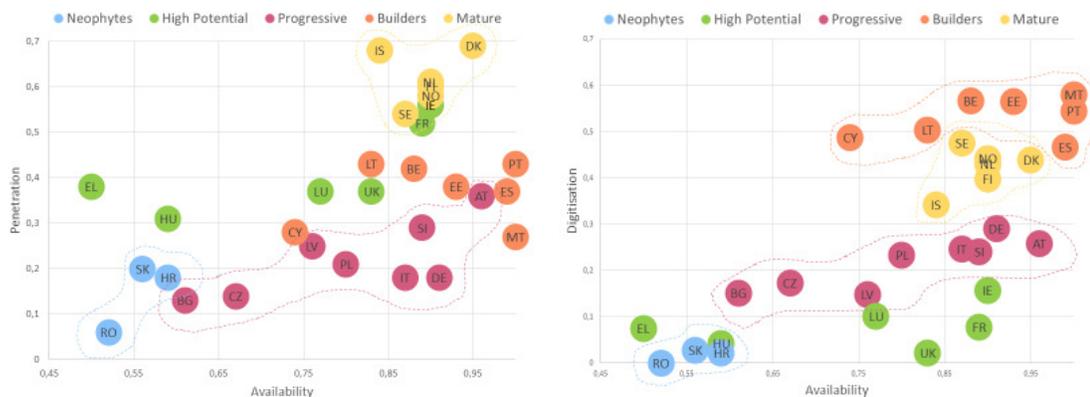
The Availability of online services represents a precondition for eGovernment diffusion. In the Mature Cluster, the availability of services is almost complete, while in the Neophytes Cluster services are less available online, and this also influences Penetration negatively.

The Builders Cluster, apart from Cyprus, show a very high level of availability, which is similar to the Mature Cluster. With regard to the High Potential Cluster, the availability of services is in line with the European average, except for

Greece and Hungary. In these two countries the level of availability is more similar to that of Neophytes Cluster.

Availability Factor	Driver for Penetration	Driver for Digitisation
Services Availability	++	++

Figure 7.23: Comparing Penetration and Digitisation with Availability



7.3.3.4 The impact of services' quality factors

As regards the Services Quality factors, three variables are analysed: Usability, Ease of Use and Mobile Friendliness.

With regard to the impact of Services' Quality factors, countries in the Progressive Cluster that show a low level of usage, are characterised by a medium-high level of quality. In this cluster, Bulgaria and Czech Republic excepted, quality factors should not be considered a root cause that explain a low level of usage. Countries in the Builders Cluster, present a high level of services' quality, proving all the efforts made on the supply side. These efforts result in higher performances. Looking at the High Potential Cluster, the quality of services is in line, or below the European average. Within this cluster, Hungary provides fewer usable services than the other

countries. France and United Kingdom, which have services less usable than countries similar to them, such as Italy and Germany, present a higher Penetration level.

Apart from positive exception the United Kingdom, countries in the High Potential Cluster reveal Ease of Use scores below the European Average. In the United Kingdom, Services' Ease of Use is high, representing an enabling factor to improve the penetration rate. Quality of Services in the Mature and Neophytes cluster are the opposite. In the Mature Cluster, countries with a high level of quality show a high penetration rate, while Neophytes present a low level of quality combined with low penetration performances.

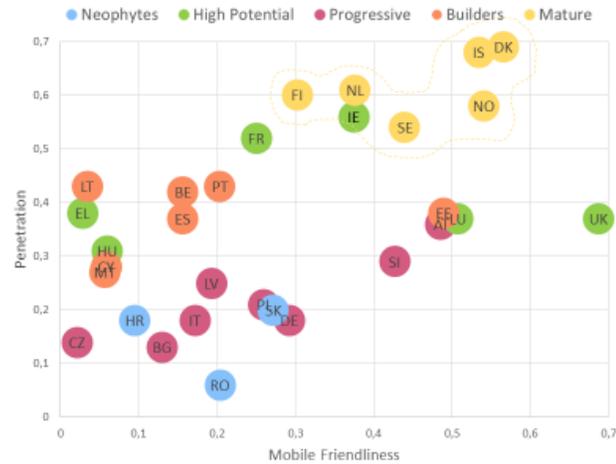
Quality Factors	Driver for Penetration	Driver for Digitisation
Usability		
Ease of Use		+
Mobile Friendliness	+	

Figure 7.24: Comparing Penetration and Digitisation with Usability and Ease of Use



Considering the Mobile Friendliness, the Builders Cluster, which have revealed high level of services' quality, seems to have not invested correspondingly in this direction. However, Estonia represent a positive exception within this cluster. With regard to the High Potential Cluster, it could be noticed that United Kingdom and Luxemburg are positioned far above the European Average, similar to Austria and Slovenia in the Progressive cluster.

Figure 7.25: Comparing Penetration with Mobile Friendliness



7.3.3.5 The impact of users' eReadiness factors

As for the Users' eReadiness factors, three variables are analysed: lack of ability, eCommerce diffusion and eBanking diffusion.

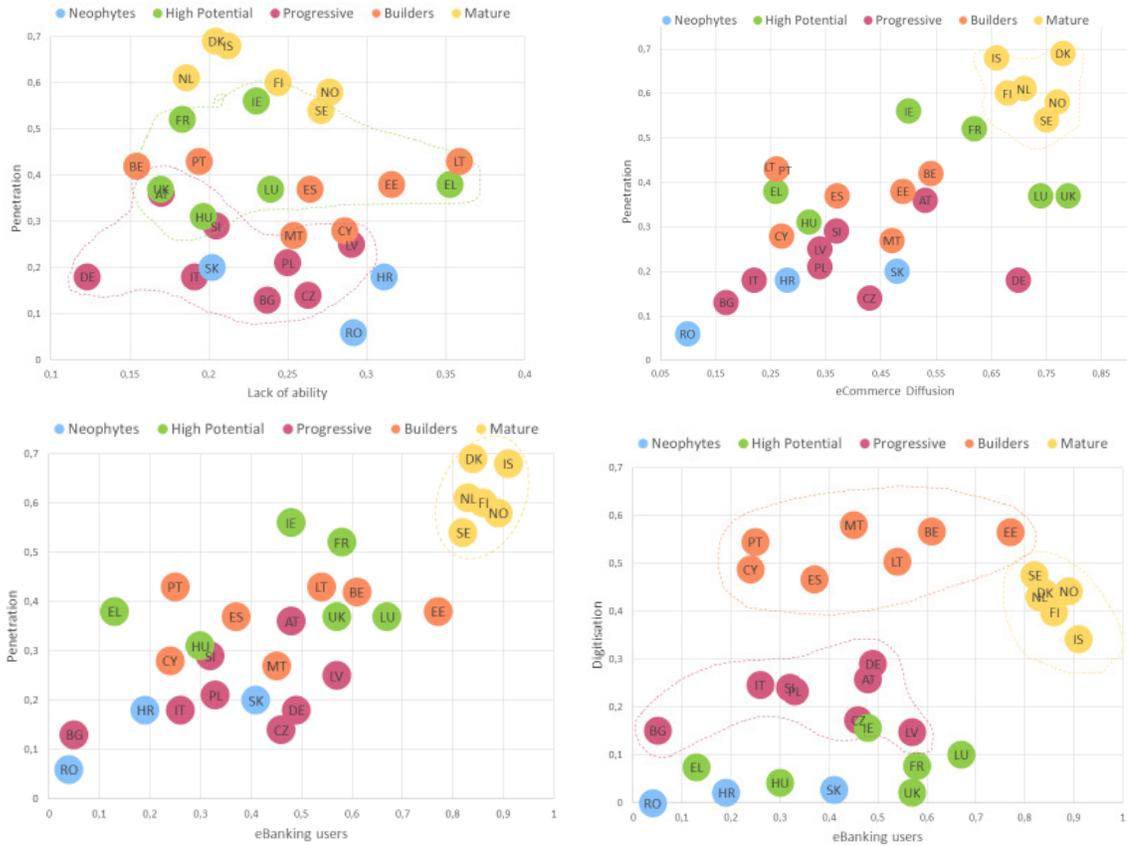
Citizens in countries in the Mature Cluster are used to interact online. Use of eCommerce and eBanking is very high. Conversely, citizens in countries in the Neophytes Cluster's are less experienced and this might demonstrate a lack of ability. Slovakia is an exception, as it shows a higher diffusion of eCommerce, in line with European Average. The diffusion of eCommerce and eBanking in the Progressive Cluster is much below European average. In Bulgaria and Italia a lower level of eCommerce diffusion corresponds with a lower level of penetration. In Germany citizens are frequently using eCommerce services, but use of eGovernment services is lower.

The High Potential Cluster's eBanking and eCommerce diffusion is higher than the European Average, despite Greece and Hungary relatively low score, where these services are

not widespread, and their citizens recognize to have a lack of ability. Conversely eCommerce diffusion in the UK is the highest in Europe but this does not correspond to the highest European penetration. Hence, in order to achieve higher level of penetration, users' eReadiness is a necessary but not always a sufficient condition.

Users' eReadiness	Driver for Penetration	Driver for Digitisation
Lack of ability		
eCommerce diffusion	++	
eBanking Diffusion	++	

Figure 7.26: Comparing Penetration and Digitisation with lack of ability, eCommerce Diffusion and eBanking users



7.3.3.6 The impact of awareness factors

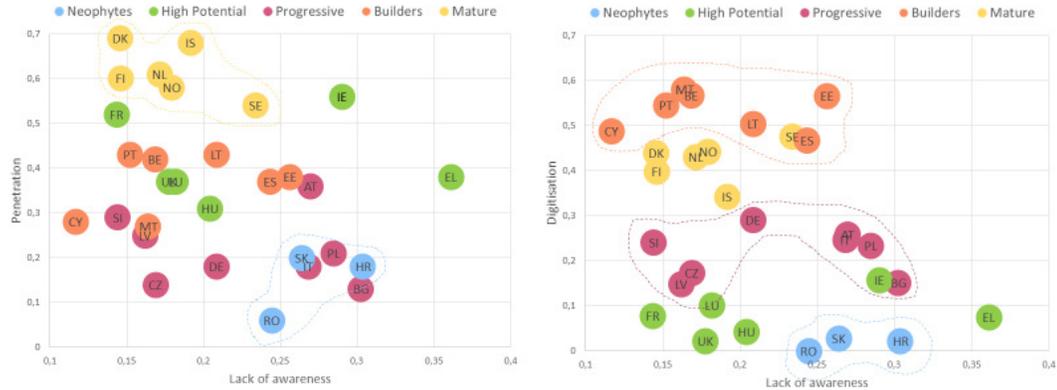
An effective communication of eGovernment services is the first step to increase penetration. In fact, Clusters with a lower level of penetration are characterised by a lack of awareness amongst its citizens.

The Builders Cluster seems to have taken the right direction. They have digitised processes, and then they developed and rolled out high quality services, before finally communicating their achievements. Spain and Estonia might benefit from further communication efforts..

Greece presents the highest lack of awareness, therefore it should invest in communication of eGovernment services, in order to increase penetration.

Awareness	Driver for Penetration	Driver for Digitisation
Lack of Awareness	+	

Figure 7.27: Comparing Penetration and Digitisation with lack of awareness



7.3.3.7 The impact of users’ attitude factors

As regards factors of Users’ attitude, five variables are analysed: lack of trust, eChannel Preference, lack of willingness, fulfilment of expectations and perceived benefits.

The Mature Cluster is characterised by a high eChannel preference. Since countries in the Mature Cluster are more developed, user’s expectations might also be higher, and consequently the perceived benefits and fulfillment of expectations might result below the European average. In Iceland users have a lower preference for the eChannel, but still they use it for government services.

Users in the Progressive Cluster show a lower preference for the online channel when interacting with public administration. This preference is partially explained by a lower trust in this channel, but also because users in the Progressive Cluster do not seem to be convinced of the benefits of eGovernment.

Within the High Potential Cluster, the services provided are in line with users’ expectations. Luxembourg shows the highest lack of willingness to use online services, but citizens who used the eGovernment services recognize the added value of the eChannel. Greece shows the highest lack of trust of non-users.

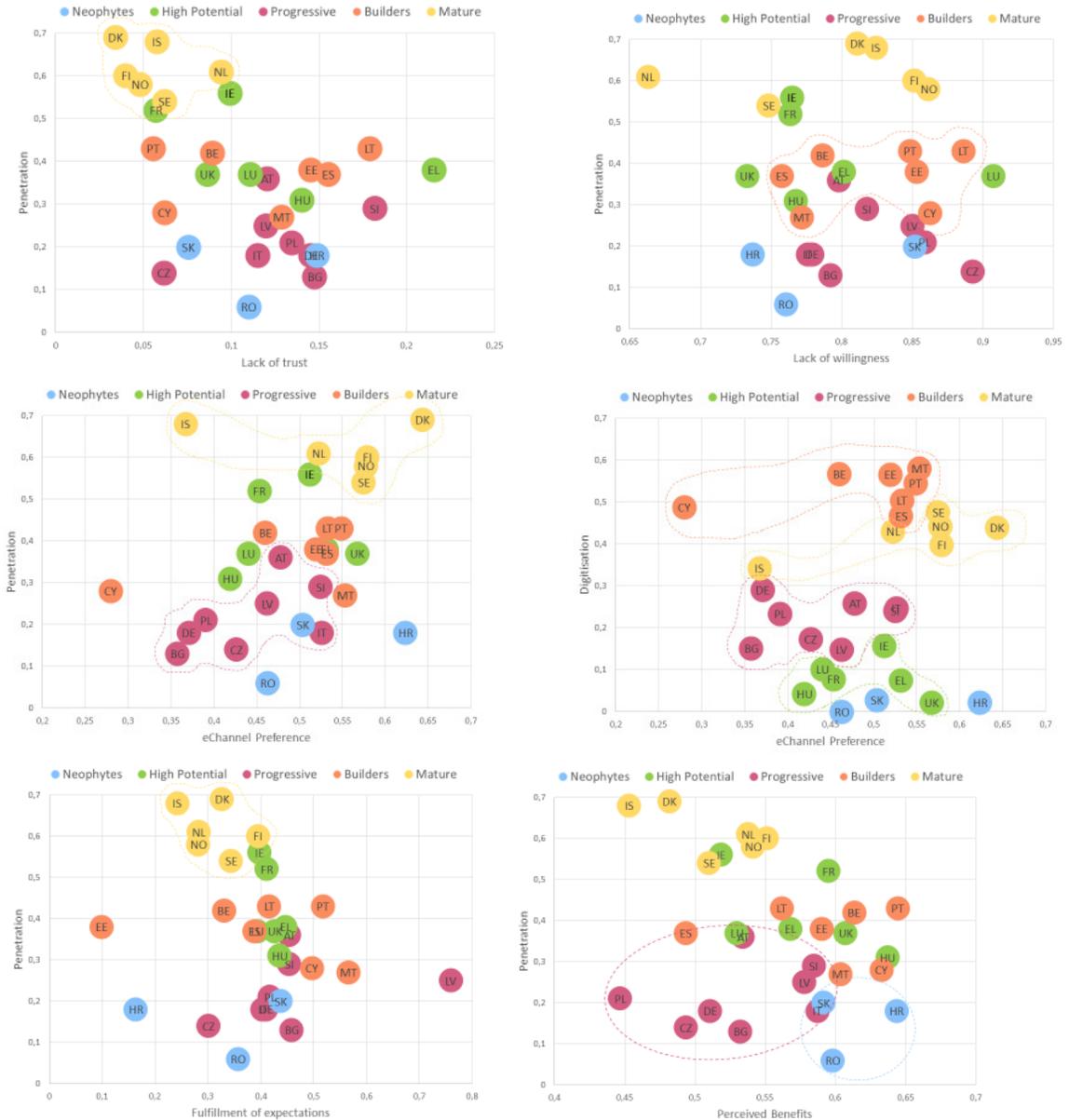
Citizens in countries in the Neophytes cluster would like to use eChannel to interact with public administration. In particular in Croatia the eChannel preference is among the

highest in Europe. Although users’ attitude towards eGovernment does not vary much in the Neophytes Cluster, users’ expectations are not fulfilled.

Users in countries in the Builders Cluster behave in line with the European average. In Estonia user’s expectations are high, but these are not fulfilled by eGovernment services. This can partially explain why in Estonia eGovernment Penetration is not as mature as leading countries in this indicator.

Users’ Attitude	Driver for Penetration	Driver for Digitisation
Lack of trust	+	
eChannel Preference	++	
Lack of Willingness		
Fulfilment of expect.		
Perceived benefits		

Figure 7.28: Comparing Penetration and Digitisation with lack of trust, eChannel Preference, lack of willingness, fulfilment of expectation, Perceived Benefits



7.3.3.8 Evidences on the impact of relative factors on Penetration and Digitisation performance

Figure 7.29 summarizes the evidences arisen from the analysis on the relative factors. In particular, starting from the forecasted impact of each of the variables on the indicators of Penetration and Digitisation (Figure 7.12), the analysis verifies the actual relationship between the relative factors and better performances in Penetration and Digitisation.

Figure 7.29: Drivers for Penetration and Digitisation

	Penetration		Digitisation	
	Forecast	Evidence	Forecast	Evidence
Old Age Ratio	X	Not relevant		
Urban Population Ratio	X	Impact		
Educational Level	X	Impact		
GDP per capita	X	Small Impact		
Households Internet Access	X	Small Impact		
Digital Skills	X	Impact	X	Small Impact
Mobile Broadband EU	X	Impact	X	Not relevant
Broadband EU	X	Small Impact	X	Small Impact
Corruption	X	Impact	X	Impact
Level of Centralisation	X	Small Impact	X	Small Impact
eChannel Preference	X	Impact	X	Not relevant
Lack of Trust	X	Small Impact		
Lack of Willingness	X	Not relevant		
Lack of Ability	X	Not relevant		
eCommerce	X	Small Impact		
eBanking Users	X	Impact	X	Not relevant
Internet Users EU			X	Not relevant
Social Media EU	X	Not relevant		
Fulfillment of expectations	X	Not relevant		
Perceived Benefits	X	Not relevant		
Lack of Awareness	X	Small Impact		
Mobile Friendly	X	Small Impact		
Clarity	X	Not relevant	X	Not relevant
Usability	X	Not relevant	X	Not relevant
Availability	X	Impact	X	Impact
Ease of Use	X	Not relevant	X	Small Impact

7.4 Comparing country clusters to understand and improve performance

Two cluster analyses have been carried out; one for eGovernment performance (measured by the absolute indicators) and one for contextual factors (measured by the relative indicators). The cross analysis of both exercises puts performance in the right perspective. The purpose is to identify different policies, specific for each country, which could suggest different policy makers to achieve relative aims. Figure 7.30 presents the map of each country's belongingness to the contextual group and the performance cluster.

Figure 7.30: Clustering countries by contextual group and performance cluster

	Neophytes	High Potential	Progressive	Builders	Mature
Group 1		LU	LV SI	CY EE MT LT	IS
Group 2		FR UK	DE IT PL	ES	
Group 3			AT	BE	NL
Group 4	HR RO SK	EL HU	BG CZ	PT	
Group 5		IE			DK FI NO SE

Following this cross-country analysis it is possible to better understand how the context-specific variables impact the performances of the countries, especially with regards to the Penetration and Digitisation indexes, considering that performances in Satisfaction are quite similar among clusters. Hereafter the result of this analysis is summarised.

Countries in the **Mature Cluster** perform very well, showing that in this cluster eGovernment is reaching the maturity pursued. eGovernment policies in these countries contribute to the objective of improving efficiency and effectiveness through processes' digitisation, while maximising the advantages for its users. Having said this, surely there still remain challenges for these countries to take up.

These countries present the best environment for innovation initiatives to succeed: the broadband is widespread, household internet access is high, and people are used to interact online in different life events. This make the population to have high expectations on eGovernment services delivery, so, even if the online services availability in this Cluster is around 90%, people do not always perceived benefits on using this services and declare they do not always fulfil their expectations.

In order to increase penetration, they could both explore making services mandatory online and improve online user experience. Improvements can be done also regarding back office digitisation in order to fast increment efficiency in the management of public services and to build a more sustainable eGovernment.

Belgium is part of the **Builders Cluster**, and resembles The Netherlands as regards contextual factors. The latter however reaches higher penetration levels, and so for Belgium the challenge is to tackle possible usage barriers. As Belgium has a lower level of centralisation of public services, it, hence should maintain its focus on coordinating the different institutional levels to move forward.

In Spain people see to be more inclined to eChannels than in France, but this declared eChannel preference is not confirmed by the diffusion on eCommerce and eBanking services, which is much below European average. The lower level of penetration that distinguishes Spain in this regard could be caused by:

- Inadequate or ineffective communication: the aim should be to introduce services and to promote their reliability (reputation, lack of trust);
- Lack of infrastructure and skills, that implies the necessity to increase, on one hand, the broadband coverage and, on the other hand, the digital skills of the population through training and computer literacy.

Portugal represents the benchmark for contextual group 4. Portugal itself should draw on those countries that have reached better performances in terms of Penetration and therefore belong to High potential or Mature clusters. From the point of view of service quality and availability of eGovernment services, Portugal is as good as other countries that score a higher Penetration level; hence, the usage of eGovernment services seems to be

influenced by more structural factors, such as a low level of computer skills of the population. These weaknesses imply scarce willingness to interact online, as a low level of eBanking usage and of internet access demonstrate. Some proposals may include raising public awareness on the use of ICT, increasing digital literacy alongside a multi-channel strategy to exploit the potential that Portugal has.

Malta, Cyprus and Lithuania have similar skill gaps and computer literacy challenges, and even use of eBanking turns out quite low, especially in Cyprus. In Estonia digital skills, ICT infrastructure and eBanking diffusion are above European average; eCommerce diffusion is in line with European average in Estonia and Malta, but is much below EU average in Cyprus and Lithuania. Communication actions are necessary to make people aware that these services exist and meet their needs, especially in Estonia where the lack of awareness is high and the perceived benefits are low, even if eGovernment services' quality is high.

In the **Progressive Cluster**, when comparing Latvia and Slovenia to countries with similar level of Digitisation and Penetration, are affected by some structural factors that prevent improvement. These are for instance an aging population that lives in rural areas, low digital skills and low access to the internet by households. Besides these countries also face high perception of corruption and hence they may be affected by a greater resistance to change. On the other side, people seem to be interested to interact online with the public sector, even compared to other countries that are in the same cluster. This becomes clear when looking at the eChannel preferences, at the relative good levels of eBanking usage and eCommerce diffusion slightly below EU average. In addition, when services are available online, people seem to appreciate them (so-called high fulfilment of expectation). Therefore, especially Latvia should primarily focus on increasing the supply of services (compared to the present low level of availability) and on communicating these actions (compared to the present lack of awareness). The communication must focus not only on increasing awareness of the services, but more generally on promoting the use of technology and the internet (digital literacy). However, the relative high perception of corruption in the public sector could be a limit for these countries to achieve same levels of performance as their peer countries (for instance Iceland and Estonia).

Austria's benchmark is The Netherlands, however it has a higher percentage of population living in rural areas, with a slightly lower level of education and lower access to the internet from home. This could affect the use of non-governmental online services, such as eCommerce and eBanking, which are less diffused, compared to The Netherlands. On the other hand, Public Administrations in Austria seem to be more effective in coordinating their efforts than countries that have achieved even better performances. To let Austria get closer to its benchmark, it could rely on this asset and on an appropriate communication strategy to promote the usage of the existing services.

The poor levels of penetration in the Czech Republic compared to Portugal do not seem to derive from a low-interest or ability of the population to use eGovernment services, but rather by a lack of services and by the poor ability of the public administration to provide adequate online services. In fact, in Czech Republic the level of usage of eCommerce and eBanking services is much higher than in Portugal. The difficulty of the public sector in digitising their processes and then in providing adequate eGovernment services seems to be conditioned by a fragmentation of public service delivery by different institutional levels and accompanied by a low capacity in coordinating their actions. Finally the Czech Republic face a higher perceived corruption that hampers innovation and eGovernment.

Bulgaria, compared to its benchmark country (Portugal), is characterised by factors that make implementation of eGovernment strategy difficult. This Member State is conditioned by a high level of corruption and by a high fragmentation of public service delivery, and does not compensate this with an adequate coordination capability. On the other hand, a high level of education and the fact that many people live in urban centers could facilitate closing the performance gap, if the public sector manages to provide adequate services to the population.

In comparison with their benchmarking country (Spain), Germany faces a higher fragmentation of the institutional levels which is challenging to counterbalance: the fact that Germany is characterised by a federal system might affect the delivery of services to users. In fact, for Germany, other factors like broadband penetration and digital skills would lead us to expect higher levels of Digitisation. However, in federal countries like Germany (or Austria), eGovernment policies have to be implemented largely through coordination mechanisms between national, regional and local public authorities rather than simply being forced top-down by

national authorities. A stronger coordination capacity between public bodies would then positively affect the delivery of services to users. Referring to penetration, in Germany citizens seem to be ready to use internet for complex interactions, as the percentage of people who have already approach eCommerce and eBanking is high. Hence in order to foster the use of eGovernment services the right strategy could be to implement an adequate awareness communication, also aimed to improve Public Administration reputation, together with a multichannel strategy for the people who prefer other channels to interact with public administration.

In Italy the lower level of Digitisation could be affected by:

- A lower level of digital skills existing in public administrations compared to what, for example, happens in Spain;
- An inadequate capacity of institutions in coordinating innovation efforts;
- A high perceived level of corruption that becomes a resistance to change initiatives aimed at digitising processes and thus their transparency.

eGovernment usage in Italy seem to be influenced by people's socio-demographic characteristics that turn to be older than the benchmarks (i.e. UK and France) and live more in rural areas and as well as own relatively lower levels of education and particularly of digital skills. These factors seem to be worsen both by a lack of trust in internet use for complex interactions, by a high level of corruption compared to the benchmark countries and by the lack of awareness of the services that are actually available and high-quality-made (more than in the UK and France). Therefore, it could be appropriate to implement an adequate communication strategy to promote the use of digital services. The communication initiatives should overcome the fragmented nature of the institutional levels, and together with multi-channel strategies, should make services available to that portion of population who are still not ready to interact online.

Compared to the benchmark, in Poland context factors that limit Digitisation may be the availability of digital skills and the difficulty to coordinate the efforts of the public bodies, although these factors are not likely to jeopardize the effectiveness of an appropriate eGovernment strategy. Similar considerations can be extended to Italy, although Poland may count on higher digital skills level.

Looking at the **High Potential Cluster**, Luxembourg, France and UK have to increase their degree of Digitisation in comparison with their benchmark countries (Cyprus, Estonia and Spain). A likely element to influence the lower Digitisation is the weak coordination between institutions in these countries. It could be that the strategy so far has focused on putting services online and making them available for citizens, but might have been less attentive to gain efficiency of its internal processes. Investing on solving these issues can lead not only to savings in the management of the public administration, but also to an increase in the quality of services for citizens. The latter is demonstrated by results achieved by other countries that have followed similar steps. Further Digitisation of internal processes, for instance by sharing data cross-agency, could lead to further simplification and even automation of services.

In Greece and in Hungary the problem is also the low level of Digitisation but besides that, Digitisation initiatives must also take into account the existence of a higher level of perceived corruption that could be a factor of resistance amongst users to any actions in this regard. In addition, Greece in comparison with Hungary and other countries faces a lower level of digital skills of its population, comparable to, for instance, Ireland. Hence, both these two countries will also have to envisage actions of digital literacy in order to tackle this issue. At the moment Ireland is demonstrating important initiatives in this regard³⁰.

Finally, in the **Neophytes Cluster**, both the degree of penetration and Digitisation are low. For these countries, Portugal is a benchmark since they share similar characteristics, although neophytes must face a slightly higher perceived level of corruption, and therefore a greater resistance to the distribution of eGovernment. On the other hand, these countries can count on a higher reach of mobile broadband than Portugal and could leverage on this advantage to faster improve their level of penetration.

³⁰ Such as Fast Track to IT - <http://eskills4jobs.ec.europa.eu/ireland>

7.5 Improving the framework: considerations for future applications

The two-step framework represents a new approach, proposing an innovative point of view, which can be useful in order to understand the meaning of a country gap of performance and to suggest a possible way to overcome this gap. Nonetheless, the analysis has been applied with indicators, which on the one hand have some missing data, and on the other hand not always are the best proxy for the proposed framework.

Future analyses can evolve to increase the validity and the relevance of the implications, and to improve the type, the quality and the quantity of data collected for the analysis.

In the analysis presented, Authentic Sources and Automated Service Variables, as proxies of public administration's efficiency and effectiveness in internal procedure and services supply, compose the Digitisation index. Actually, to understand how a public administration is managing the digitisation of its processes, it would be more appropriate to collect specific data, and would be useful to build efficiency and effectiveness indicators, through a survey to public entities.

Furthermore, the relative variables used in the second step of the analysis can be extended as well, including historical data, in order to strengthen and to increase the accuracy of construction of the groups. This could be possible in the next years, when historical series will be available.

In the actual framework, eGovernment maturity refers to the maturity of the online services. Nonetheless, as showed in the analysis, eGovernment maturity could be affected by different factors and then have different meanings depending on the specific referring context. Hence, nowadays there are some countries where online availability can actually be difficult to achieve, because its people are not ready yet to go online. It is interesting to notice that in some Groups there are no countries which have reached the Mature Stage. Forcing 'digital by default' when citizens are not ready to use online services or they do not have the possibility to use them, can be the wrong eGovernment strategy. In these countries, different strategies can be applied in order to improve efficiency and effectiveness of public administration, while maximising benefits for its users: for example by digitising the back office first and offering a multi-channel front office.

So, also the other indicators used to qualify the eGovernment maturity of a country could be revised in order to take into consideration more aspects: for example, the indicator "Penetration", which now represents the number of internet users that use eGovernment services could also take into consideration the people that interact with public administration through other innovative channels such as totem, retails, and banks if this fits within an eGovernment multi-channel strategy. Furthermore, the proposed framework, and the identification of homogeneous groups of countries, suggests that a deeper analysis could be done to compare the eGovernment strategies and policies of countries belonging to the same Group and hence possibly identifying the best eGovernment pattern for each homogenous group. This implies also that it is not possible to identify an absolute eGovernment benchmark but more relative ones to be found within each homogenous group.

In the future, studies will also take account of the extent to which eGovernment provision is affected by welfare state features (which rely on the capacity of the welfare state to secure social rights). Hence, further analysis will want to acknowledge how entitlements are distributed to citizens, the degree of state's generosity in providing welfare, the distribution of welfare provision among state, family and market (private/ public mix).

Finally, present and future analysis shall also consider the actual capacity of governments to respond to social change, as eGovernment belongs to this process. The circumstances that permitted the welfare state expansion in the post war (growth, full employment, national autonomy) progressively reversed in a challenging scenario. Historical evidence hardly suggests that the response of welfare states to these challenges is shrinking entitlements. But it is to be reckoned that this condition of permanent austerity influences the extent to which governments are likely to expand and reinforce services delivered to citizens, and contributes to orient governments' responses to specific social needs.

Annex I: Country Reports

Released separately on European Commission website.

Annex II: Explanation of indicators in common language

User Centricity

The top-level benchmark *User Centricity* indicates to what extent (information about) a service is provided online and how this is perceived.

It consists in 4 indicators. Two indicators look into what is provided for online by governments:

1. **Online Availability:** indicates if a service is online. Ranging from offline (0%), only information online (50%), fully online (100%).

Measures the extent to which citizens and businesses can finalise a process step/ obtain a service within a life event online. A 100% score for Online Availability means the service can be obtained online *from start to finish* and can be accessed through the website of the responsible authority and through a central government portal. If not through portal, the service scores 75%. A 50% score on Online availability means that although *information* can be found online on both the website of the responsible authority and through a central government portal (if not through portal: 25%), the citizen or business still needs to use paper or physically visit the authority to actually obtain the service.

2. **Usability:** indicates if support, help and (interactive) feedback functionalities are online.

Measures the extent to which the central government portals *facilitate* the citizen or business in obtaining the service. By facilitation, we mean the citizen or business is able to identify and contact the responsible authority, to receive support (e.g. through FAQs, demos, chat functionality, social media) and to provide feedback online. The indicator consists of 7 parameters, the score indicates how many of these are online.

Two indicators assess how these functionalities are perceived:

3. **Ease of Use:** quality assessment researchers indicating how intuitive and smooth the process steps can be completed.

It assesses the extent to which the citizen or business is able to find his way through the process steps in a life event *smoothly*. The mystery shoppers therefore evaluate the complete life event (beginning to end) on a scale of 1-10, addressing the extent to which he has reached his *goal*, he was able to *understand* what he was supposed to do to obtain the service, he found the succession of process steps *logical* and he was *actively engaged* to improve the service.

4. **Speed of Use:** quality assessment researchers indicating if the process steps could be completed within reasonable amount of time.

Assesses the extent to which the citizen or business is able to complete the required process steps in a life event within a *reasonable amount of time*. The mystery shopper therefore evaluate the complete life event (beginning to end) on a scale of 1-10, addressing the extent to which he could quickly *submit his information* to the authority (or information was pre-filled), the *time* he needed to obtain the service and the extent to which the services were *structured efficiently*.

Indicators 2, 3 and 4 are aggregated into one synthetic indicator called **Online Usability**. Together with the indicator for **Online Availability**, the **User Centricity benchmark** is composed.

Transparency

The top-level benchmark **Transparency** indicates to what extent governments are transparent as regards a) their own responsibilities and performance, b) the process of service delivery and c) personal data involved.

The Transparency benchmark is composed of three indicators:

1. Transparency of Public Organisations: indicates to what extent governments are transparent as regards their own responsibilities and performance.

Measures the transparency of government organisations which are *end responsible* for the policies, regulations and services in a life event, but are not necessarily the service provider. Mystery shoppers assess the extent to which the organisations provide information on their responsibilities, the organisational structure, regulation and policy making processes and monitoring methods and results.

2. Transparency of Service Delivery: indicates to what extent governments are transparent as regards the process of service delivery.

Measures the transparency of the life event's service providers with regards to the *service delivery process*, i.e. the length of the process, the progress made, the delivery timelines and the service performance.

3. Transparency of Personal data: indicates to what extent governments are transparent as regards personal data involved.

Measures the transparency of the central government portals with regards to how governments *store Personal data*, and the level of access of citizens and business to their personal data and possibilities to modify data and notify or complain to the government on the quality or the use of their personal data.

7.5.1.1 Single market mobility

The top-level benchmark **Single Market mobility** indicates to what extent EU citizens can use online services in another country. It measures the availability and usability of cross-border eGovernment services, i.e. if services in country A can be used by someone from country B. For this benchmark, the same indicators as for User Centricity are used:

1. Online availability: indicates if a service is online. Ranging from offline (0%), only information online (50%), fully online (100%).

Measures the extent to which citizens and businesses can finalise a process step/ obtain a service within a life event online from abroad. A 100% score on Online availability means the service can be obtained online *from start to finish* and can be accessed through the website of the responsible authority. A 50% score on Online availability means that although *information* can be found online, the citizen or business still needs to use paper or physically visit the authority to actually obtain the service.

2. Usability: indicates if support, help and (interactive) feedback functionalities are online.

Measures the extent to which the central government portals *facilitate* the foreign citizen or business in obtaining the service. By facilitation, we mean the citizen or business is able to identify and contact the responsible authority, to receive support (e.g. through FAQs, demos, chat functionality, social media) and to provide feedback online.

3. Ease of Use: quality assessment researchers indicating how intuitive and smooth the process steps can be completed.

Assesses the extent to which the foreign citizen or business is able to walk through the process steps in a life event *smoothly*. The mystery shopper therefore scores all services within one life event on a scale of 1-10, addressing the extent to which he has reached his *goal*, he was able to *understand* what he was supposed to do to obtain the service, he found the succession of process steps *logical* and he was *actively engaged* to improve the service.

4. Speed of Use: quality assessment researchers indicating if the process steps could be completed within reasonable amount of time.

Assesses the extent to which the foreign citizen or business is able to complete the required process steps in a life event within a *reasonable amount of time*. The mystery shopper therefore scores all services within one life event on a scale of 1-10, addressing the extent to which he could quickly *submit his information* to the authority (or information was pre-filled), the *time* he needed to obtain the service and the extent to which the services were *structured efficiently*

Indicator 2, 3 and 4 are aggregated into one synthetic indicator called cross border index for **Online Usability**. Together with the cross border index for **Online Availability**, the **benchmark** of Single Market Mobility is composed.

7.5.1.2 Key Enablers

The top-level benchmark *Key enablers indicates the extent to which 5 technical pre-conditions are available online*. It measures the extent to which governments have the technical pre-conditions in place to realise efficient and effective online services. The Mystery shoppers assess the availability of five Key enablers in each of the life events:

1. **Electronic Identification (eID):** the Mystery shoppers indicate for each life event service whether there is a need for authentication and if yes, if the citizen or business is able to *authenticate online* through a national eID (usable for multiple services provided by multiple government authorities) or through a specific identifier (usable for only one service or only one government authority).
2. **Electronic documents (eDocuments):** the Mystery shoppers indicate for each life event service whether there is a need for *sending or receiving a document* and whether this can be done directly online (not through e-mail) in a secure way (i.e. the digital documents are authenticated).
3. **Authentic Sources:** the Mystery shoppers indicate for each life event service whether he should provide personal information (e.g. through a form) and whether this *information is automatically pre-filled* by the service provider (based on data from Authentic Sources such as National register, Tax registers, Company registers etc.)
4. **Electronic Safe (eSafe):** the Mystery shoppers indicate per central government portal if an eSafe solution is available for *secure storage and retrieval of eDocuments*.
5. **Single Sign On (SSO):** the Mystery shoppers indicate per central government portal if by logging in once he can *gain access to other participating systems* (i.e. multiple eGovernment services/websites) without being prompted to log in again.

Annex III: Relative indicators

Figure III.1 Supply variables

Source	Type	Year	Description	Indicator	Data of extraction
IDC	Investments	2011	Take-up e-Procurement in % on total public procurement	eProcurement Take-UP	March 2015
IDC	Investments	Average	2011-2014 IT spending on GDP average	Average IT Spending	March 2015
Mystery Shopping	Diffusion of services	2014	Availability	Availability	March 2015
Mystery Shopping	Quality of services	2014	Mobile friendliness of PA websites	Mobile_Friendly	March 2015
Mystery Shopping	Quality of services	2014	Transparency	Clarity	March 2015
Mystery Shopping	Quality of services	2014	Usability	Usability	March 2015
Mystery Shopping	Quality of services	2014	Speed	Speed	March 2015
Mystery Shopping	Quality of services	2014	Ease of Use	Ease of Use	March 2015

Figure III.2: Demand Variables

Source	Type	Year	Description	Indicator	Data of extraction
Eurostat	User's eReadiness	2014	Internet purchases by individuals. Last online purchase: between 3 and 12 months ago	eCommerce	June 2015
Eurostat	User's eReadiness	2014	Internet banking (% of individuals)	eBanking Users	March 2015
Eurostat	User's eReadiness	2014	Last Internet use: in last 3 month (% of individuals)	Internet Users EU	March 2015
Eurostat	User's eReadiness	2014	eBanking_Users/Internet_UsersEU	eBanking diffusion in internet Users	March 2015
Eurostat	User's eReadiness	2014	Individuals using the Internet for participating in social networks - % of individuals aged 16 to 74	Social Media diffusion	March 2015
User Survey 2012	Awareness	2012	% Lack of awareness / non-users: I was not aware of the existence of relevant websites or online services	Lack of Awareness	March 2015
User Survey 2012	Attitude	2012	% Lack of trust to use / non-users: I did not use the Internet because of concerns about protection and security of personal data	Lack of Trust	March 2015
User Survey 2011	Attitude	2011	% eChannel preference (as a share of total group of users & non users of eChannels across life events)	eChannel preference	March 2015
User Survey 2012	Attitude	2012	% Lack of willingness to use / non-users: I preferred to have personal contact to get what I wanted/needed; I expected to have things done more easily by using other channels; The relevant services will require personal visits or paper submission anyway; I did not expect to save time by using the Internet to get what I wanted/needed	Lack of Willingness	March 2015
User Survey	Attitude	2012	Looking back how did the contact with public	Fulfillment of	March 2015

Source	Type	Year	Description	Indicator	Data of extraction
			agencies or officials by e-mail, via Internet websites and/or via tablet / smartphone apps compare with what you had expected? % better + much better than expected (rescaled on a 0-100 scale)	expectations	
User Survey	Attitude	2012	To what extent do you agree or disagree with the following statements? When compared with other means to come into contact with public agencies or officials (e.g., in-person, by phone or mail), through use of e-mail, Internet websites and/or tablet / smartphone apps ... % agree + strongly agree (rescaled on a 0 - 100 scale) Perceived benefits (8 statements: time, money, flexibility, quality, simplification, control, transparency, trust) % agree + strongly agree (rescaled on a 0-100 scale)	Perceived Benefits	March 2015
User Survey 2012	User's eReadiness	2012	% Lack of ability to use / non-users: I did not have the skills or did not know how to get what I wanted/needed via the Internet; I could not find or access the information or services I wanted/needed; I tried but I abandoned the service, because the service was too difficult to use; I tried but I abandoned the service, because the service's website or application had technical failures	Lack of Ability	March 2015

Figure III.3: Environment variables

Source	Type	Year	Description	Indicator	Data of extraction
Eurostat	Socio-demographic data	2014	Number of individuals	Population	March 2015
Eurostat	Socio-demographic data	2013	Gross domestic product at market prices - At current prices	GDP	March 2015
Eurostat	Socio-demographic data	2013	This indicator is the ratio between the number of elderly persons of an age when they are generally economically inactive (aged 65 and over) and the number of persons of working age (from 15 to 64). The value is expressed per 100 persons (of working age).	Old Age Ratio	March 2015
World Bank	Socio-demographic data	2013	People living in urban areas as defined by national statistical offices. It is calculated using World Bank population estimates and urban ratios from the United Nations World Urbanisation Prospects.	Urban Population Ratio	March 2015
Eurostat	Socio-demographic data	2013	Population by educational attainment level: % of individuals aged 25-64 upper tertiary education (level 5-8)	Educational Level	March 2015
DAS	ICT Readiness	2014	To be classified in this group, an individual has to have basic or above basic skills in all the four Digital Competence domains included in the index: information, communication, content-creation and problem solving.	Digital Skills	June 2015

Source	Type	Year	Description	Indicator	Data of extraction
Eurostat	ICT Readiness	2014	Percentage of households who have Internet access at home. All forms of Internet use are included. The population considered is aged 16 to 74.	Households internet access	March 2015
Eurostat	ICT Readiness	2014	Mobile Broadband penetration - all active users (#of user on population)	Mobile Broadband Diffusion	March 2015
Eurostat	ICT Readiness	2014	Fixed broadband penetration (subscriptions as a % of population)	Broadband Diffusion	March 2015
Eurostat	ICT Readiness	2014	Fast broadband (at least 30Mbps) penetration (subscriptions as a % of population)	Fast broadband Diffusion	March 2015
Eurostat	ICT Readiness	2014	Ultrafast broadband (at least 100Mbps) penetration (subscriptions as a % of population)	Ultrafast Broadband Diffusion	March 2015
Eurostat	ICT Readiness	2013	The indicator provided is GERD (Gross domestic expenditure on R&D) as a percentage of GDP. "Research and experimental development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society and the use of this stock of knowledge to devise new applications"	R&D Expenditure	March 2015
Eurostat	ICT Readiness	2012	Percentage of persons employed with ICT specialist skills	ICT Skills of Employed	March 2015
CORRUPTION PERCEPTIONS INDEX (www.transparency.org)	Governance structure	2014	The Corruption Perceptions Index ranks countries/territories based on how corrupt a country's public sector is perceived to be. It is a composite index, drawing on corruption-related data from expert and business surveys carried out by a variety of independent and reputable institutions. Scores range from 0 (highly corrupt) to 100 (very clean).	Corruption	March 2015
Mystery Shopping	Governance structure	2014	% services provided at national level over all life events	Level of centralisation	March 2015

Annex IV: List of country acronyms

Country Acronyms (in alphabetical order)	
AT	Austria
BE	Belgium
BG	Bulgaria
CH	Switzerland
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
HR	Croatia
HU	Hungary
IE	Ireland
IS	Iceland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
NO	Norway
PL	Poland
PT	Portugal
RO	Romania
RS	Serbia
SE	Sweden
SI	Slovenia
SK	Slovakia
TR	Turkey
UK	United Kingdom

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