European Commission

eGovernment Benchmark 2016

A turning point for eGovernment development in Europe?

FINAL INSIGHT REPORT – VOLUME 1

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

Capgemini CONSULTING.TECHNOLOGY.OUTSOURCING | SOGETI | IDC Analyze the Future | POLITECNICO DI MILANO

Digital Agenda for Europe

This study was carried out for the European Commission by
Capgemini, IDC, Sogeti, and Politecnico di Milano

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Executive Summary

It's about mastering change caused by technology, not about crystal balls to predict the future

Technology is reaching every corner of our world and brings rigorous changes to every industry, every organisation, its processes and people. Public sector included. And the future won't be different. It is not very clear though which technologies will make what impact; predicting future technologies provides very engaging over-the-horizon figments of imagination, but misses the robustness and reliability that public sector can actually build on. No one can actually predict what government could look like in ten years. The only thing that is certain is that it will be very different from how it looks now. Technology is changing the game quickly and will continue to do so. The biggest challenge is therefore not so much in anticipating what comes next, but ensuring governments are able to deal with change.

Benchmark indicators in retrospective: Governments not so adequately delivering on technological enablers

On the positive side, eGovernment implementation in Europe improves every year, and with each biennial measurement relative progress increases too. Examples illustrate governments across Europe lack decisiveness to digitise public services as well as their internal organisations. Results over time are incremental and need an acceleration in order to keep up with private sector, and citizen's expectations. This edition of the eGovernment Benchmark reveals progress realised over the past four years on four benchmarks:

- **User centricity:** governments have advanced in making public services digital, but focussed less on the quality of the delivery from the user's perspective. While the online availability of services at EU28+ level reached 81% (+9 points since 2012) and online usability 83% (+4 points since 2012), the ease of using and speed of using these services online – as perceived by the mystery shoppers - advanced poorly, increasing by only 1 percentage point since the first assessment in 2012
- **Transparency:** this benchmark has increased of 8 points over the years, reaching 56% in 2014-2015. However, despite the general improvement, the implementation of good transparent service procedures is still lacking in large parts of Europe (Score of 47% at EU28+). Transparency of personal data halts at 55%. Across Europe governments have room for improvement to make their organisations more transparent. This is the highest scoring sub-indicator, showing an average score of 64.
- **Cross-border Services:** business-related services are more advanced in terms of cross-border mobility than citizen-related services: even if the latter increased more since the first measurement (+13 points against +11 for the business), business mobility gets a higher score (64).
- **The key technological enablers** that could drive user empowerment and efficiency are not used to their potential. The benchmark scores 54%. Mobile internet is another technology that is relatively new and has a huge impact in terms of usage and applications. Public sector response to apply this technology to empower citizens to easily navigate information about public services and public organisations is slow.

Country progress over time: appearance of a 'Digital Diagonal' in Europe?
How do individual countries contribute to the eGovernment results mentioned above? It is no surprise that there is huge variability in eGovernment performance across Europe. It seems however that performance is polarising: a string of countries from the South-West to the North-East of Europe perform above the European average and are also showing stronger progress than the European average, while most of the other European countries are behind the European average on both indicators. There are hardly countries that – while behind the European average – show strong growth in order to catch up. The standard deviation (between best and worst performers) is growing since the first biennial measurement. On the positive side it can be concluded that a 'Digital Diagonal' of countries could be pushing Europe forward. We should care however that this does not turn into 'dragging', as the gap with lagging countries is growing faster than is acceptable in a Digital Single Market.

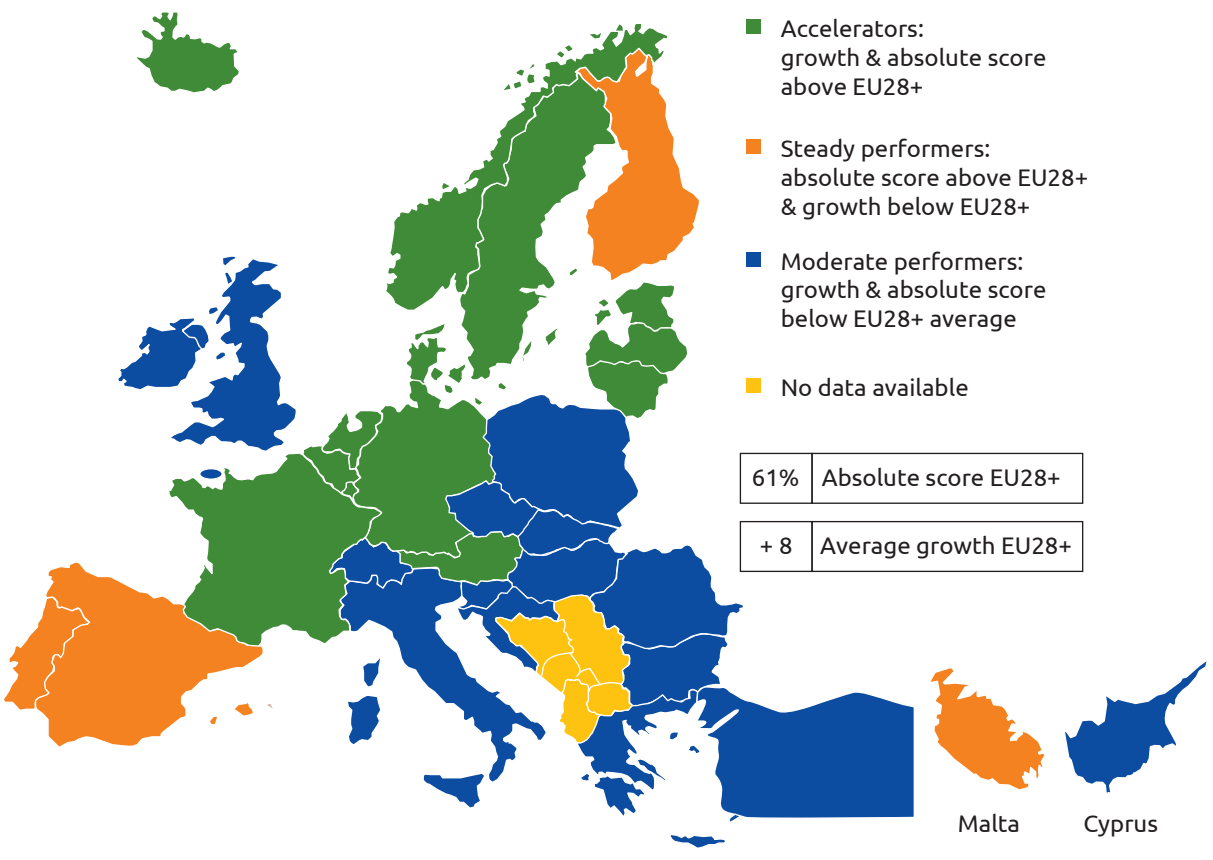

Figure I: Illustration how countries are progressing compared to the EU28+ average[1]

1 Average of scores for 4 top level benchmarks: user centricity, transparency, cross-border mobility, key enablers. Measured as average of all life events measured in 2012/2013 vs 2014/2015.

Service progress: driven by financial motives?

A clustering of the services in all life events under assessment reveals that:

- Financial services are most developed online, especially those with a high frequency and a high volume of users ('corporate tax', 'VAT claim'). Even though these services might seem more complex in terms of development, that hasn't hindered progress. Probably also as they actually bring in money for the government itself.
- Most progress is shown in the cluster of 'registrations' which consists (a.o.) of services related to business start-up. The fact that these services appear to be increasingly online could be caused by smarter re-use of data in the back-office that allows to automate and/or reduce obligatory registrations.
- Despite progress made in the Justice life event, this life event is still least mature of all life events under assessment. The services cluster of 'appeals' – that also includes services from other life events such as accessing social welfare appeals or challenging a VAT refund – is also lagging behind. A missed opportunity to empower users with digital means to attain justice.
- Finally, the 'permits' cluster scores worst and shows least progress over time. Even though permits occur more often than registrations (usually one-off) and have broad target groups of users, apparently public authorities do not consider these to be the priority areas for eGovernment development. Some of these permits are more locally oriented what could prevent consistent development. It could also mean that re-use of personal data, for instance to pre-fill permit applications, is still underdeveloped.

Benchlearning approach

The benchlearning approach clusters the countries investigated into groups. These groups are based on shared communalities between the countries. The indicators used are based around three subjects:

- 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.

Using these indicators five distinct groups are distinguished. Using these fixed groups a multi-year analysis is conducted to see the change in performance regarding Penetration and Digitisation. Using Penetration and Digitisation as variables five clusters are identified: Neophytes, High Potential, Progressive, Builders and Mature.

Using these groups of countries and the performance clustering the countries are able to learn from the good features of other countries.

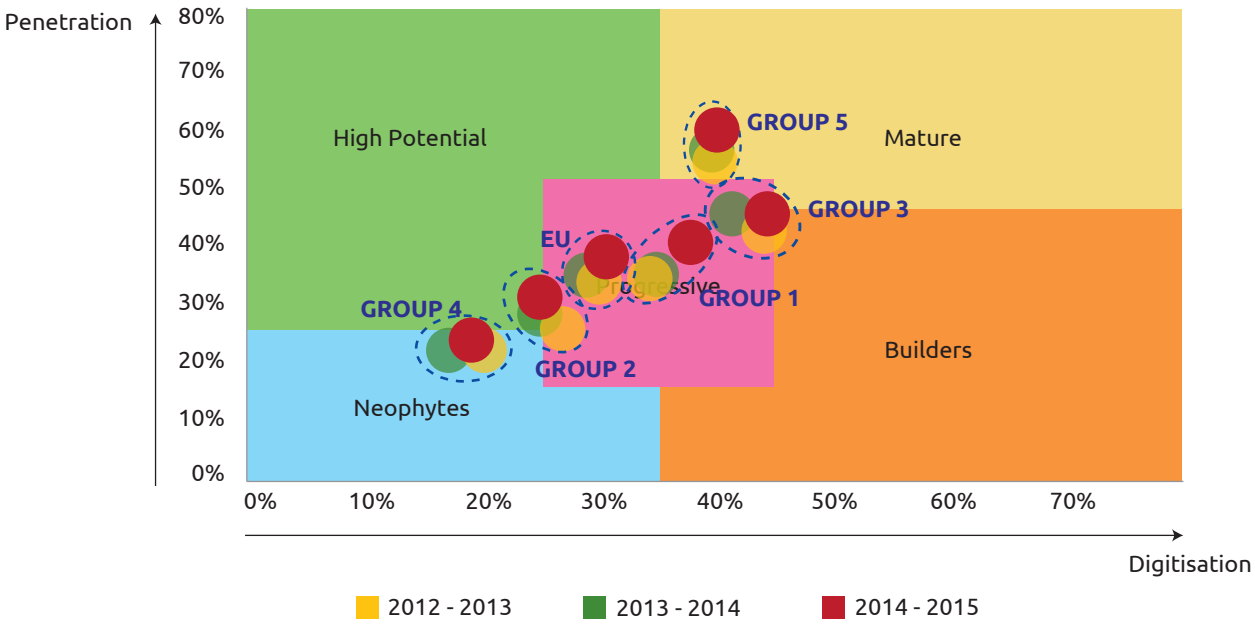

FIgure II. Performance of groups (three biennial averages for 2012/2013, 2013/2014, 2014/2015).

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 countries with the largest populations, and those with populations that 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 low level of education level and relatively few 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.

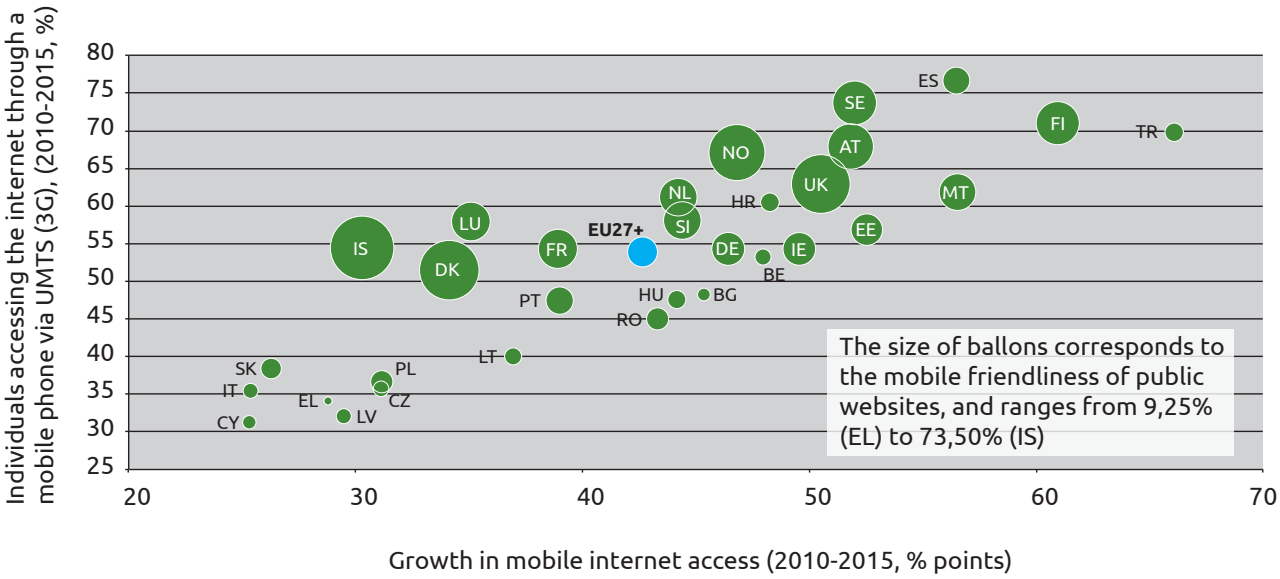

Figure III: Mobile access to Internet (2010-2015, EU27+, %), Mobile Friendliness (2015, EU27+, %)

Digital is not yet in the DNA of governments

Just as eGovernment performance is not revolutionarily improving, the policy priorities of the consecutive eGovernment action plans have not changed so much neither since the i2010 eGovernment Action Plan that was launched in 2006; now ten years ago. In all honesty we could doubt to what extent public sector has really advanced over the years in acquiring an attitude that can deliver on the potential of digital. In the words of the UK Government Digital Services' Executive Director Stephen Foreshew-Cain[2]: *'The biggest problem we face is re-shaping ourselves so that we're better placed to change as rapidly as the world around us'.*

If we look forward at the priorities of the new eGovernment Action Plan, which aims to shape new initiatives using seven distinct principles, we conclude that:

- On **'digital by default'**: Mandatory online services are common practice amongst countries for delivering businesses eServices (half of European countries has made one or more service mandatory online"), increasingly for services addressing students (11 of 34 countries), but hardly for other citizen services (4 of 34 countries). Exception: Denmark (43% of citizen services is mandatory online). Lacking skills - apparently 22% of Europeans refuses to use the online channel -urge countries to continue multichannel approaches.
- On **'once-only principle'**: A missed opportunity for increasing efficient service delivery as the use of authentic sources for pre-filling online services has increased slightly with 2 percentage points and is now used in approximately half of the public services (49%). The number of automated services has remained stable since the first measurement at 3% of all services. The use of legacy software likely has huge complications for the modernisation of eGovernment services and can hinder full implementation of this principle.

2 From GDS blog post, online available here: https://gds.blog.gov.uk/2016/05/11/what-government-might-look-like-in-2030/

- On **'inclusiveness and accessibility'**: Almost all European citizens have the possibility to access Internet. The use of mobile devices to access internet is taking a huge flight over the past five years, but still only 1 in 3 public websites is 'mobile-friendly'.
- On **'openness & transparency'**: Although transparency seems to be on the agenda of most governments, results are diffuse and do not reveal a consistent implementation of this principle. Knowing what transparency means is one thing, but applying that knowledge in practice is the competence that should become standard for every public servant. Countries that lead by example and practice a new attitude towards public services. They are ahead of the European average on both indicators. This group consists of Austria (AT), Germany (DE), Denmark (DK), Estonia (EE), Spain (ES), Finland (FI), France (FR) and the Netherlands (NL).
- On **'cross-border by default'**: The Business Mobility benchmark indicates that cross-border services are lagging behind services offered to country nationals. 25% of the services required of foreign entrepreneurs to start their business in another country is completely offline: meaning there is no information - let alone a service - available online. In contrast, entrepreneurs starting a business in their own country face such issues in only 2% of the cases. Foreign start-ups are also less able to find/access information on services (33% vs 39%) and using services across borders is only possible in 27% of cases (compared to 46% of services in the national context). Most common barriers are language, lack of information on the foreign website, and the need for a physical encounter to perform the service successfully.
- On **'interoperability by default'**: findings hint that interoperability in Europe could be slowly improving, but strong indicators are missing to give an accurate view on this.
- On **'trustworthiness & security'**: In most EU Member States the majority of the people feel some control over the information they provide online, but a sense of complete control is mostly lacking (only 15% of the European respondents on average). Citizens may gain a sense of control if they can manage their personal data on online public services. Interestingly, in some countries citizens feel in control of their personal data, while in reality their governments provide only limited transparency. The reverse is also true. There seems to be a personal data paradox here.

A promising European vision for achieving digital governments

The latest eGovernment Action Plan aims for acceleration of Digital Transformation of government. It offers a vision that '*by 2020, public administrations and public institutions in the European Union should be open, efficient and inclusive, providing borderless, personalised, user-friendly, end-to-end digital public services to all citizens and businesses in the EU. Innovative approaches are used to design and deliver better services in line with the needs and demands of citizens and businesses. Public administrations use the opportunities offered by the new digital environment to facilitate their interactions with stakeholders and with each other'.* It calls on seven principles to achieve that goal. It offers a comprehensive set of actions that will be deployed. But what does 'digital transformation' imply for a public organisation and what needs to be done to master digital?

Digital transformation requires digital capabilities and leadership capabilities

Before providing guidance into how governments can transform, it is first important to understand what digital transformation actually is and what distinguishes good performers from others. Research[3] conducted in the field of digital transformation learns that so-called 'digital masters' excel in two critical dimensions:

3 Westerman G., Bonnet D., McAfee A., Leading Digital. Turning technology into business transformation, HBR Press, 2014.

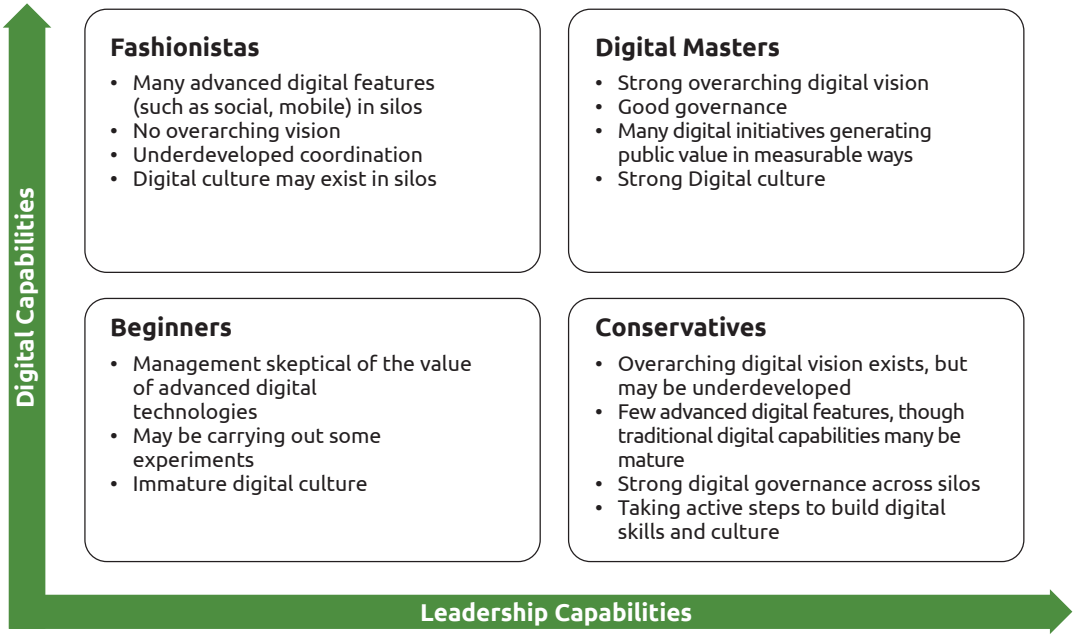

Figure IV: Digital maturity matrix highlighting four different types of approaches to driving digital transformation[4]

- **Digital capabilities:** a set of digital transformation elements implemented by the organisation, including the strategic assets and digital investments that are used to create those elements.
  The research showed executives are digitally transforming three key areas of their organisations: customer experience, operational processes and business models. Within each of the three pillars, different elements are changing. Executives are selecting among these building blocks to move forward in the manner that they believe is right for their organisations.
- **Leadership capabilities:** the way that senior executives drive change throughout the organisation. This includes creating and communicating vision, establishing governance and measurement mechanisms, and building a digital-ready culture. These serve as means for leaders to ensure that building blocks are built effectively and that the organisation has the skills and culture to drive (public) value from them.

This report provides a series of recommendations for public administrations to transform digitally (in chapter 6) and become a 'digital master'.

Investment in skills of the public sector workforce necessary to be able to master 'digital'

Successful digital transformation comes not from implementing new technologies but from transforming an organisation to take advantage of the possibilities that new technologies provide. Besides leading the change, this also requires that all people in an organisation - leadership, IT professionals, employees in other divisions – obtain the skills to embrace technology. Though accurate numbers on digital skills of civil servants

4 Westerman G., Bonnet D., McAfee A., Leading Digital. Turning technology into business transformation, HBR Press, 2014.

are not available, there are various studies that hint there is serious work required to ensure public sector can indeed accelerate its digital transformation.

The World Bank[5] indicated that while nobody can predict the full impact of technological change in coming decades, which may be faster and broader than previous ones, '*what is clear, however, is that policy makers face a race between technology and education, and the winners will be those who encourage skill upgrading so that all can benefit from digital opportunities*'.

We started this summary by stating that technology is changing the game quickly and will continue to do so, and that the biggest challenge is therefore not so much in anticipating what comes next, but ensuring governments are able to deal with change. Digital transformation of government – the sub title of the new eGovernment Action plan – can only be realised through building digital capabilities and effective digital leadership, supported by an adequately skilled public apparatus. This should be high on every public leader's agenda. If so, this could indeed proof to be the turning point for eGovernment development in Europe.

5 Digital Dividends, World Bank, 2016. Online available here: http://documents.worldbank.org/curated/en/896971468194972881/pdf/102725-PUB-Replacement-PUBLIC.pdf

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Who should read this report?

Anyone who is interested in how governments are coping with today's societal challenges, and exploiting modern technologies in that challenge.

Benchmarking is used to encourage mutual learning, to perform multilateral assessments, and to contribute to further convergence of the policies of Member States of the EU, Iceland, Montenegro, Norway, Serbia, Switzerland and Turkey (EU-28+). It is an essential part of the response to current socio-economic challenges. The benchmarking framework used here is founded on the key EU eGovernment priorities. The results build on a very rich source of research data, using different methods, with strong collaboration from Member States; they provide a robust and coherent insight into the current state of play of eGovernment in the EU-28+. This report offers insight into how services can be made **'twice as good, in half the time, for half as much'**, and can encourage public services to provide faster and smarter responses. Benchmarking is the first step in an ongoing benchlearning and improvement cycle. This report is produced in conjunction with two other deliverables, a Background Report and open research data.

	Insight Report (THIS report)	Background 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	Steer European and national eGovernment strategies	Realise direct improvements in public service delivery	Stimulate re-use of data and in-depth analysis

Table 1: Purpose of this report and coherence with study's deliverables

A turning point for eGovernment in Europe?

"The challenges of the digital revolutions are important. However, the benefits we will reap, if we are successful in digitising our economy and society are much greater. We must master the challenges of the digital revolution together."

Commissioner Günther H. Oettinger (Digital Society)

Keynote at the Mobile 360 Europe event (14 June 2016)

1

Introduction: A turning point for eGovernment in Europe?

During the past decade, governments and other public organisations have increasingly started to recognise the importance of eGovernment, which encompasses the complete field of citizens and businesses facing digital activities with public organisations as well as the constant pressure to work more efficient and effective. eGovernment is more than simply bringing public services online. For citizens and businesses, it not only offers great potential in terms of time and costs saving by using online channels, but new technologies also enable an active collaboration with policy makers and participation in processes that matter to them. It provides transparency and more control over personal data, and opens up public sector data which can be used to create real public value.

This requires a different attitude from public entities and public servants. An open mindset, supporting collaboration and participation. A mindset that should also be open to new ways of working internally: bringing down barriers between government agencies, between tiers and between countries. New operating models are needed to facilitate smart data re-use and further burden reduction. And these new models should also facilitate public servants in their new roles.

The eGovernment Benchmark provides insights into the current state-of-play of European governments. Until now, we have seen a modest uptake of eGovernment services and a steady, incremental progress in the offering of eGovernment services in Europe. Despite progress – mostly made on the supply side of services – some might say that the pace is too slow and technology is not used to its full potential. Likely, the pace is slow because the transformation of public organisations towards 'digital' requires more than a new organigram; it demands change of routines. It requires a clear vision of how eGovernment can change public services, but also what and who is required to achieve that. Leadership to realise joined-up approaches.

This report comes out at an interesting moment: it concludes the eGovernment Action Plan 2011-2015 and precedes the new eGovernment Action Plan 2016-2020. An excellent moment to provide a retrospective on 4 years of eGovernment benchmarking along the lines of the 'old' action plan, and at the same time look forward to the significant challenges ahead related to the new Action Plan priorities.

With the motto of *'Harnessing ICT to promote smart, sustainable & innovative Government*[6]*'*, the old Action Plan aimed to realise the vision proposed in the Declaration made at the 5th Ministerial eGovernment Conference (the 'Malmö Declaration[7]'). According to this vision, by 2015 European public administrations should be "recognised for being open, flexible and collaborative in their relations with citizens and businesses. They use eGovernment to increase their efficiency and effectiveness and to constantly improve public services

6 Online available here: https://ec.europa.eu/digital-single-market/en/european-egovernment-action-plan-2011-2015
7 See http://www.egov2009.se/wp-content/uploads/Ministerial-Declarationon-eGovernment.pdf

in a way that caters for user's different needs and maximises public value, thus supporting the transition of Europe to a leading knowledge based economy." It was this Action Plan that the current eGovernment Benchmark was built for to monitor. This report will take stock of achievements made so far.

The new eGovernment Action Plan 2016-2020 aims to remove existing digital barriers to the Digital Single Market and to prevent further fragmentation arising in the context of the modernisation of public administrations. It aims to be the instrument to join up efforts. While Member States pursue their own strategies and activities, this Action Plan – based on a shared long-term vision - sets out a number of principles that forthcoming initiatives should observe in order to deliver the significant benefits that eGovernment can bring to businesses, citizens and public administrations themselves. It steadily builds on what was once set out in Malmö providing stable directions towards *'Digital Public Services fit for the future'* (the motto of this action plan[8]). But there is a difference in the development of the new plan, reaching out to and consulting a broad eGovernment community across Europe, and the actions that are the outcomes of this process. Not only will the Action Plan apply a more dynamic and flexible approach which is easier to keep up to date with fast evolving technology developments, it also lists several actions that explicitly list responsible directorates within the Commission (besides CNECT also DG JUST, GROW, TAXUD, MOVE, EMPL, SANTE, ENV, COMM and DIGIT[9]). The full benefits of eGovernment can only be realised through a collaborative and joined-up approach, and these developments are testimony to that.

The next edition of the eGovernment Benchmark will take these new developments into account[10], but already in this report we will share the insights that can be derived at this moment from the current eGovernment Benchmarking data as well as other external sources.

Only the future can show whether we are at a turning point for European eGovernment, but the present is already calling for it.

8 Online available here: https://ec.europa.eu/digital-single-market/en/european-egovernment-action-plan-2016-2020
9 For an overview of actions and owners, please see: https://ec.europa.eu/futurium/sites/futurium/files/egovernment_action_plan_-_overview_of_actions_for_platform_q2_2016_0.pdf
10 E-Government Benchmark Method; an update for a new cycle 2016-2010. To be published together with these reports.

2

eGovernment Benchmark: what has been measured and how

The eGovernment Benchmark evaluates the priority areas of the eGovernment Action Plan 2011-2015. Progress on every priority area is measured by one or more indicators, so-called **top level benchmarks**:

- **User-centric Government** assesses the availability and usability of public eServices and examines ease and speed of using those eServices.
- **Transparent Government** evaluates the transparency of government authorities' operations, service delivery procedures and the level of control users have over their personal data.
- **Cross-border Mobility** measures the availability and usability of services for foreign citizens and businesses.
- **Key Enablers** assesses the availability of 5 functionalities, such as Authentic Sources and eID.

All top level benchmarks consist of multiple sub-indicators. These are in turn measured by a number of questions regarding the quality or quantity of eGovernment services on a specific aspect.

In order to assess all indicators, the current benchmark uses **Mystery Shoppers** who are trained and briefed to observe, experience, and measure a (public service) process. Mystery Shoppers act as prospective users and follow a detailed, objective evaluation checklist. Mystery Shopping was the method of choice for the assessment of all top level benchmarks under review this year.

After the Mystery Shopping exercise, results are **validated by Member States**. This is an intense collaborative process with participating countries representatives. Member States are included at the start and at the end of the evaluation: at the start in order to validate the sample and key characteristics of the services under assessment; at the end to validate the research results in collaboration with the responsible organisations in a country and possibly correct obvious erroneous findings.

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. Each life event is associated with a customer journey that businesses or citizens experiencing this life event will go through. They provide the starting point for the assessment by the mystery shoppers.

Each life event is measured once every two years. This two-year cycle allows countries to arrange follow up on the results and to implement improvements after each measurement. This years' measurement allows for a second time full-cycle comparison, providing insights into progress made in countries and in Europe on average. Table 2 provides an overview.

	Background Report	Open research data
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)

Table 2: Overview of life events under assessment in 2012 - 2015

A retrospective on eGovernment performance in Europe 2012-2015

'The industrial revolution of our time is digital. … As companies aim to scale up across the Single Market, public e-services should also meet today's needs: be digital, open and cross-border by design. The EU is the right scale for the digital times.'

Andrus Ansip, Vice-President for the Digital Single Market

3

A retrospective on eGovernment performance in Europe 2012-2015

Following the short introduction on the eGovernment Benchmark method in chapter two, this section will list achievements accomplished over the past years from the perspective of the former eGovernment Action Plan (2011-2015).

Before taking a preview on the status of the key principles of the new eGovernment Action Plan in section four, this section looks back at a cycle of four years of benchmarking eGovernment in Europe by addressing three questions:

- What progress have the top level benchmarks User Centricity, Transparency, Cross-Border Mobility and Key Enablers demonstrated over the years?
- How have countries advanced in these two series? Who is leading the charts, who made most progress?
- Which life event made most progress and in which area(s)? This paragraph compares progress made in the domains where eGovernment is applied. And also: which (kind of) services made most/least progress?

The following paragraphs will show the state of the art of the eGovernment in Europe in a crucial moment. It stands between the conclusion of the eGovernment Action Plan 2011-2015, which called for a new generation of "open, flexible and collaborative seamless eGovernment services", and the start of the new Action Plan to 2020 that pursues the vision of an "open, efficient and inclusive, providing borderless digital public services".

3.1 Results reveal an acceleration of eGovernment implementation in Europe

Over the last four years, the European eGovernment landscape has gone through a visible transformation, which was needed to achieve the policy targets set by the eGovernment Action Plan 2011-2015. Through three biennial rounds of assessment, the eGovernment benchmarking exercise has been able to capture the promising progress made by the EU28+, and measure it against four top-level indicators (User Centricity, Transparency, Cross-border Mobility, and Key Enablers). Seven customer journeys have been monitored, at European and national levels, to understand how the interactions between citizens and business and the public administrations have evolved, and the extent to which the four priority areas of the eGovernment Action Plan 2011-2015 have been achieved.

Overview: an acceleration of eGovernment implementation in Europe

Providing a bird's eye view of the results of the eGovernment Benchmark over time, the figure 3-1 sums up the dynamics of the top level benchmarks in the biennial measurements.

The User Centricity benchmark is the most mature with an absolute score of 77. Cross-border mobility is the benchmark with the highest growth over time, driven by both the citizen indicator that increased considerably over the years (+13 compared to the first measurement) as well as the business indicator (+11).

On the positive side: all benchmarks have progressed over time, and with each biennial measurement all benchmarks made more progress. Comparing the first with the second biennial average shows an increase of 3.2 percentage points, while the progress since the second biennial average was 5.6 percentage points. Even the Key Enabler benchmark has increased quickly in the last year of measurement (+4), while previously it only advanced moderately (+1). These are positive signals that could point towards an acceleration of eGovernment implementation in Europe.

The following paragraphs provide more details with respect to each of these top level benchmarks.

User Centricity: still need to focus more on user's needs

Responding to the User Empowerment priority area of the 2011-2015 Action Plan, this indicator assesses whether the expectations of users are met by the government when providing online services, to what extent they are available and how the online user experience is. In fact, as stressed by the eGovernment Action Plan, eGovernment services should be designed around the users' needs and support flexible and pro-active interactions between citizens and businesses, and public organizations. User Centricity showed growth, going from a score of 70 in 2012-2013 to 77 in 2014-2015.

The general trend of this indicator is positive, but looking in more detail at the progress of the sub-indicators reveals some relevant nuances. Generally speaking, governments have advanced in making public services digital, but focussed less on the quality of the delivery from the user's perspective. While the online availability of services at EU28+ level reached 81% (+9 points since 2012) and online usability 83% (+4 points since 2012), the ease of using and speed of using these services online - as perceived by the mystery shoppers - advanced poorly, increasing by only 1 percentage point since the first assessment in 2012.

European public services for citizens and businesses are not at the same level: over the years they both have advanced in User Centricity, but the business-oriented services always perform better. However, it is encouraging that citizen-related life

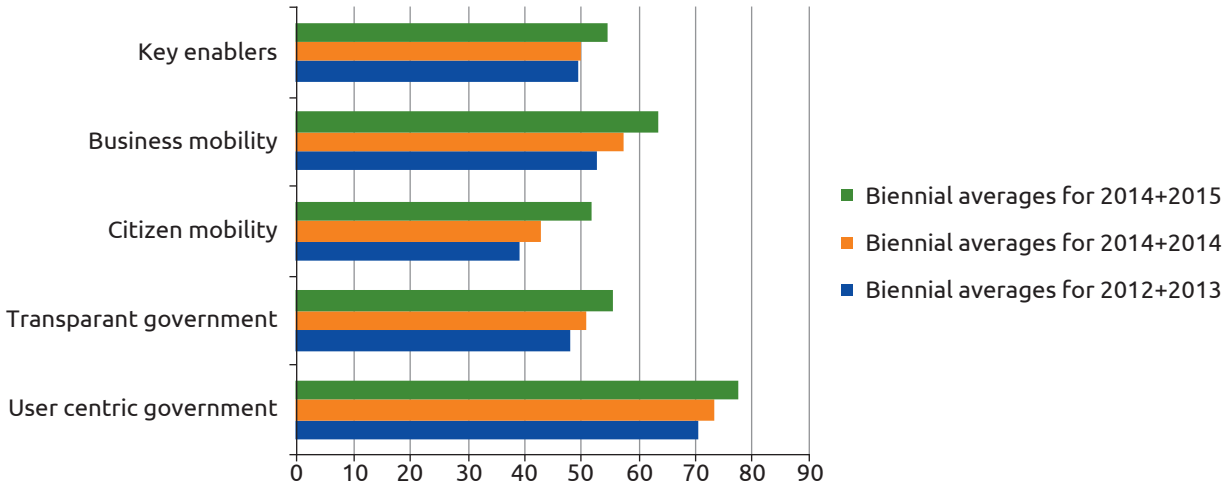


Figure 3-1: Biennial Averages of the Top level benchmarks (for three biennial averages, EU28+)

events, like *Starting a small claims procedure or Moving*, have seen a double-digit growth over these years. This growth was especially focussed on availability and usability, as from the demand-side of the services, citizens have not gained major benefits in terms of ease and speed. Among the three government tiers (national, regional, and local) assessed, the results show that most of the public services and information available online are delivered by the national government. All government levels have made progress over the years, but the national and regional government have increased more than the local (5 points each versus 2 points). The results, however, must be read considering that across Europe the government structures can differ significantly.

Transparency: progress, but not consistent and with much variation between and within countries

Transparency improvement is part of the User Empowerment priority area, and focuses on building trust with citizens and improving policy makers' accountability through a better use of personal data in decision making process. To understand what the status of the implementation of this policy priority is, the eGovernment Benchmarking has three different perspectives:

- The transparency of public organizations' operations, measuring to what extent information about themselves and their processes are accessible to the users. This is the highest scoring sub-indicator, showing an average score of 64.
- The transparency as accessibility of personal data to users, assesses whether and how much users can access and proactively manage their personal data retrieved by the public organizations and how, when, and by whom it is being processed. This sub-indicator measures 55% on average.
- The transparency of service delivery procedures investigates whether information about the process to provide a service online is available to the users (including information on time, process and delivery of the service). Currently it scores 47% at EU28+ level. This makes it, on average the lowest sub-indicators of the Transparency top level benchmark.

At top level, this benchmark has increased of 8 points over the years, reaching 56% in 2014-2015. However, despite the general improvement, the implementation of good transparent procedures is still lacking in large parts of Europe. Across Europe governments have room for improvement to make their organisations more transparent.

Cross-border services: businesses are better served, but like citizens, demand a higher usability

The borderless mobility of citizens and businesses across Europe has become even more relevant since the launch of the Digital Single Market Strategy, representing one of the pillars for its realisation.

Within the eGovernment benchmarking exercise, this top-level benchmark measures the extent to which eGovernment services support citizens' and business' mobility across the EU28+ borders, and looks at these two areas separately. The benchmark makes use of the User Centricity's indicators to assess to what extent services are available online (quantity) and usable (quality).

Currently the assessment shows that, at the top-level benchmark, business-related services are more advanced in terms of cross-border mobility than the citizen-related services: even if the latter increased more since the first measurement (+13 points against +11 for the business), business mobility gets a higher score (64).

Business-related services are better delivered to cross-border users first from the usability perspective: public organiza-

tions have achieved considerable improvements in providing support functionalities and online help tools to their foreign business users. Currently there is a gap of 21 percentage points with the citizen-related services on usability, so a next step for public organisations could be to focus on the improvement of this type of services. As it was highlighted in the national assessment, the supply-side performs better than the demand side. For both business and citizen cross-border online services, the lowest results are still in the demand side. Even if from the business perspective the results are slightly more optimistic, very little progress has been made in these areas and these sub-indicators lag poorly behind the others.

Key Enablers: the engine of digital transformation starting to make pace?

Further efforts should be made by public administrations to speed up the modernisation of their processes and services with an integrated use of ICT, and through a faster uptake of the key digital enablers that are necessary to effectively deliver eGovernment services to users and facilitate the collaboration across public organizations. The transition to a full adoption of these technologies by governments and public organizations is still ongoing.

The assessment investigates whether five identified enablers are available and to what extent they are enabled in the online services (quality). Despite their high relevance in ensuring an effective and secure delivery of online services, the top-level benchmark score is the lowest (54) in the eGovernment benchmarking framework after the Citizen Mobility indicator (52).

Looking at the single enablers, the scores are lower than showed for other indicators and their progress over the years has been relatively small or even absent. The SSO functionality, allowing users to access multiple websites logging in only once, has the highest score among the five enablers; scoring marginally higher than eID, which stands at the same level. Both measure 62. While little improvements have been achieved in the implementation of the SSO functionality, which has increased from 58 in 2012-2013, to 62 in 2014-2015, the electronic identification shows no progress over the years.
The eDocuments enabler, which enables users to send authenticated documents online to public organizations, has an average score of 61 showing a 4 points increase since 2012-2013.

The Authentic Sources enabler (that facilities pre-filling of online forms and the re-use data by governments to deliver services automatically), and the eSafe functionality (providing a secure virtual repository for users' data and documents) lag behind in the assessment, with respectively a score of 49 and 44 in 2014-2015 assessment. Again the availability of the Key Enablers is higher for the business-oriented services than for the citizens-oriented services, with a growing gap across the different rounds of measurement. Given the relevance of these functionalities and their contribution to the implementation of smart government, it is key for public organisations to focus their efforts in this area.

3.2 Countries on the 'Digital Diagonal' push (or drag?) Europe forward

The previous paragraph concluded that Europe seems to cautiously accelerate in performance. This paragraph shows how individual countries contribute to that achievement. It is no surprise that there is huge variability in eGovernment performance across Europe. It seems however that performance is polarising: a string of countries from the South-West to the North-East of Europe perform above the European average and are also showing stronger progress than the European average, while the other European countries are behind the European average on both indicators. There are no countries that – while behind the European average – show strong growth in order to catch up.

The standard deviation (between best and worst performers) is growing since the first biennial measurement. On the positive side it can be concluded that a 'Digital Diagonal' of countries is pushing Europe forward. We should care however that this does not turn into 'dragging', as the gap with lagging countries is growing faster than is acceptable in a Digital Single Market.

The following paragraphs reveal how countries have advanced for each of the policy priorities.

User Centricity

At national level, many countries in the EU28+ show good results on User Centricity , with the Top-Five Malta, Austria, Estonia, Portugal and Finland leading the way.

Interestingly, the greatest progress over the years has been achieved by Austria (+10 points since the 2012 measurement) and Estonia (+8), while Portugal and Spain are stable since 2012, losing some positions in the overall ranking. In the lowest positions we find Hungary and Romania, scoring over 20 percentage points less than the average.

Both the supply and demand side show interesting differences. Looking at the sub-indicator Online Availability, Malta is the only country in Europe where all public services are available online. Austria and Portugal follow suit with a 98% availability score. Greece and Romania have the lowest scores. Showing a little progress through the years, these countries are still

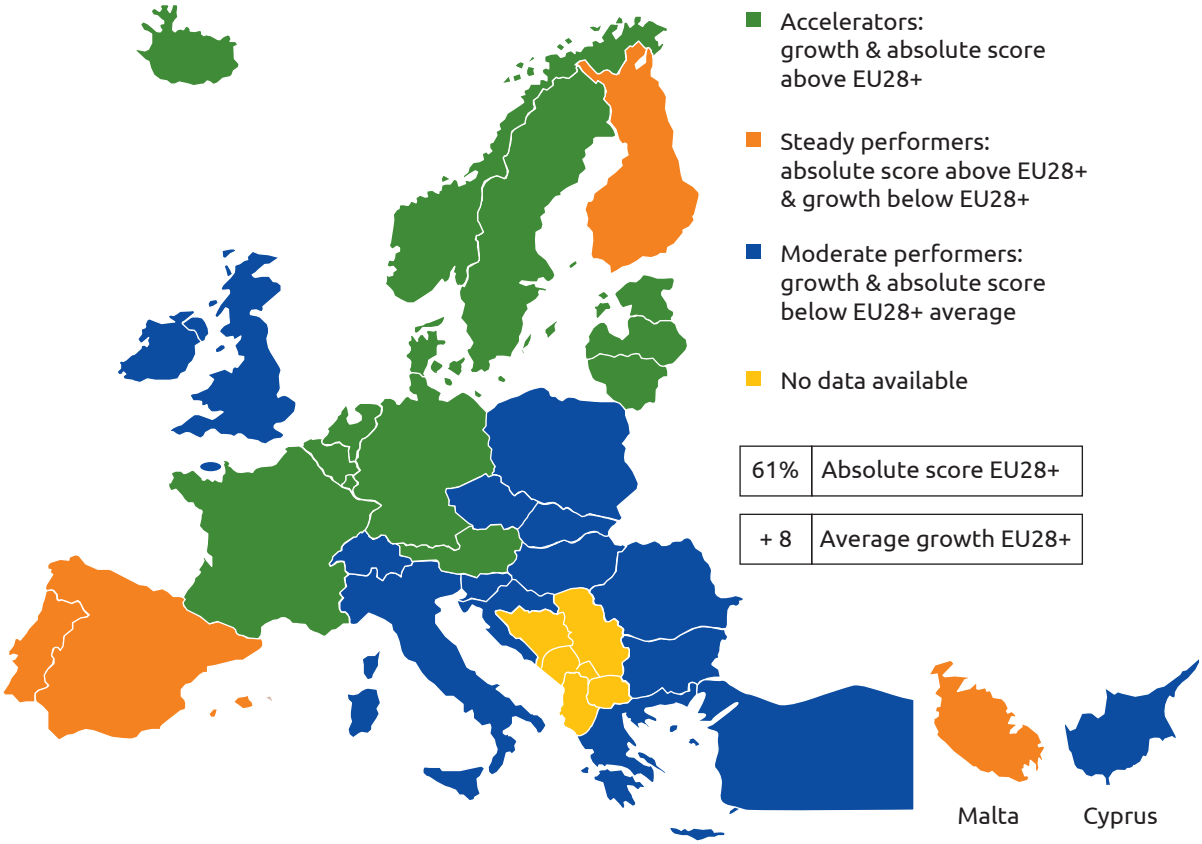


Figure 3-2: Illustration how countries are progressing compared to the EU28+ average [11]

11 Average of scores for 4 top level benchmarks: user centricity, transparency, cross-border mobility, key enablers. Measured as average of all life events measured in 2012/2013 vs 2014/2015.

at the beginning of their journey to a full eGovernment. Spain, Finland and Malta have achieved the top score for the Usability indicator as they fully provide help functionalities and online support to users of their public service. Hungary and Romania still lag behind the EU28+ group.
On the demand side, the scores are not as high as on the supply side. Even if with small progress over the years, Estonia, Malta, the Netherlands, Denmark, and Finland provide the easiest way to navigate public services. Romania and Slovakia are again the countries where the few online services are not perceived as user-friendly. Taking into account the time the user takes to go through the online services (speed of use) Estonia and Iceland are leading the way. Despite the fact that this indicator scores relatively low at country level, little progress has been achieved over time, most of all for the countries in the top part of the ranking. The Republic of Serbia and Slovakia have the lowest scores.

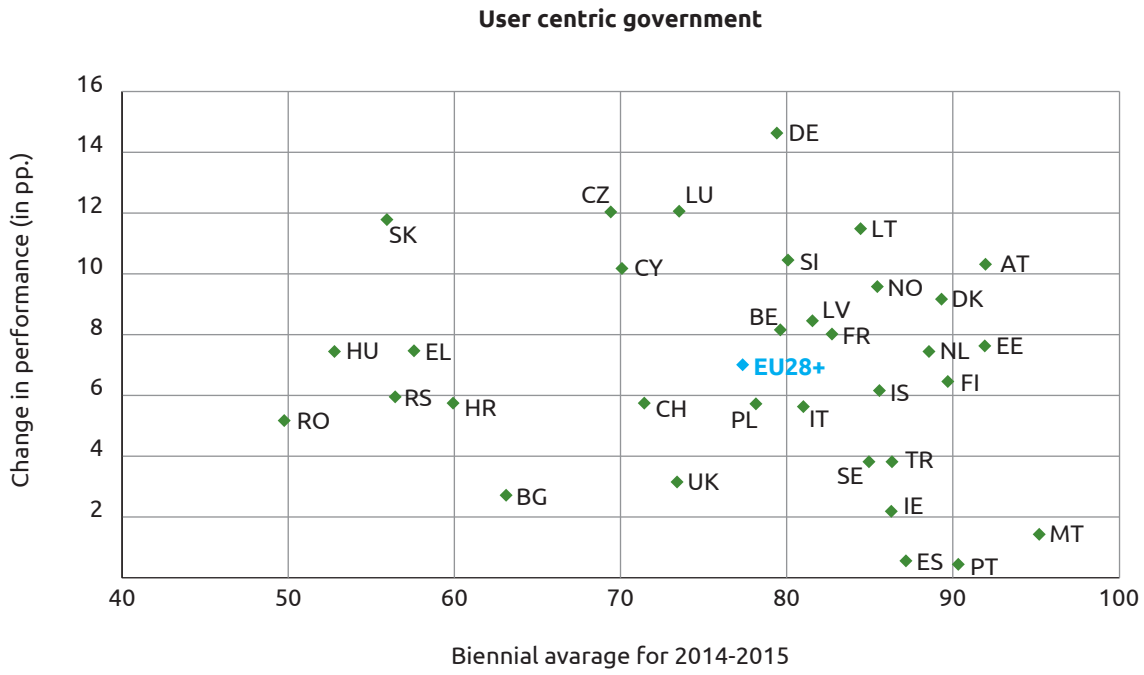
Transparency
The transparency top-level indicator shows that Malta is the top performer (97%), followed by Estonia (81%), Lithuania (79%) that shows the highest jump over the 4 years of measurement, Portugal (75%), and Austria (73%). Across the three sub-indicators the analysis shows that countries perform very differently, as reflected in the rank of the top five performers: while Malta performs always as the best, Estonia, for example is very high in the transparency of public administrations (89% in 2014-2015), but relatively low, at 74%, in the accessibility of users to their personal data. Interestingly, the major efforts done by Iceland to make the personal data more accessible to its users are well visible in the growth of this indicator (from 49 in 2012-2013 to 93 in 2014-2015), so their potential in this policy area has been almost fully fulfilled. In the case of the transparency of public organizations Germany is the country that has achieved the highest increase (from 45% in 2012-2013 to 66 in 2014-2105). In the area of the transparency on the service delivery process, there is the greatest variety across the EU28+ countries. While Malta is always in the top position, Germany and Lithuania show the highest increases over the years. Interestingly, Portugal's score has decreased of 3 points in the 2014-2015 measurement.

Cross-border Mobility
At country level, the results for this indicator show that Europe-wide progress has been made. This is visible first in the EU28+ average that over time has achieved a +30-points growth.

United Kingdom, Denmark and Sweden get the highest scores for Business Mobility, even if their performance for Citizen Mobility is considerably lower. Among the good performers it is noteworthy that France has made considerable effort in this area, and its score of business mobility (which in 2012-2013 was well below the EU average) has improved over time with a +37-points growth. The Republic of Serbia and Romania have the lowest scores, almost 50 points below the EU average.

Citizen mobility is especially high for Malta, Estonia and Sweden. The latter has considerably improved its performance since the 2012-2013 assessment. Interestingly, Luxembourg shows a consistent growth over time and a 30 percentage point increase from 2012-2013 (39) to 2014-2015 (69). Spain, Hungary and Republic of Serbia have the lowest scores. The United Kingdom and Malta, as English-speaking countries, stay in the top positions of the ranking as users may experience lower language barriers when interacting with their public organizations. Also Ireland performs relatively high in both business and consumer mobility.

Key Enablers
Looking at this benchmark from the countries' perspective a great variability in the performance is evident. Estonia and



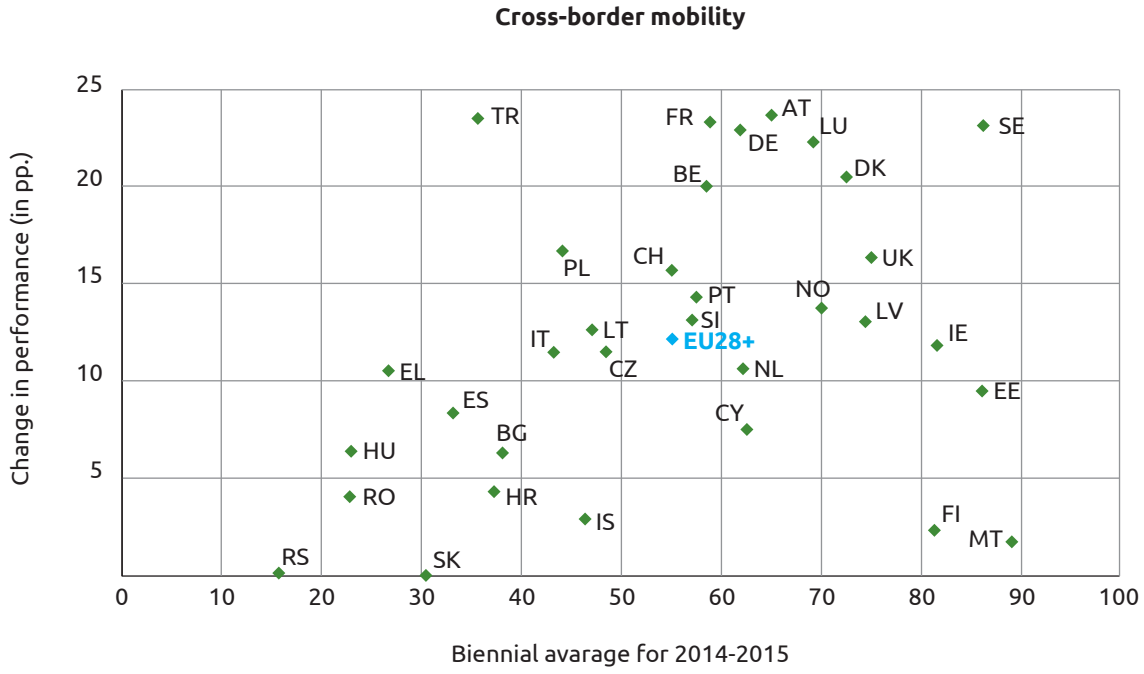
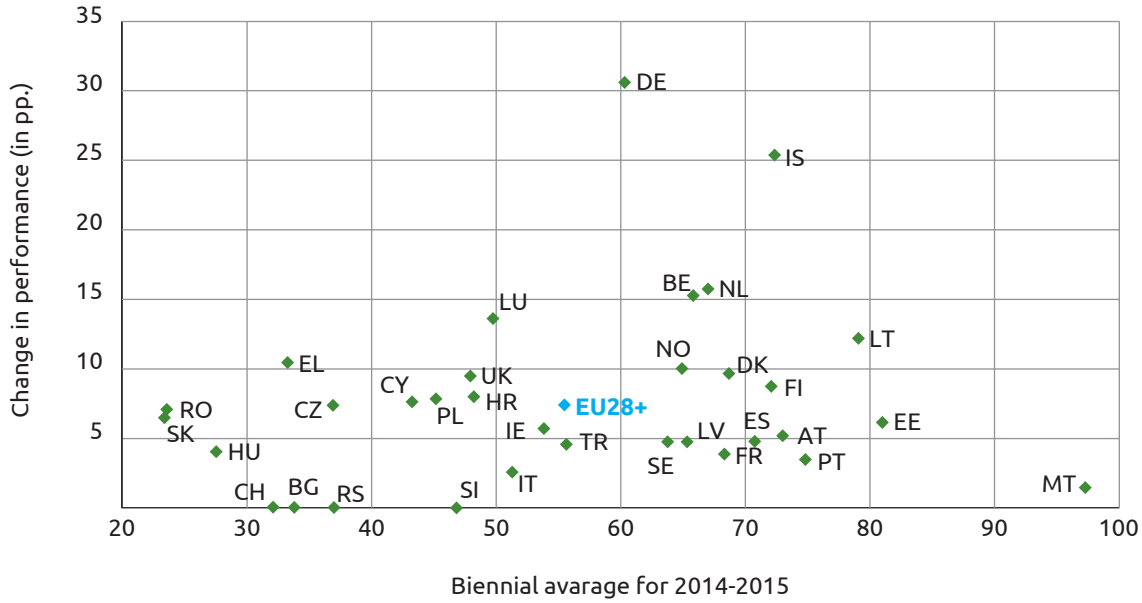


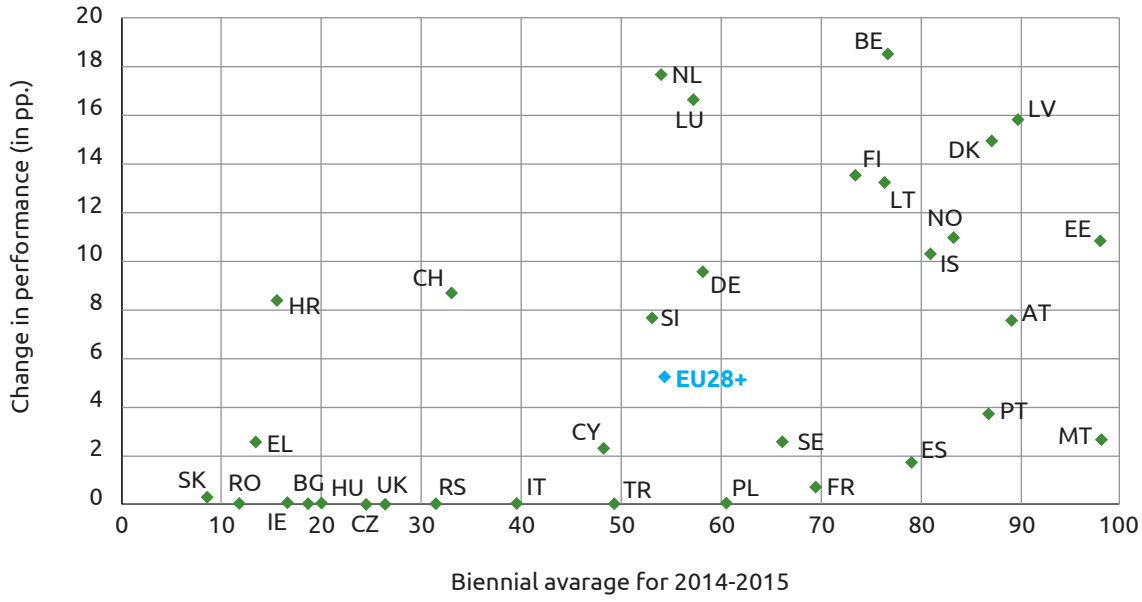
Figure 3-3: European countries by top level benchmark (2014/2015 absolute performance vs. growth)[12]

12 Some countries had small negative growth over the years, this has been depicted as a zero score in the figure.

Transparent government



Key enablers



Malta, as seen in other areas of the assessment have kept their position as top performers since the first measurement in 2012-2013, and have almost achieved the full implementation of these technologies in their digital services.
The analysis reveals that lots of countries have made substantial progress focusing on a specific Key Enabler. In 2014-2015, for example, a number of countries have fully implemented some Key Enablers. This suggests that most countries take a step-by-step approach, by developing one Key Enabler at the time. Specifically:

- The full implementation of SSO functionality (100%) has been achieved by 9 countries (AT, DK, EE, ES, FR, IS, LV, MT and PT).
- In six member states (AT, EE, FR, LV, MT and NO) the eSafe Enabler is now available for all online public services.
- Electronic identification is fully available in Estonia, while Malta, Latvia, Spain and Turkey are close to enable completely this functionality
- Malta is the top performer and has completely implemented also the eDocuments Enabler (100), while EE, PT, LV, and ES follow, all scoring at the same level (94%).
- For the Authentic Sources indicator, EE, MT, FI, PT, and NO show the highest score and the almost complete implementation of this functionality.

Finally, the figure 3-3 shows the EU28+ countries (except ME) from left to right in alphabetical order. The scores on the Y-axis indicate how they are positioned in the four top-level benchmarks assessed, and compared to the EU28+ average.

3.3 eGovernment implementation priorities mostly with financial eServices and eRegistrations

Following the previous description of progress made on policy priorities and by countries, this paragraph zooms in to the various domains where eGovernment is applied: how did the life events advance over time, and which (clusters of) services are most mature?

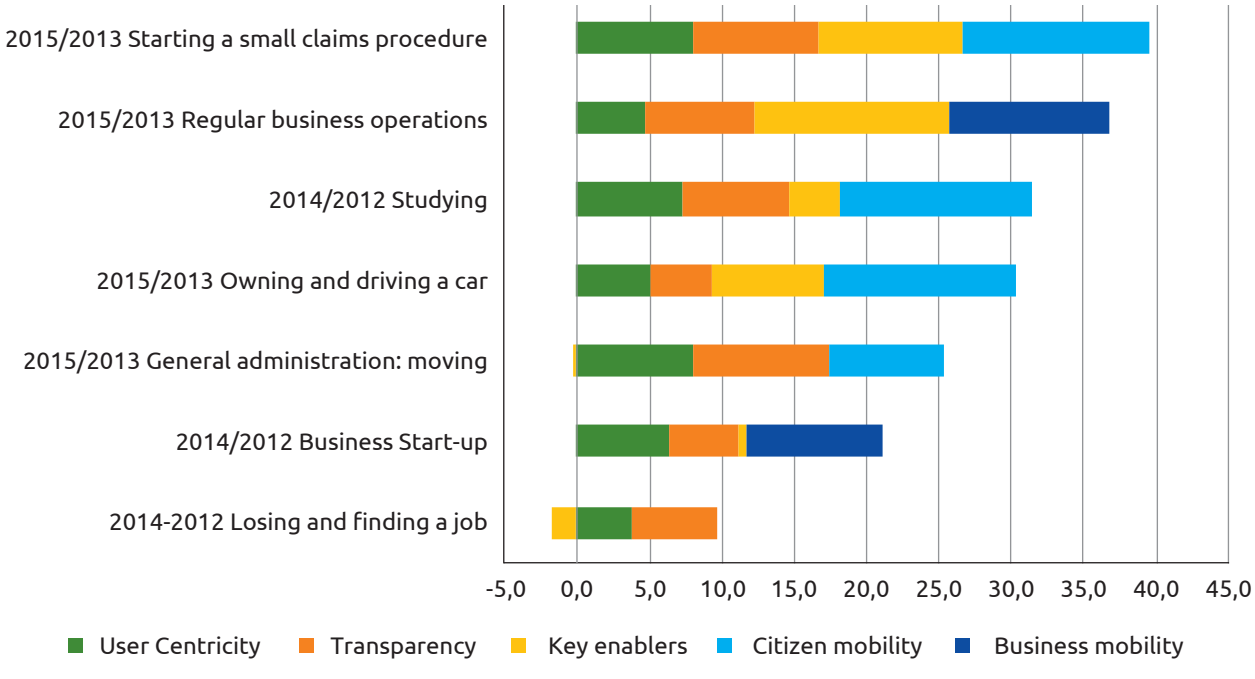


Figure 3-4: Growth of top level benchmarks across the life events. (percentage points, EU28+)

First, we take a look at the two-years growth trends of the top level benchmarks across the 7 life events monitored from 2012 to 2015.

Although its average scores under each benchmarks are the lowest of all life events, positive progress has been done to improve the delivery of public services related to *Starting a small claims procedure*, both at national and cross-border levels. Public organisations have worked in terms of simplification and elimination of administrative processes, and as the figure shows, this has created positive impacts on the reduction of the existing national burdens. In this context, dealing with public administrations online for citizens has become a little easier, also thanks to an encouraging increase of the uptake of the key enablers. However, governments are still on their way to make this service fully digital and user oriented.

On the business side, the assessment has seen a positive growth in the life event that investigates the experience of companies and entrepreneurs dealing with *Regular business operations*. As said before in this chapter, business-related services are the most advanced in terms of online readiness, and this life event shows good scores across all the benchmarks. Interestingly, public administrations have intensively adopted the key digital enablers, and the average score of this benchmark for this life event is the highest across all services assessed.

As an opposite trend, the benchmark for Key Enablers has decreased between 2012 and 2014 as regards the online services supporting people in *Losing and finding a job*. An in-depth look at four key enablers reveals no progress on eID, eDocuments, Authentic Sources, and Single Sign On. Negative scores may be partially due to the inclusion of new countries in the benchmark or technical details in the measurement rather than governments actively taking Key Enablers offline. Still, the score highlights that Europe has made very little progress in this field for this life event. The only positive note concerns the eSafe solutions (+7 points between 2012 and 2014).

Second, interesting insights emerge when analysing how individual services advanced over the years. Even better than drafting rankings of those individual services that made most or least progress, creating clusters of four typologies of services generates an interesting overview. The clusters consist of services where users have to interact with government (so called 'basic' services; without distinction between business and citizen services) and the figure 3-5 depicts the extent to which services in these clusters moved to fully online:

1. Financial services: services related to e.g. taxes, insurances, fines, grants, allowances;
2. Registrations: services related to for instance company registration, address change, social security;
3. Permits: these services cover an environmental or parking permit, or a particular business certificate;
4. Appeals: related to services such as claiming refunds, compensation and other appeals.

This overview reveals that financial services are most developed online. Services such as 'corporate tax', 'VAT claim' and 'driving fines' can be characterised as services with a high frequency and a high volume of users. From this point of view it makes sense these are taken on with priority. Probably also as they actually bring in money for the government itself. The latter might explain that even though these services might seem more complex in terms of development, that hasn't hindered progress.

Most progress is shown in the cluster of 'registrations' which consists (a.o.) of services related to business start-up. The fact that these services appear to be

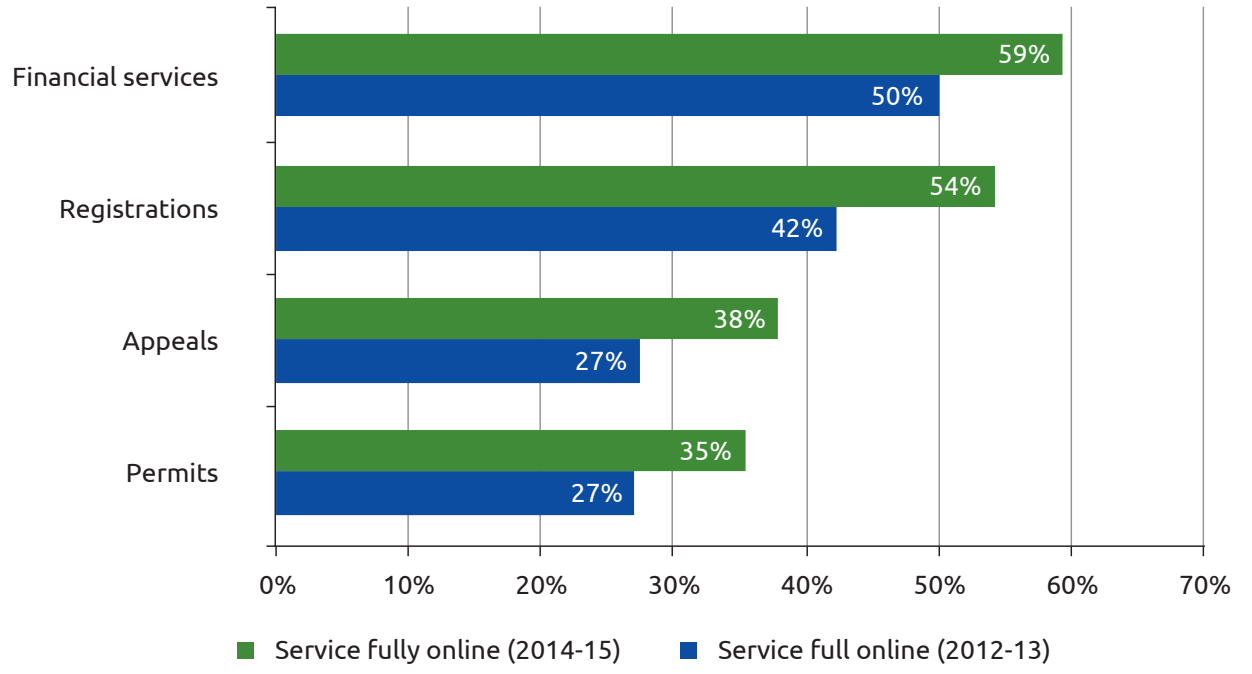


Figure 3-5: Progress of four service clusters: financial, registration, permits and appeals

increasingly online could be caused by smarter re-use of data in the back-office that allows to automate and/or reduce obligatory registrations.

Despite progress made in the Justice life event (as mentioned above), this life event is still least mature of all life events under assessment. The services cluster of 'appeals' – that also includes services from other life events such as accessing social welfare appeals or challenging a VAT refund – is also lagging behind. A missed opportunity to empower users with digital means to attain justice.

Finally, the 'permits' cluster scores worst and shows least progress over time. Even though permits occur more often than registrations (usually one-off) and have broad target groups of users, apparently public authorities do not consider these to be the priority areas for eGovernment development. Some of these permits are more locally oriented what could prevent consistent development. It could also mean that re-use of personal data, for instance to pre-fill permit applications, is still underdeveloped.

When assessing the best and worst performing individual service, there is an important distinction between 'basic' services and 'extended' services. Basic are those services where users *have* to interact with government, i.e. steps which have to be taken. Extended services on the other hand may not be mandatory but rather represent an effort by public organisations to provide something extra. For example, an option to search for jobs is a basic service to someone going through the *Losing and finding a job* life event, while allowing him to set up a job alert (alerting him when interesting new vacancies which fit his profile come available) is an extended service. The figure 3-6 reveals the ten most and least online available services in Europe, as well as those services that countries have mostly brought online in the past years.

It shows that *Owning and driving a car* is the main provider of services that score badly for Online Availability: five out of the ten worst scoring services belong to this life event.

Regarding the best scoring services, business-related services have an obvious lead. This is in line with the results from the latest editions of the eGovernment benchmark that have consistently shown high Online Availability scores for these business life events as compared to citizen life events.

The figure 3-6 also reveals that for extended services, where governments can go the extra mile in their (online) offerings to citizens and businesses, in most cases, the worst scoring extended services score better than the ten worst scoring basic services. This comes as a surprise as one would expect basic services to be a priority. Although the development of online extended services is a welcome addition to the government services, the opposite would be even more welcome, since basic services are the core of the eGovernment landscape.

An interesting fact for the worst scoring extended service *(Notification to post and utilities, after moving)*, is that at the same time, it is also an automated service in some cases. In this case, the question is not online or offline, but whether or not governments view it as their task to accommodate citizens in this step.
As regards progress being made over time the analysis brings forward that services in the Justice life event ('Small claims procedures') have seen most progress and are increasingly online available. This is true for both obligatory steps as well as services that provide information.

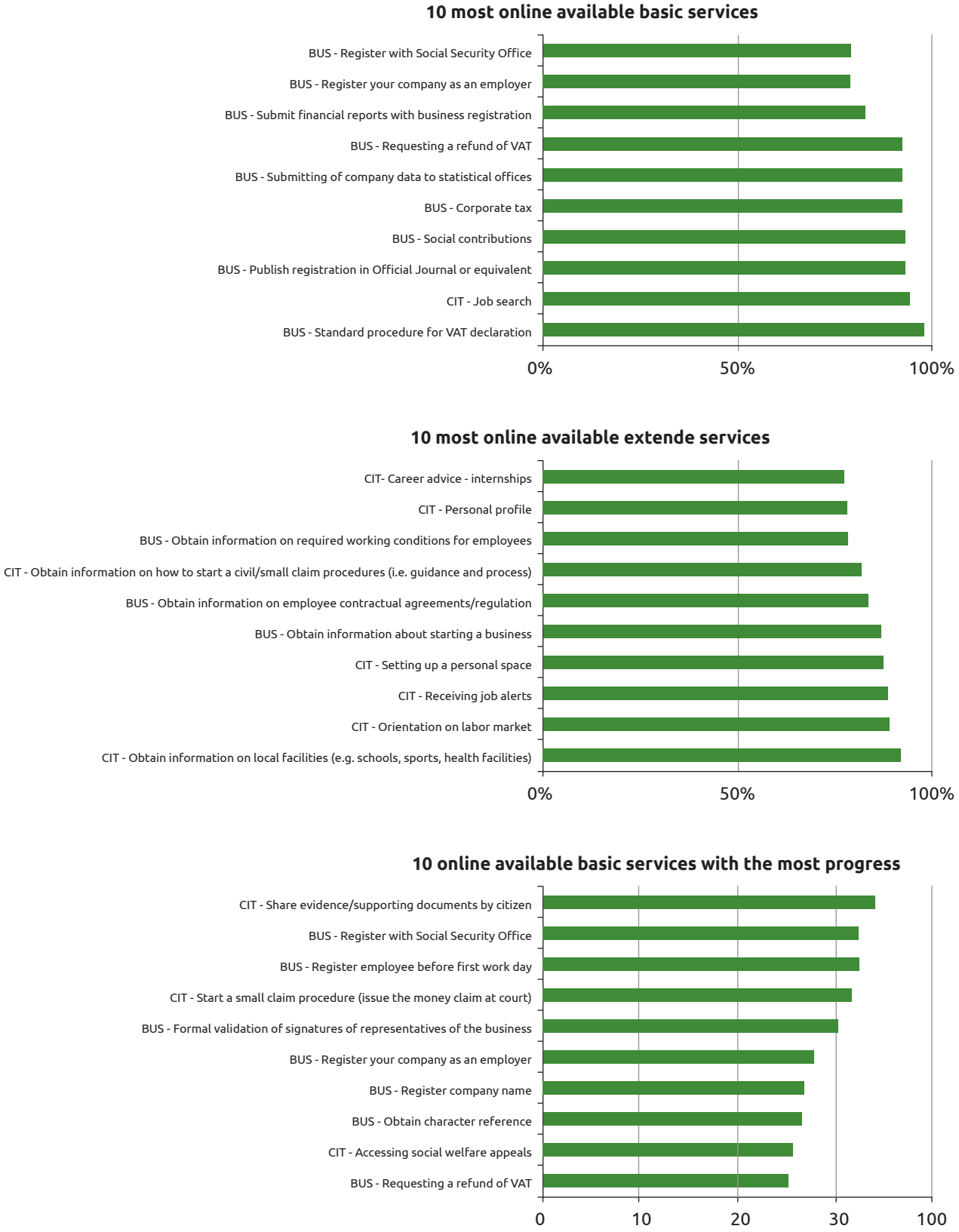
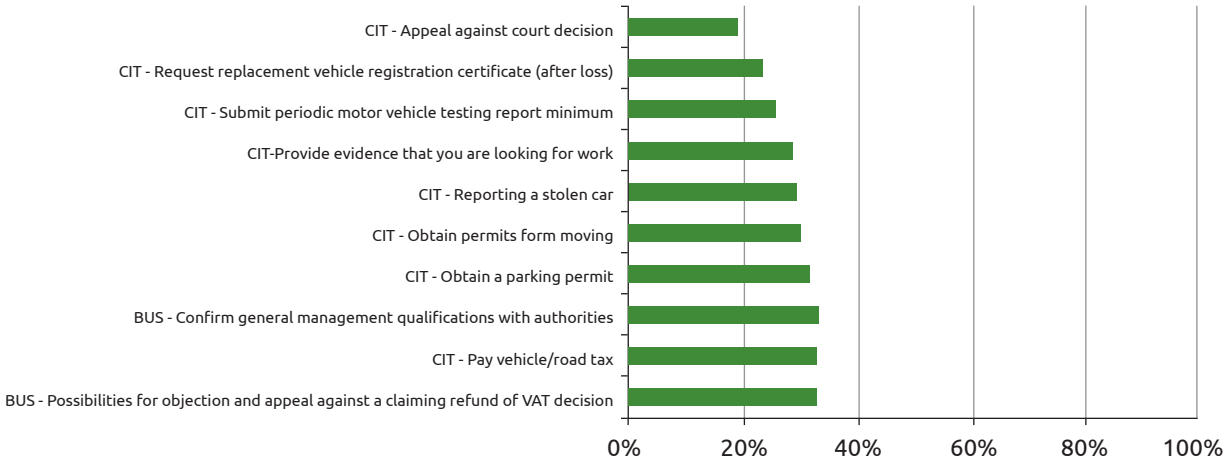
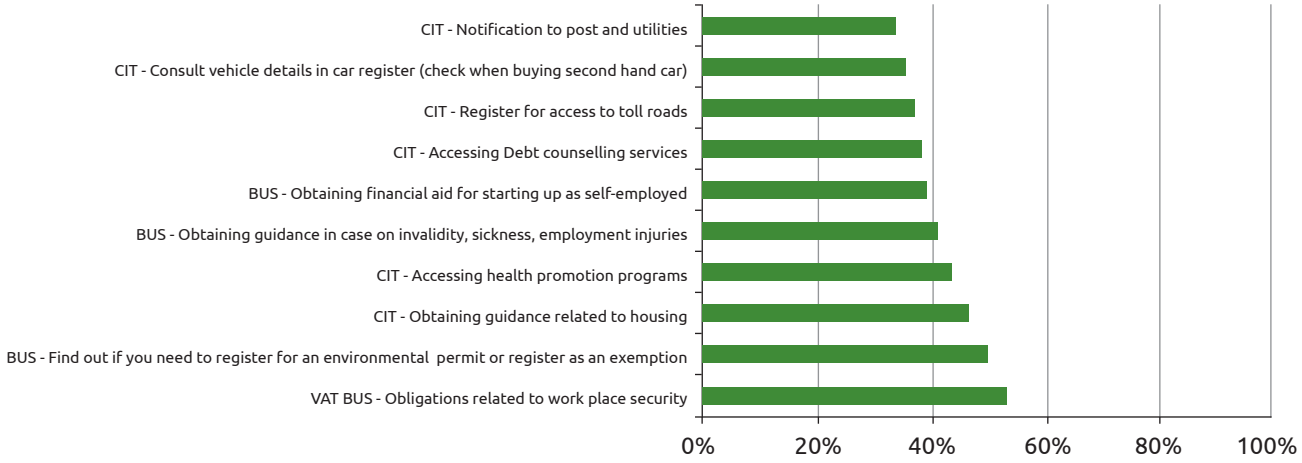


Figure 3-6: Most and least online available obligations with public authorities ('basic services'), most and least online available optional and informational services ('extended services') and those services in both categories that noted most progress.

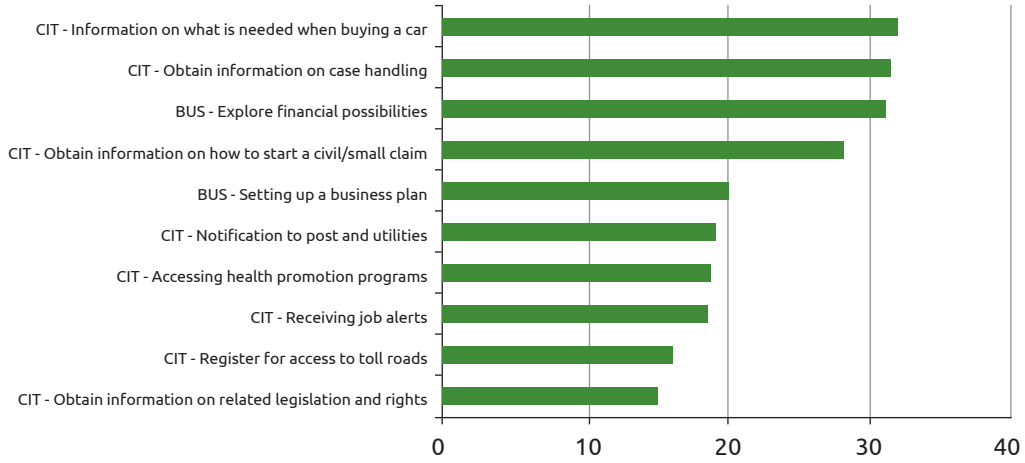
10 least online available basic services



10 least online available extende services



10 online available extended services with the most progress

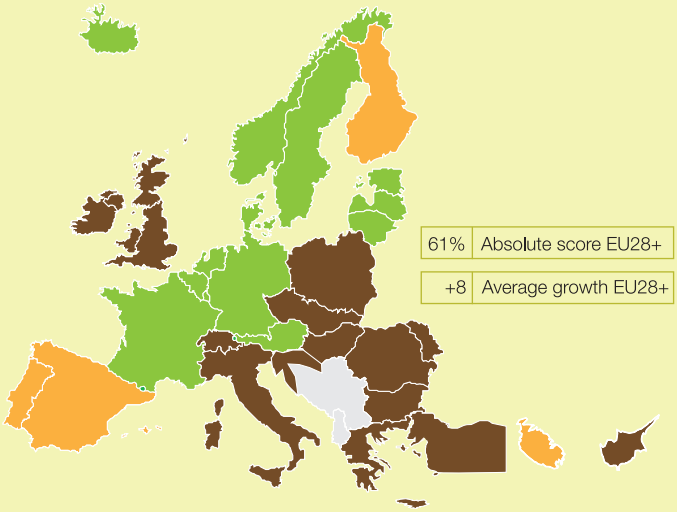


A CAUTIOUS ACCELERATION OF EGOVERNMENT IMPLEMENTATION IN EUROPE

A retrospect on 4 years of eGovernment Benchmarking (2012-2015)

EUROPE'S DIGITAL DIAGONAL DRIVES PROGRESS

Cautious acceleration of **eGovernment** implementation in **Europe.**



- Accelerators: growth & absolute score above EU28+
- Steady performers: absolute score above EU28+ & growth below EU28+
- Moderate performers: growth & absolute score below EU28+ average
- No data available

USER CENTRICITY

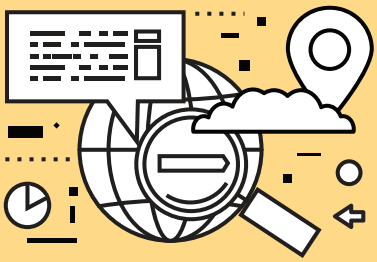
European citizens and businesses demand a **better online experience.**

The online availability of services at **EU28+** level reached **81%** (+9 points since 2013) and online usability **83%** (+4 points since 2013).

However, the ease and speed of using these services online advanced poorly, **increasing by only 1 percentage** point since the first assessment **in 2013.**

TRANSPARENCY

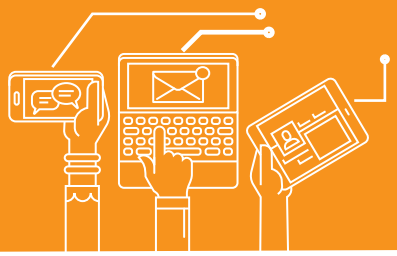
Governments need to further **improve transparency of service processes,** personal data and their organisations **across Europe.**



However the implementation of good transparent service procedures is still lacking in large parts of Europe **(Score of 47% at EU28+).**

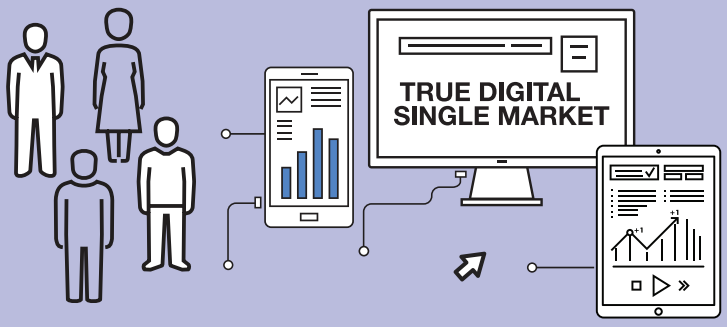
This benchmark has increased **8 points** over the years, reaching **56%** in **2014-2015.**

Transparency of personal data halts at **55%**



CROSS-BORDER MOBILITY

Cross-border services are necessary to establish **true digital single market.**

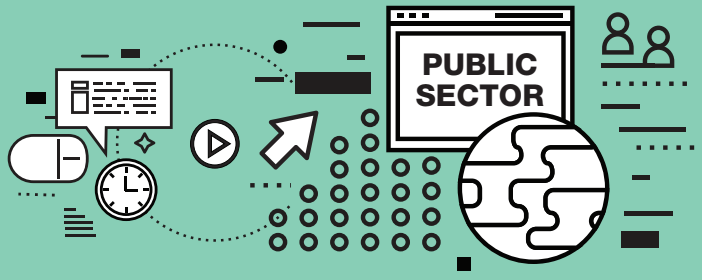


Business-related services are more advanced in terms of **cross-border mobility** than **citizen-related services**: even if the latter increased more since the first measurement (+13 points against +11 for the business), **business mobility gets a higher score (64).**

KEY ENABLERS

The key technological enablers that could drive user **empowerment** and **efficiency** are not used to their potential.

The benchmark scores **54%**, only advancing 5 points since 2013.



Only **1 in 3** public websites in mobile friendly.

Looking forward to a new policy era 2016-2020

"The secret of change is to focus all of your energy, not on fighting the old, but on building the new."

Socrates, philosopher.

4

Looking forward to a new policy era 2016-2020

With the launch of the eGovernment Action Plan 2016-2020[13], the European Commission and Member States kick-started a new era of eGovernment policy. Whereas the previous chapter looked back at key achievements in retrospect of the previous Action Plan (2011-2015), this section examines the new eGovernment action plan's priorities and imminent challenges ahead. We present insights derived from the eGovernment Benchmark itself as well as from other sources.

The new action plan is based on seven principles:

- Digital by Default
- Once only principle
- Inclusiveness and accessibility
- Openness & transparency
- Cross-border by default
- Interoperability by default
- Trustworthiness & Security

Each of the following paragraphs addresses one of these principles to display current state-of-play and key challenges that need to be tackled to successfully deliver on the new European eGovernment policy agenda.

4.1 Principle I: Digital by Default. Or by de-tour, addressing user's needs and their skills.

"Public administrations should deliver services digitally (including machine readable information) as the preferred option (while still keeping other channels open for those who are disconnected by choice or necessity).[14]"

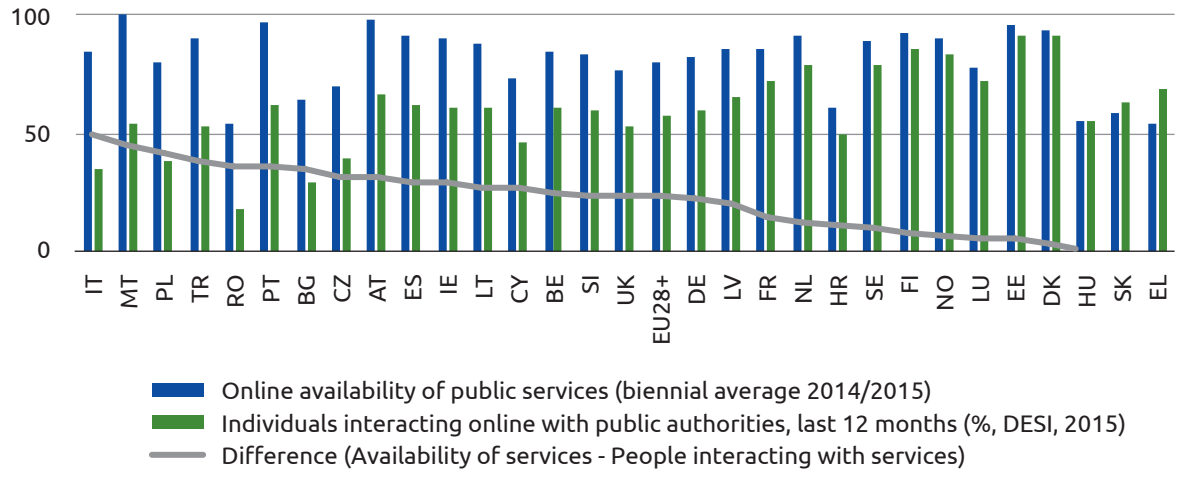


Figure 4-1: Online availability vs. use of eGovernment services[15]; sorted by the gap between these indicators (2015, EU28+, %)

13 European Commission (2016) Communication on the EU eGovernment Action Plan 2016-2020. Link.
14 Ibid., p. 4
15 European Commission (2016) Digital Economy & Society 2016 (DESI) link. Please note: CH, IS, ME and RS are not included. For EL, SK, HU the gap is the other way around; they have a higher score for eGovernment use and are therefore depicted to the right side of the graph. Definition: Individuals have used Internet, in the last 12 months, for interaction with public authorities. It includes obtaining information from public authorities web sites, OR downloading official forms OR sending filled in forms.

Digital first. For users of eGovernment, and also for 'producers' of eGovernment (working digitally). This is not just a case of availability but also of usability: truly user centric services accommodate citizens and businesses in their online journey and reduce support-efforts by public administrations through physical and telephone channels. Digital services reduce costs for governments and burdens for users.

As regards digital service delivery the following facts are important to understand the current application of this principle:

- Public services are increasingly online available for citizens and businesses (at 81 % in 2015; +9 compared to 2013), however the ease and speed of using these services is moderate;
- A large number of online available services in a country does not per se result in more users of these services: compare for instance Denmark (DK) and Estonia (EE) with Portugal (PT) and Malta (MT) in figure 4-1;
- On average 57% of Europeans interact online with public administrations while 21% of Europeans misses the required digital skills[16] to interact online; apparently 22% of Europeans refuses to use the online channel (for a variety of reasons: unwilling, unaware, wrong perception etc);
- Business services are more 'digital mature' compared to citizen services - in general, but this is also reflected in the number of services that are mandatory online and only delivered via this channel: 17% of business services versus 5% of citizen services is mandatory online;
- Mandatory online services are common practice amongst countries for delivering businesses eServices (half of European countries has made one or more service mandatory online"), increasingly for services addressing students (11 of 34 countries), but hardly for other citizen services (4 of 34 countries). Exception: Denmark (43% of citizen services is mandatory online), and too lesser extent the Netherlands (38%)(see figure 4-2).

Realising fully digital services across Europe can only be made a success if:

- Governments make sure that services are designed from the needs of their users to ensure a smooth online

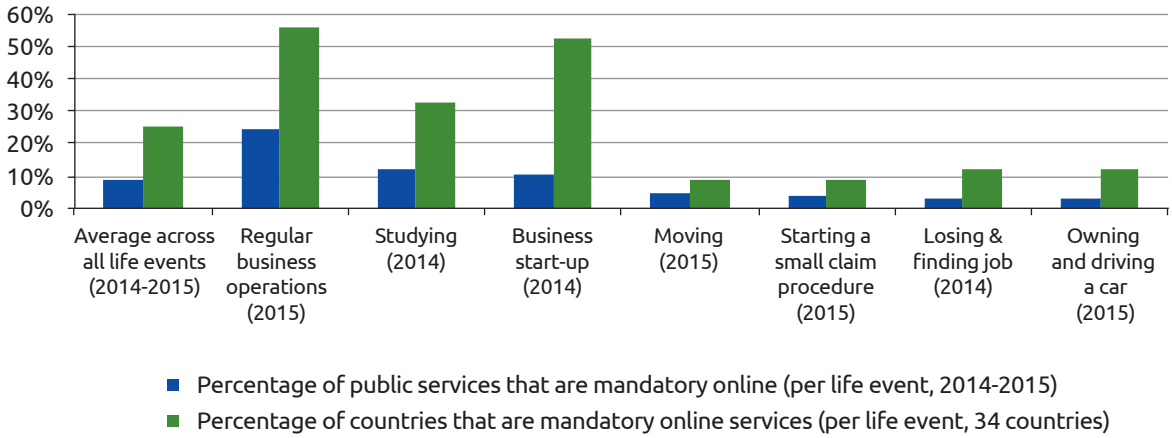


Figure 4-2: Mandatory online services and countries offering those services (EU28+, 2014-2015)

16 European Commission (2016) Digital Economy & Society 2016 (DESI) Digital skills indicator 2015. link. Please note: CH, IS, ME and RS are not included

experience. This contributes to increasing the take-up of online public services;

- Governments invest in developing the digital skills of Europeans, and to close the digital divide. Whereas businesses have the desire and the possibility to invest in human capital with digital skills, individual citizens have a harder time to develop the skills necessary for using online government services. The recently released Skills Agenda for Europe[17] is of vital importance.
- Governments realise they need to follow different strategies towards full implementation of this principle (as we have argued already in the 2012 benchmark report 'digital by default, or by de-tour'[18]);

4.2 Principle II: Once-only: from principle to obligation?

"Public administrations should ensure that citizens and businesses supply the same information only once to a public administration. Public administration offices take action if permitted to internally re-use this data, in due respect of data protection rules, so that no additional burden falls on citizens and businesses"[19].

The indicator on *Authentic Sources* is a crucial Key Enabler related to the 'Once-only' principle and part of the current eGovernment Benchmark. eID is and enabler that supports that process. The results show that:

- **Overall, use of authentic sources for pre-filling online services has increased slightly with 2 percentage points and is now used in approximately half of the public services (49%).**
  This indicator assesses the availability of base registries used by governments to automatically validate or fetch data relating to citizens or businesses. Authentic Sources facilitate pre-filling of online forms and hence the implementation of the 'once-only principle'.
- **Similar to 2 years ago, it is possible to use an eID in 3 out of every 5 public services.**
  Pre-filling of online application forms can be enabled through online authentication of users, for instance through eID. This allows the service provider to recognise the user and re-use available data on that user in the service process. It could reduce required information in the application and/or pre-fill required fields for the user to check on correctness.
- **A missed opportunity for increasing efficient service delivery: both indicators show no or little (2 points) progress and both fluctuate across the various life events** that were part of the evaluation. One explanation could be that while governments are succeeding in bringing more services online (as we have seen in paragraph 3.1), this does not per se imply that they allow users to authenticate online nor pre-fill data available on those users. In some cases deviations were caused by corrections made in the results of the last measurement. But in general the results show more smart governments are needed.

17 http://europa.eu/rapid/press-release_IP-16-2039_en.htm
18 Available online here: https://ec.europa.eu/digital-single-market/sites/digital-agenda/files/eGov%20Benchmark%202012%20insight%20report%20published%20version%200.1%20_0.pdf
19 European Commission (2016) Communication on the EU eGovernment Action Plan 2016-2020. Link, p. 4

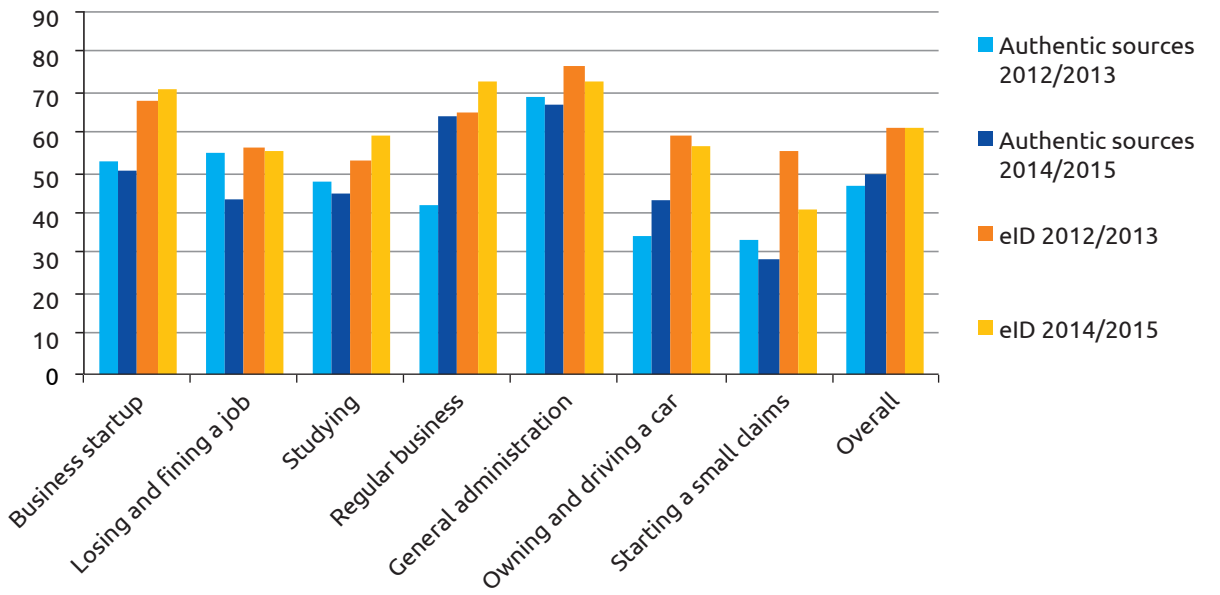


Figure 4-3: Development of the key enablers 'Authentic Sources' and 'eID' (2012/2013 vs 2014/2015, EU28+)

Another indicator for the state-of-play of this principle is 'automated service provision'. This does not involve any interaction whatsoever of the user with the administration to obtain the specific service. It may be the consequence of a previous interaction with the administration related to another service. The results reveal that the number of automated services has remained stable since the first measurement at 3% of all services. However, as Bill Gates said: *'Automation applied to an efficient operation will magnify the efficiency; automation applied to an inefficient operation will magnify the inefficiency'*. Governments need to think through where automation can be applied, and if the process itself should not be made more lean first.

- The event of starting a business shows some good examples of services that can be automated as result of the core activity in this life event: the company registration itself. Consequently, the official publication can be automatically taken care of, the Tax authority can be involved for providing a tax and/or VAT number, and the social security office can include the new company in their registration too.
- Citizen services that are mostly automated concern (de-)registration services such as signing out at old municipality (when moving places) or financial oriented services that logically follow an earlier event. An example is that in case someone loses a job, the public employment service takes care of ensuring pension payments or medical insurance as basic needs for being in such a situation.

The once-only principle will be the key to delivering public services in an efficient way, realising both cost reductions for government as well as burden reduction for users of online services. It is clear that public authorities will have to find ways to increase the application of this principle.

Mostly automated citizen services	Life event	Public entities that automated this service
Sign out at old municipality	Moving	25
Notify additional organizations about new address	Moving	12
Ensuring continuity of pension payments	Losing and finding a job	9
Ensuring continuity of medical insurance	Losing and finding a job	6
Pay vehicle/road tax	Owning and driving a car	4
Mostly automated business services		
Publish registration in Official Journal or equivalent	Starting-up a business	18
Obtain tax identification card/number	Starting-up a business	9
Obtain VAT collector number	Starting-up a business	8
Register with Social Security Office	Starting-up a business	6
Register with mandatory pension insurance	Starting-up a business	6

Figure 4-4: Overview of citizen and business services that are mostly automated

An obstacle for this could be the widespread use of *Legacy systems*, which "in the context of computing, refers to outdated computer systems, programming languages or application software that are used instead of available upgraded versions"[20]. According to a recent study[21], "only 2 percent of the respondents said the infrastructure for their digital services contained a small amount of legacy systems. Most of them had their digital services built on legacy systems, or had built their digital services as separate projects (silos) next to their legacy infrastructure"[22]. The conclusion can be made that the use of legacy software has huge complications for the modernisation of eGovernment services. Changing systems can be a costly and complicated procedure, nevertheless, steps have to be made to future-proof government services. In a way public organisations are forced into this direction, due to reduced budgets: legacy systems are often costly to maintain, due to patching and modifications. By replacing expensive legacy systems with newly designed (perhaps open source) systems money can be saved and services can be future-proofed.

It is therefore very interesting that the new eGovernment Action Plan states that 'the Commission will assess the implication of a possible implementation of the 'no legacy principle' (renew IT systems and technologies after a certain amount of time, to keep in line with the ever-changing environment and development of technology) in public administrations'. Question is if a principle is a strong enough means to achieve change.

20 https://www.techopedia.com/definition/635/legacy-system
21 A recent survey conducted by WiredGov, available online here: http://www.wired-gov.net/wg/directory.nsf/campaign/Integration+Platforms+for+the+Government+Sector+2016+WiredGov+Survey+Report
22 https://joinup.ec.europa.eu/community/opengov/news/legacy-systems-complicating-digital-default
23 European Commission (2016) Communication on the EU eGovernment Action Plan 2016-2020. Link

4.3 Principle III: Inclusiveness and accessibility: it's all about establishing a connection

"Public administrations should design digital public services that are inclusive by default and cater for different needs such as those of the elderly and people with disabilities"[23].

An important consideration for an advancing digital society is to ensure no citizen gets left behind. This means that there is a task in offering people opportunities to learn digital skills in order to take part in the digital society. It also concerns providing access to users that have various needs. The latter concerns for instance elderly and disabled, but providing smooth access to public information and services by any device is also an element of accessibility. This point will be addressed in the second part of this paragraph. Concerning accessibility[24] , the eGovernment Benchmark has evaluated how mobile-friendly public websites are.

Concerning the status of access to internet the following aspects are important:

- **Almost all European citizens have the possibility to access Internet.** Fixed broadband coverage has reached 97 per cent on average in the EU. Individual country scores range between 100 and 86 per cent[25]. However, zooming in on rural areas, it seems that the inhabitants of these areas are still lacking broadband Internet in some countries[26]: the EU28+ average is 91 per cent, but there are multiple countries scoring below the 80 per cent mark: Latvia (55%), Bulgaria (60%), Finland (71%) and Norway (77%). Fortunately, the coverage of Advanced 3G mobile broadband is well-developed throughout the EU28+, especially for those countries scoring low on broadband for rural areas[27].
- **The use of mobile devices to access internet is taking a huge flight** over the past five years as is shown in figure 4-5. This ranges from a 25 percentage

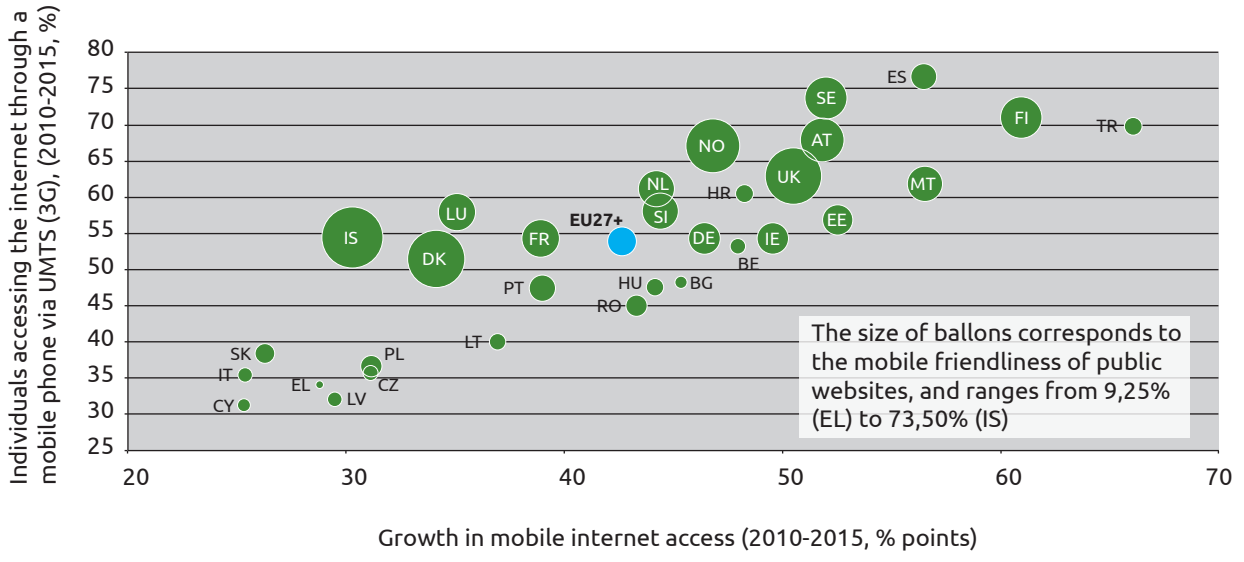


Figure 4-5: Mobile access to Internet (2010-2015, EU27+, %), Mobile Friendliness (2015, EU27+, %)

24 A coming directive on accessibility of public sector websites and applications is to be adopted formally this fall (2016).
25 European Commission (2016) Digital Economy & Society 2016 (DESI) link. Please note: ME and TR are not included
26 Ibid.
27 Ibid.

points rise in Cyprus to an increase of 66 percentage points in Turkey. In Spain 3 out of 4 citizens access internet on their mobile device.

- **This practice (it is more than a trend) also impacts public service providers:** people expect to be able to navigate public websites for information and services on their mobile device. Research has shown that mobile-friendly websites lead to a more positive user experience. In fact, if a commercial transaction cannot be done on a cell phone, it is estimated that 30 per cent of mobile users will give up the attempt to purchase[28].
- **However, only 1 in 3 public websites is 'mobile-friendly'.** Mobile responsiveness makes the information readable on any device. There are good practices in the United Kingdom, the Nordic countries and Austria, but the results of this measurement reveal that governments should be more responsive to this practice. Countries such as Spain and Turkey show they have a high mobile users' base but very small mobile friendliness of public services.

As users are showing increasingly more mobile behaviour, governments should adapt to that phenomenon. This can help to connect to user groups who would otherwise have no access to online services (e.g. in rural areas), and to the rapidly increasing part of the population that is using mobile browsers to access the Internet. Besides regular access to information and perhaps even services, opportunities also arise as regards development of specific apps that could offer value to citizens

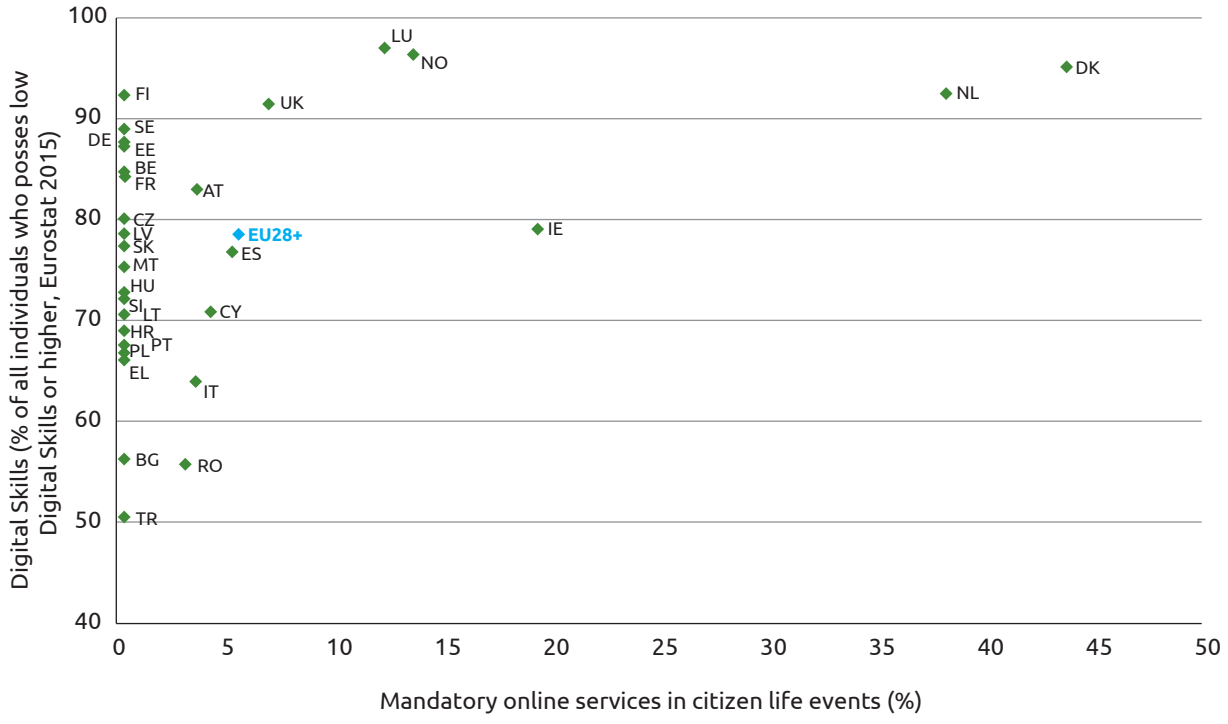


Figure 4-6: Individuals with at least basic digital skills and percentage of citizen services that are mandatory online (EU28+, %)

28 http://www.ieseinsight.com/doc.aspx?id=1784

and companies on various matters. However, a prerequisite for the above and for further take-up of digital services is the level of digital skills of the European population. In this digital age there is still a lot to win in this regard:

- 1 in 5 Europeans (21%) do not have the basic digital skills that are needed to access internet in the first place. This ranges from 1 in 2 Turkish citizens (50%) lacking skills to almost every citizen in Luxembourg (97%).
- The figure 4-6 also reveals that those countries who seem to advance with applying the online channel as the only channel for citizen services, can only do so in the knowledge that almost all their citizens are capable of using that channel.

The figure does not mean to say that mandatory online services are the only way forward, it means to convey the message that for a government to efficiently deliver public services, the options in doing so increase with an highly skilled population. Inclusiveness is the principle and governments have a responsibility in skilling their people; the business case for digital-by-default will become more attractive however, if more people go online and other channels can be minimised. It's all about establishing a connection.

4.4 Principle IV: Openness & transparency: it really is a new way of working

"Public administrations should share information and data between themselves and enable citizens and businesses to access control and correct their own data; enable users to monitor administrative processes that involve them; engage with and open up to stakeholders (such as businesses, researchers and non-profit organisations) in the design and delivery of services"[29].

Transparency is an important indicator in the eGovernment Benchmark. We have already revealed that after assessing seven important life events:

- 2 in 3 public organisations (64%) are transparent as regards their operations, information about themselves and their processes.
- 1 in 2 countries (55%) are transparent as regards personal data of users of public services, meaning they provide access and allow users to proactively manage their personal data.
- 1 in 2 services (47%) have transparent service delivery procedures and provide information about the process (including information on time, process and delivery of the service).
- Results also showed a huge variance of performance on these indicators within countries.

The Open Data initiative[30] builds on the Directive on the re-use of public sector information, which has been measured by the Public Sector Information (PSI) scoreboard: a 'crowd-sourced' tool to measure the status of Open Data and PSI re-use throughout the EU. It does not monitor government policies, but aims to assess the overall PSI re-use situation, which includes the open data community's activities[31].

Plotting countries on both indicators reveals four groups of countries:

- **Countries that lead by example and practice a new attitude towards public services. They are ahead of the European average on both indicators. This group consists of Austria (AT), Germany (DE), Denmark (DK), Estonia (EE), Spain (ES), Ireland (IE), Finland (FI), France (FR) and the Netherlands (NL).**
- Countries that score high on transparency of organisations, personal data and service delivery - but need to step

29 European Commission (2016) Communication on the EU eGovernment Action Plan 2016-2020. Link, p. 4
30 http://www.europeandataportal.eu/
31 https://www.europeandataportal.eu/sites/default/files/overview_page_-_epsi_platform_scoreboard.pdf

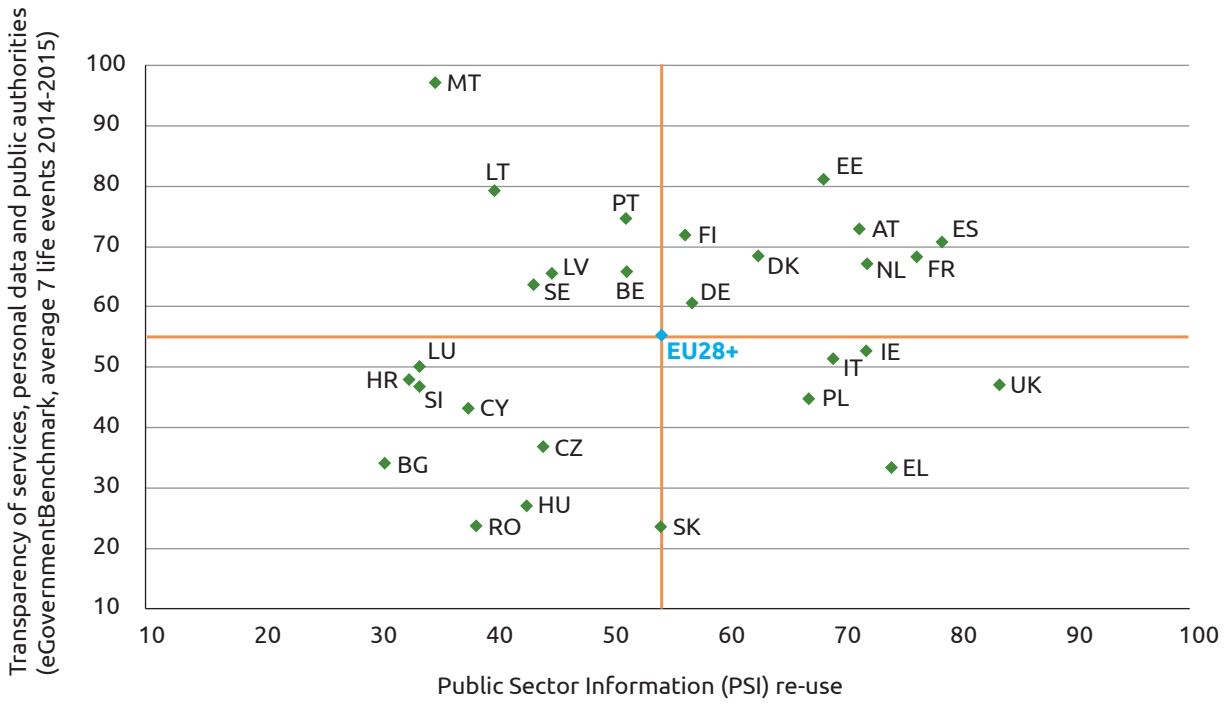


Figure 4-7: Public Sector Information re-use vs. Transparent Government Benchmark (2015, EU28+, %)

up as regards Public Sector Information re-use: Belgium, Lithuania, Latvia, Malta, Portugal, Sweden.

- Countries that advanced on opening and sharing PSI, but can improve on other transparency elements: Greece, Italy, Poland, Slovakia and the United Kingdom.
- Countries that are behind on both dimensions and need to consider a structurally different approach and attitude towards the process of designing and delivering services: Bulgaria, Cyprus, Czech Republic, Croatia, Hungary, Luxembourg, Romania and Slovenia.

Although transparency seems to be on the agenda of most governments, results are diffuse and do not reveal a consistent implementation of this principle. Transparency is not something that can be achieved through policies alone. It requires a new mind set of people working in government, and needs to be understood and practiced by all public authorities - not just the open data community. **Knowing what transparency means is one thing, but applying that knowledge in practice is the competence that should become standard for every public servant. It really is a new way of working.**

4.5 Principle V: Cross-border by default: unlocking the potential of the Digital Single Market

"Public administrations should make relevant digital public services available across borders and prevent further fragmentation to arise, thereby facilitating mobility within the Single Market"[32].

32 European Commission (2016) Communication on the EU eGovernment Action Plan 2016-2020. Link, p.4

It is no coincidence that the European Commission stresses the importance of the (Digital) Single Market in Europe: with over half a billion consumers that can trade freely without borders, the market potential is enormous. The question is: to what extent are governments facilitating this potential?

The Business Mobility benchmark indicates that cross-border services are lagging behind services offered to country nationals:

- 25% of services required of foreign entrepreneurs to start their business in another country is completely offline: meaning there is no information - let alone a service - available online. In contrast, entrepreneurs starting a business in their own country face such issues in only 2% of the cases.
- Foreign start-ups are also less able to find/access information on services (33% vs 39%) and using services across border is only possible in 27% of cases (compared to 46% of services in the national context).

Another element of creating smooth cross-border services for entrepreneurs is ensuring easy access to digital public services in other EU countries through so-called *Points of Single Contact*[33](PSC). The outcomes of an assessment of these PSCs (related to cross-border accessibility)[34] are captured in figure 4-8 together with the benchmark for Business Mobility. This helps to understand to what extent governments are working on facilitating the cross-border aspect of businesses.

The figure reveals that Luxembourg, Cyprus, Sweden and Denmark are mostly practicing the 'cross-border by default' principle and lead the way with the highest average score considering both indicators. The countries on the top right quadrant can be seen as efficiently facilitating cross-border services, since they score high on both accessibility and mobility. Interesting to see is that most of these high scoring countries have a population that speaks English on a native or above average level. The right bottom quadrant and left top quadrant show the countries with high potential. To be able to move into the top right quadrant they have to improve the available means for foreigners to complete the process through online channels. In general, relatively more standard registrations can be done online, while more specific registrations or applications require offline action. The use of cross-border key enablers can further improve the online accessibility for foreigners. The left bottom quadrant shows the internally focussed countries, which score low on both business mobility and cross-border accessibility.

What can be done to remove barriers for cross-border services?

The eGovernment benchmark also evaluates the most common barriers that prevent foreign entrepreneurs to access information and services. An historic analysis reveals (in figure 4-9) some interesting shifts:

- **Language is less a barrier compared to the situation in 2012.** This could point in the direction of an increased use of translation tools and/or the availability of a website in multiple languages. It could also imply that the PSC have increased opportunities in this regard.
- **As entrepreneurs can increasingly take the first hurdle of language, other barriers block his/her way.** It now becomes more relevant to provide sufficient information about a service procedure in order to help a foreign start-up to understand what he needs to comply with and how.

33 Publication online available here: http://ec.europa.eu/growth/tools-databases/newsroom/cf/itemdetail.cfm?item_id=8345

34 This is based on three sub-indicators: 1] e-Completion by foreign user, 2] Distinction establishment and service provision and 3] Multilingualism.

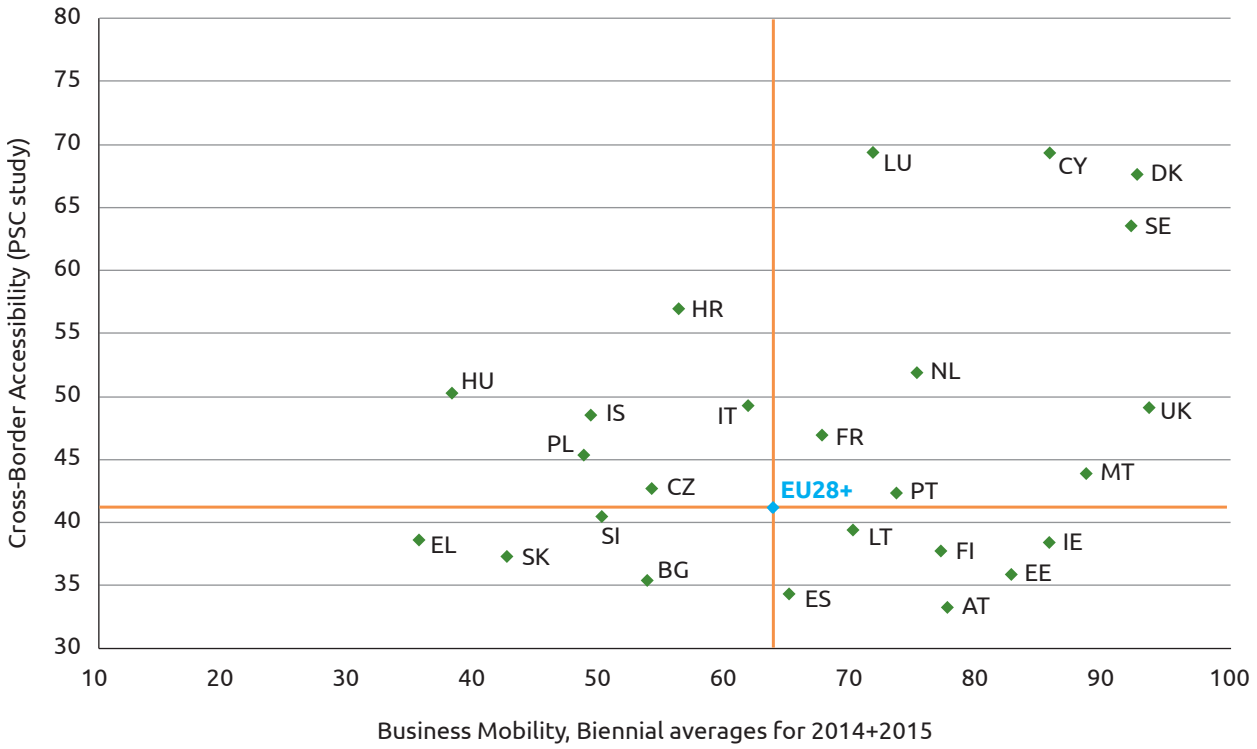


Figure 4-8: Business Mobility benchmark (2014/2015) vs. Overall Performance on PSC charter criteria (2015, EU28+, %)

The measurement also reveals that a 'need to translate a required document' (+13 percentage points) and 'need for a physical encounter' (+13 percentage points) are occurring more often.

- **On the positive side: efforts to ensure interoperability of eIDs across border seem to pay off.** This barrier dropped with 6 percentage points and is now the least occurring barrier for cross-border start-up services.

Governments seem to be paving the way for cross-border businesses and hence unlocking the potential of the European Digital Single Market. The shift in types of barriers that entrepreneurs encounter seems to underline this trend. Removing the language barrier is a first step towards a fully digital interaction between public authorities and foreign start-ups. Consequently, public authorities need to gain a good understanding of the entrepreneur and his needs. Only when speaking his language, cross-border services for businesses can become truly user-centric and free of any digital borders.

4.6 Principle VI: Interoperability by default: eID to provide the impetus needed

"Public services should be designed to work seamlessly across the Single Market and across organisational silos, relying on the free movement of data and digital services in the European Union."

Seamless connections across technical and organisational barriers are an important priority era for the new eGovernment action plan. This is not without reason, as true progress in technology and user experience depends on the ability to work across silos. Interoperability in European

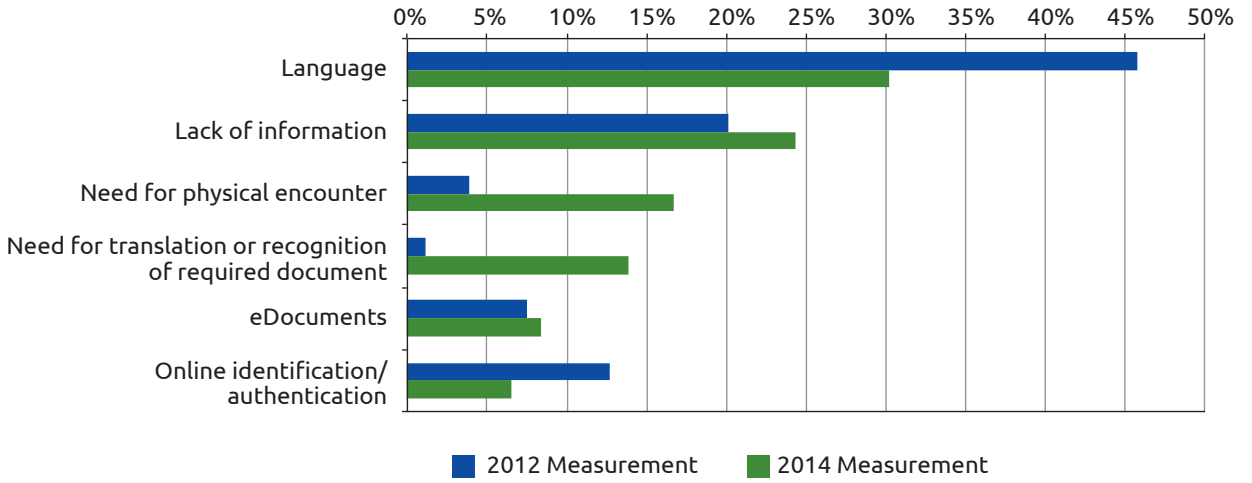


Figure 4-9: Barriers to cross-border services for starting-up a business (2012 vs 2014, EU28+)

eGovernment has been promoted for years, for example through the European Interoperability Framework.[35] Many governments are now setting a next step by adoption the Open standards principle. The efforts should lead to organisational interoperability (across borders, departments and tiers) and technical interoperability (across platforms).

To understand to what extent this principle is applied in practice, the eGovernment benchmark results indicate that:

- The online availability of cross-border services has increased significantly in the past years, although still behind national services. On a positive note, the eID barrier for businesses dropped (as presented in the previous paragraph) and could indicate a tendency of improving interoperable services across borders.
- At a national level, the user journeys in life events which tend to run across multiple departments of government (such as *Regular business operations* or *Moving*) achieve similar or better results compared to life events which tend be largely concentrated within a single department (such as *Starting a small claims procedure*). However, the number of automated services has not risen over the years.
- The research also provides insight into the use of authentication means when using for online services. Ideally, there is one unique identifier for users that can be applied across the full service spectrum, opposite to a situation in which users own various authentication means. The result show mixed results. In the business life events the possibility to use a national eID has gained ground. In 3 of the 5 citizen life events this is the other way round, resulting is a very light increase on average for all life events.

These findings hint that interoperability in Europe could be slowly improving, but strong indicators are missing to give an accurate view on this. At least eIDAS will provide a strong impetus for interoperability.

35 European Commission (2009) European Interoperability Framework for Pan-European eGovernment Services. Link.

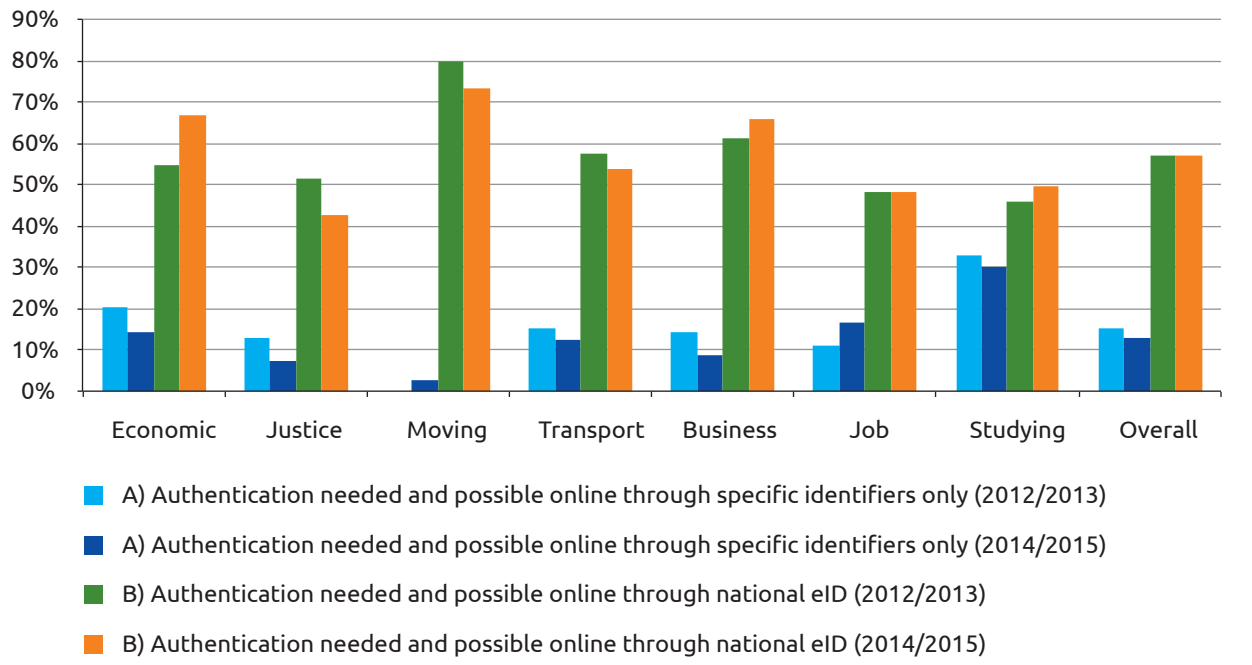


Figure 4-10: Use of authentication mechanisms in 7 life events (2012/2013 vs 2014/2015, EU28+, %)

4.7 Principle VII: Trustworthiness & Security: a personal data paradox?

"All initiatives should go beyond the mere compliance with the legal framework on personal data protection and privacy, and IT security, by integrating those elements in the design phase. These are important pre-conditions for increasing trust in and take-up of digital services"[36].

The seventh principle on which the new Action Plan is built, relates to Trustworthiness & Security. Paragraph 4.4 revealed that European governments are trying to improve trust through increased transparency. In particular relevant here, the score for Transparency of Personal Data rose 8 points.

The *Eurobarometer*[37] surveyed almost 28,000 European citizens in a study on data protection. One element of that survey concerned the feeling of control citizens experienced as regards their personal data when interacting online.

The figure 4-11 shows how countries score on both indicators. In most EU Member States the majority of the people feel some control over the information they provide online, but a sense of complete control is mostly lacking (only 15% of the European respondents on average). German citizens feel least control (despite the transparency of personal data in Germany is near EU-average) while their Greek and Cypriot counterparts feel most.

Citizens may gain a sense of control if they can manage their personal data on online public services. Interestingly, there is no positive correlation between the two indicators. For example, Greek and Cypriot citizens *feel* in control of their personal

36 European Commission (2016) Communication on the EU eGovernment Action Plan 2016-2020. Link, p.4
37 TNS (2015) Special Eurobarometer 431 Data protection. Link. Please note: only studies EU Member States

data, while in reality their governments provide only limited transparency. The reverse is true for French, Spanish and Austrian citizens, who feel very little control although they have sufficient means in their countries to manage their personal data.

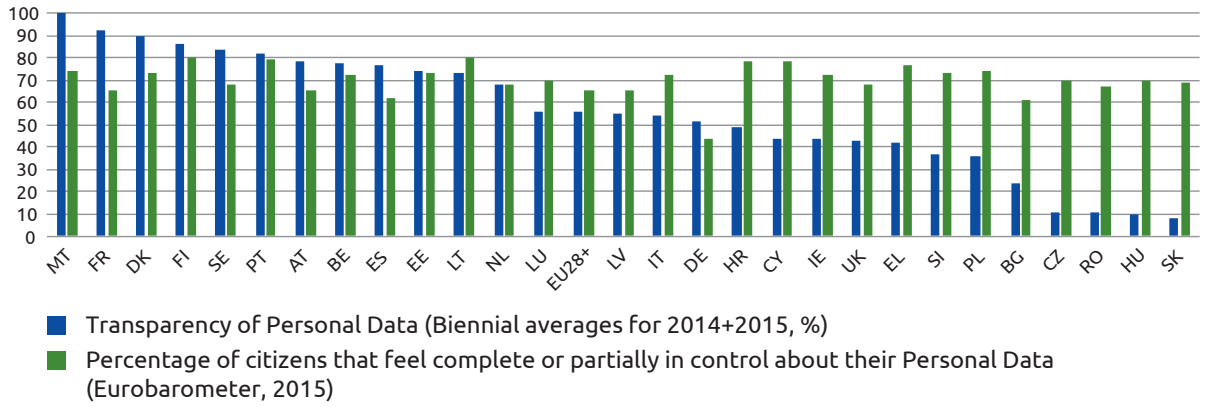


Figure 4-11: Transparency of Personal Data vs. Feeling of control over Personal Data (2015, EU28, %) [38]

38 Ibid., p. 10

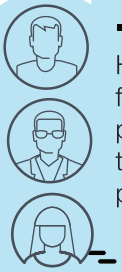
THE 7 DIGITAL CHALLENGES FOR GOVERNMENT

01 Digital by default

Half of European countries has made one or business service mandatory **online.**

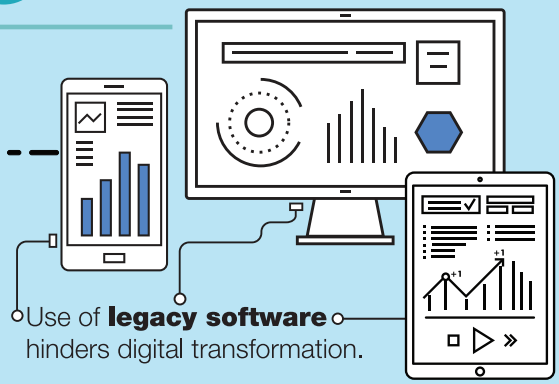
Other citizen services rarely mandatory online: only in 4 of 34 countries.

02 Once-only principle



Half of public services (49%) forms are pre-filled with personal data; this means only a 2 percentage points increase since 2012.

3% of all services is automated.

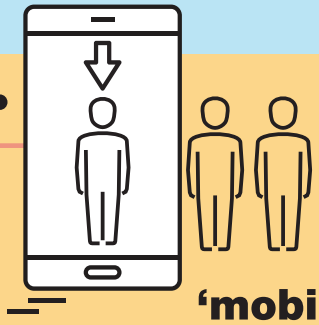


Use of **legacy software** hinders digital transformation.

03 Inclusiveness and accessibility

1 in 5 Europeans (21%) do not have the **basic digital skills** that are needed to access internet in the first place.

54% **of Europeans uses a mobile device to access internet in 2015 – up from 11% in 2010.**

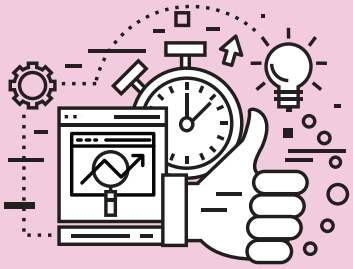


Still only **1 in 3** public websites is **'mobile-friendly'.**

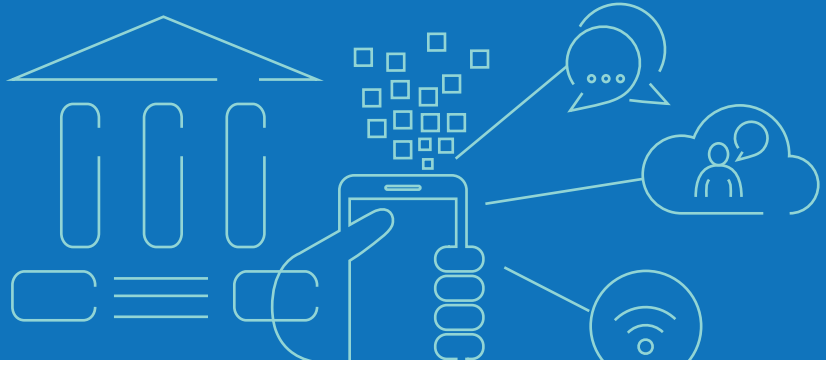
04 Openness & transparency

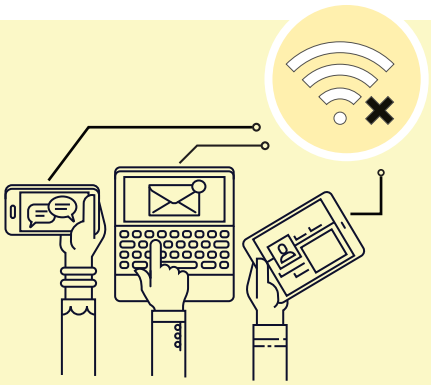
2 in 3 public organisations (64%) are transparent about themselves.

1 in 2 countries (55%) are transparent as regards personal data of users.



1 in 2 services (47%) have transparent service delivery procedures.





Cross-border services are lagging behind services offered to country.

25% of services is **completely offline.**

05 Cross-border by default

Business Mobility went up from

53% in 2013

To

64% in 2015

11%

Most common barriers are language, lack of information on the foreign website, and the need for a physical encounter to perform the service successfully.

06 Interoperability by default'

Hardly any service is accessible by a citizen using a foreign eID.

eID seems to be less of a barrier for businesses.

Number of automated services has not risen over the years.

07 Trustworthiness & security

In most EU Member States the majority of the people feel some control over the information they provide online, but a sense of complete control is mostly lacking (only 15% of European respondents on average).

1 in 2 countries (55%) are transparent as regards personal data of users of public services, meaning they provide access and allow users to proactively manage their personal data.

personal data paradox
In some countries citizens feel in control of their personal data, while in reality their governments provide only limited transparency.

Being practical: analytics to support countries in moving ahead

"It's what we think we know that keeps us from learning"

Claude Bernard, French scientist.

5

The explorative benchlearning perspective: peers in their context

5.1 A clustering analysis to deepen the value of the eGovernment bechmarking exercise

In order to understand which factors hinder the innovation actions of a country, and how key characteristics of a country influence eGovernment performance, last year's eGovernment benchmarking report introduced a new element: the "benchlearning approach". This approach can be seen as the opportunity for a country to learn from other countries, which display similar features and better performances. To this end, the analysis is built around a model, which aims to:

- measure performances through new indicators, coherent with the European eGovernment Action Plan's goals;
- explore the meaning of each performance level across different countries, by investigating how similar/ different contexts influence eGovernment implementation.

eGovernment's policies and strategies in each country are influenced by factors which are context specific:

- general context: socio-demographics, technological maturity, level of corruption, level of services centralisation;
- demand for eGovernment services: awareness of the existence of eGovernment services, likelihood to use the web, citizens' digital competences;
- supply of eGovernment services: spread, quality and investments in eGovernment services.

Currently, data gathering through Mystery Shopping has been implemented for four years. This created a database, solid and complete enough to allow for a multi-year analysis. This helps to understand the extent to which performances have evolved throughout the years in different countries.

Hence, the new analysis framework provides an overview of how the results of this cluster analysis could be used by countries to improve their eGovernment strategy and to identify the most suitable path towards eGovernment maturity.

5.2 Method for clustering countries on eGovernment context and performance

The benchlearning exercise aims at supporting the definition of eGovernment policies and strategies that a country should implement, by understanding:

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

In order to understand these factors, a country clustering exercise is applied based on a two-step analysis.

The **first step** of the analysis aims at measuring a country's maturity, through the identification of the use of eGovernment services and the public administrations' ability to produce efficient and effective procedures and service delivery. The first step is hence to assess and compare eGovernment with the use of performance indicators.
The absolute indicators used to measure eGovernement maturity performances are **Penetration** and **Digitisation**:

- *Penetration* represents the usage of online eGovernment services;
- *Digitisation* measures a public administration's efficiency and effectiveness in internal procedures.

The framework presented last year took into consideration two other indicators: Satisfaction and Harmonisation:

- The Satisfaction indicator measures the extent to which citizens are satisfied with the available eGovernment services and shows values which are almost similar in every country; furthermore, the survey has not been updated since 2012. For this reason this indicator is not included in the analysis.
- The Harmonisation indicator represents the extent to which a country is capable to implement and orchestrate innovation with a coordinated approach. The indicator is strongly correlated with digitisation and is therefore not included in the report.

It is important to evaluate each country's performance regarding the **Penetration** and **Digitisation** indicators, to understand which specific actions countries can take in order to improve their own eGovernment maturity. Figure 5-1 shows the composition of these indicators[39].

Penetration is measured with a Eurostat indicator, hence Switzerland, Serbia, and Montenegro cannot be included yet as no data for these countries is available in the Eurostat dataset.

The **second step** of the analysis evaluates how exogenous factors shape the specific context of individual countries. This step allows us to get a better understanding of which factors influence each country's performance.

There are three categories of these contextual, or relative, indicators:

- 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.

Similar to the mystery shopping approach, Penetration and Digitisation indicators have been calculated as a biennial average on seven life events. This creates three time series: 2012-2013, 2013-2014 and 2014-2015.
Using the absolute and relative indicators, a cluster analysis is conducted in order to

Indicator	Composed variables	Data source
Penetration	**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.	Eurostat
Digitisation	**Authentic Sources:** personal data pre-filled, documentation required. **Automated Service:** percentage of automated services per country (across all life events Mystery Shopping).	eGovernment Benchmark - Mystery Shopping

Figure 5-1: Indicators valorisation

39 The methodology used to calculate Penetration and Digitisation has changed from eGovernment Benchmarking Report 2014: Penetration and Digitisation indicators have been calculated as a biennial average on seven life events, in order to have three time series: 2012-2013, 2013-2014 e 2014-2015; see Background Report for details.

identify clusters of countries with similar eGovernment maturity performances, and clusters of countries with a similar context. Comparing these clusters aids us in understanding of the impact of specific contexts on performances.

5.3 Group of countries based on context-specific factors

The assessment allows us to determine eGovernment maturity, which is affected by different variables.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)[40].
This is shown in Figure 5-2.

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 countries with the largest populations, and those with populations that 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 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 low level of education level and relatively few 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.

Group	Countries								
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	Turkey
Group 5	Sweden	Ireland	Denmark	Finland	Norway				

Figure 5-2: Group of countries with homogeneous context

40 See Background report for the detailed dataset

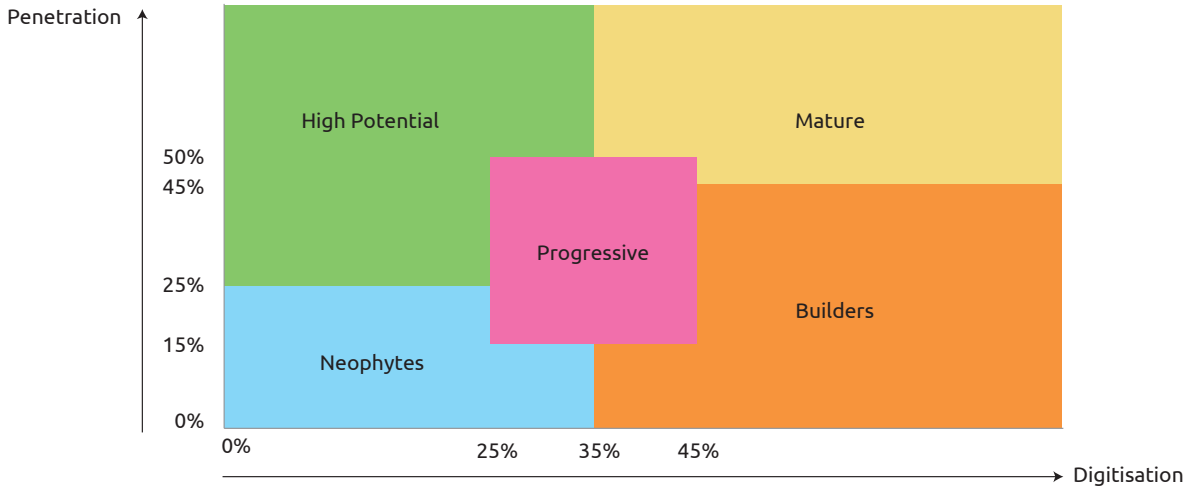


Figure 5-3. Clusters of eGovernment performance

5.4 Clusters of countries based on eGovernment performance factors

The assessment allows to determine the eGovernment maturity of countries and to identify different clusters of countries with a similar eGovernment maturity performance. Figure 5-3 shows the outcome of the cluster analysis on eGovernment performance measured by the two absolute indicators Penetration and Digitiasation. The clusters are described below.

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 to be able to move towards eGovernment maturity.

High Potential Cluster: This cluster is characterised by a 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 actions were to be initiated. It also shows that despite the efforts required, citizens are confident of the eGovernment potential and the use online services.

Progressive Cluster: This cluster is characterised by a medium level of penetration, and a medium level of digitisation. While countries in this cluster have succeeded in bringing most of their services online, there are some factors that constrain full distribution of satisfactory 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 a high level of digitisation, but a medium-low level of penetration. This means that in these countries the public administration is doing well, with a structured approach to innovation. 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. The lack of penetration prevents government from

completely exploiting the advantages of digitisation. These countries 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 of digitisation, displaying a successful process of innovation, making it possible to exploit the opportunities offered by ICT.

5.5 Comparing peers to drive insights and provide practical advice for improvement

The cross-country analysis allows for a better understanding of how context-specific variables impact the performance of countries, and in particular the relevance of the degree of penetration and digitisation.

In the analysis, groups are not dynamic: this means that over the entire time period the groups are formed by the same countries. On the other hand, countries display different performance paths: they move from one cluster to another.

In Figure 5-4 is represents the path of each Country, through performance Clusters.

Figure 5-5-until 5-7 show the evolution of each country, highlighting the path of each Cluster and of the Countries composing them.

		Neophytes	High Potential	Progressive	Builders	Mature
Group 1	2012-2013		LU IS	SI LV CY LT	MT EE	
	2013-2014		LU IS	SI LV CY LT	MT EE	
	2014-2015		LU	SI LV CY LT	MT	IS EE
Group 2	2012-2013		UK FR	IT PL DE ES		
	2013-2014		UK FR	IT PL DE ES		
	2014-2015		UK FR	IT PL DE ES		
Group 3	2012-2013			AT	BE	NL
	2013-2014			AT	BE	NL
	2014-2015			AT	BE	NL
Group 4	2012-2013	TR RO CZ SK HR BG	EL	HU	PT	
	2013-2014	TR RO CZ SK HR BG	EL HU		PT	
	2014-2015	RO CZ SK HR BG	EL HU	TR	PT	
Group 5	2012-2013		IE	SE		FI NO DK
	2013-2014		IE			SE FI NO DK
	2014-2015		IE			SE FI NO DK

Figure 5-4: Group and Cluster assessment

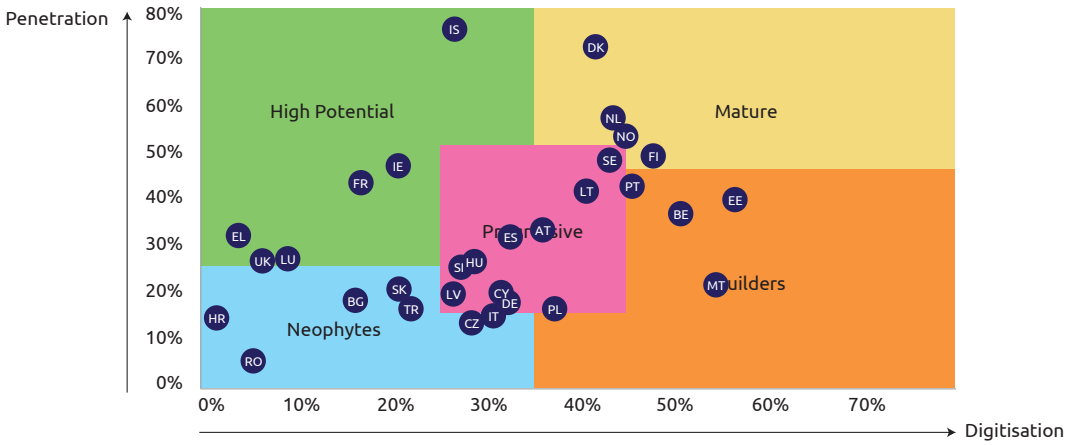


Figure 5-5: Country Performances 2012 - 2013

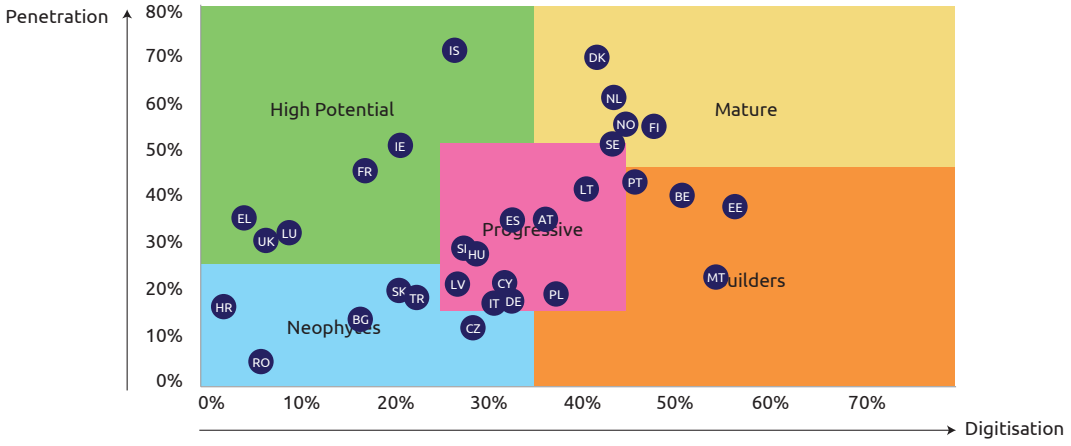


Figure 5-6: Country Performances 2013 - 2014

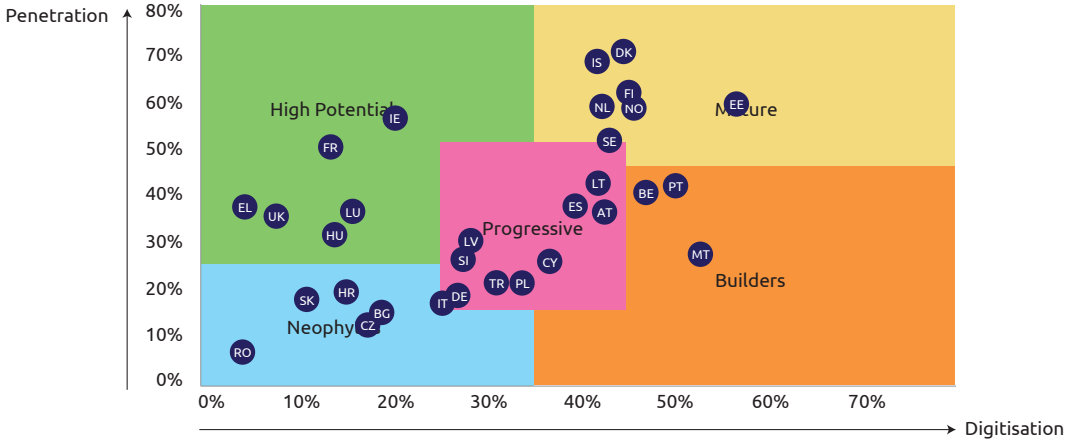


Figure 5-7: Country Performances 2014 - 2015

5.6 Recommendations for countries to move ahead

The benchlearning exercise proposes an innovative point of view, which can be useful in order to understand the meaning of a country's performance gap and to suggest a possible way of overcoming this gap. Through this approach, each country can be compared to others and can try to learn from countries where the context is similar, but performing level is higher. This could help them to understand which level of maturity could be targeted as the next step, and support the development of relevant and feasible eGovernment objectives and related actions for getting there.

Iceland and Estonia are the countries to learn from in **Group 1**; in particular Iceland, which scores one of the highest level of Penetration, has been capable to improve Digitisation over the years , reaching in the Mature cluster in 2014-2015; Estonia has been capable to increase the Penetration in 2014-2015, reaching the Mature cluster, exploiting the efforts made in digitisation. Estonia increased the awareness of its eGovernment services, which were of high quality already. Malta, Cyprus and Lithuania should follow the steps of Estonia, as they are very similar countries. Latvia and Slovenia face a higher gap in Digitisation and Penetration compared to their benchmark (Estonia and Iceland). Luxembourg shows a positive trend but still has room to increase its level of Digitisation and Penetration in comparison to its benchmark countries.

In **Group 2** the benchmark country is Spain. Spain has been capable to implement policies which allowed for a path of overall better performance, reaching a higher Digitisation score in 2014-2015. Compared to the benchmark, contextual factors in Poland that limit better performances may be the availability of digital skills and the difficulty of coordinating the efforts of the public bodies. Similar considerations are valid for Italy, but Poland has a relatively younger population and higher levels of educational and digital skills, and a lower level of corruption. eGoverment usage in Italy seems to be influenced by people's socio-demographic characteristics when compared to the benchmarks (i.e. UK and France). Therefore, it could be appropriate to implement a suitable communication strategy to promote the availability and use of digital services. Germany performs very similar to Italy, but the reasons seem to be different. In fact, for Germany, other factors like broadband penetration and digital skills would lead us to expect higher levels of Digitisation. Germany, Italy and Poland were not capable to improve their performances over the whole period of analysis. France and the UK should increase their level of Digitisation in comparison to their benchmark country (Spain).

In all these countries eGovernment policies should be implemented largely through coordination mechanisms between national, regional and local public authorities rather than simply being forced top-down by national authorities. Progress is then more difficult to achieve as coordination adds another layer to the complexity of the implementation of eGovernment services. 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. Progress is more difficult to achieve then as coordination adds another layer to the complexity of the implementation of eGovernment services. The principal factor that seems to have a negative impact on the performance in the Penetration index is a relatively older population, who might be less eager to use the internet for interactions with government. In this case, an adequate multi-channel strategy with a clear focus on increasing digital literacy and awareness could be the way forward.

The Netherlands is the benchmark for **Group 3**. Over the past years, Austria has made progress with regards to digitisation. Following on this positive path, it could also focus on removing barriers that prevent the penetration to increase. This should bring Austria to reach full maturity as regards penetration and digitisation. Belgium resembles the Netherlands in contextual factors, but it performs better in Digitisation. For Belgium the challenge is to tackle possible usage barriers.

Portugal represents the benchmark for **Group 4**. For Portugal the challenge is to reach better performances in terms of Penetration and therefore it could learn from countries belonging to the High Potential and Mature clusters. In Greece and in Hungary the problem is the low level of Digitisation. In particular Hungary's score on Digitisation decreased in 2013-2014, moving from Progressive to High Potential Cluster. Turkey shows a positive trend, increasing both on Penetration and Digitisation over the years,moving from the Neophytes to the Progressive cluster in 2014-2015. In Croatia, Slovakia and the Czech Republic both Penetration and Digitisation are low. Portugal is the benchmark for these countries, since it has similar characteristics, although the Neophytes must face a higher perceived level of corruption and therefore a greater resistance to the spread of eGovernment.

Countries in **Group 5** are located in the best environment for innovation initiatives to succeed: broadband is widespread, household internet access is high, and people are used to interacting online in different life events. Hence, almost all these countries belong to the Mature Cluster currently. Having said this, there are certainly still challenges facing these countries. In order to increase Penetration, they could focus on further improving the online user experience, and, if use and satisfaction for certain services is high, even consider mandatory use. Improvements could also be made in the digitisation of the back-office in order to increase efficiency in the management of public services and to build a more sustainable eGovernment. In Ireland digital skills are lower than in the comparable countries (the Nordics). This seems to be one of the major issues preventing it from attaining the level of the benchmark countries. Ireland should focus on back=office digitisation, which may support positive achievements linked to ICT use in public service delivery processes.

5.7 Overall conclusion of the clustering analysis

In the actual framework, eGovernment maturity refers to the maturity of the online services. Nonetheless, as shown in the analysis, could eGovernment maturity be affected by different factors, which then could have different meanings depending on the specific 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, is the wrong eGovernment strategy. In these countries, different strategies can be applied in order to improve the 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.

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, Penetration is represented by Eurostat data percentage of individuals who used the Internet within the last year, which use internet to interact with public administration, submitting completed forms; actually it could be worth to explore alter-

native versions to measure eGovernment services penetration.

Currently Eurostat is working on this indicator, in order to calculate two alternatives:

- percentage of individuals needing to submit forms, which submit forms online;
- percentage of internet users needing to submit forms, which submit forms online.

These indicators could be introduced in future benchlearning exercises. Moreover, the other indicators, used to qualify the eGovernment maturity of a country, could be revised in order to take more aspects into consideration: "Penetration" now looks at the interaction with public administration trough internet, but other innovative channels such as public access points, retail stores, or banks if this fits within an eGovernment multi-channel strategy.

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. To understand how a public administration is managing the digitisation of its processes, it would be more appropriate to collect specific data, and it would be useful to build efficiency and effectiveness indicators, through a survey to public entities. Besides, 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 will be possible in the coming years as larger historical series will be available.

Furthermore, future analysis could introduce new indicators, such as Harmonisation and Simplification.

- Harmonisation represents a country's ability to manage a coordinate innovation action;
- Simplification represents a country's ability to drive innovation in order to reduce citizen's burden, eliminating or automatizing public services.

In order to introduce those indicators, a new methodology of data collection is needed, introducing e.g. a survey addressed to each public administration.

Recommendations for accelerating the Digital Transformation of Public Sector

"My report also identifies, yet again, the increasingly urgent need to renew our machinery of government.
We cannot build Europe 2.0 with Government 1.0.
At present we are at best muddling through.[41] *"*

Robert Madelin

Senior Adviser for Innovation to the President of the European Commission

41 Madelin, R. Opportunity Now: Europe's Mission to Innovate, July 2016. Available online here: https://ec.europa.eu/futurium/en/blog/innovation-and-beyond-report-summer-stock-take

6

Recommendations for accelerating the digital transformation of the public sector

6.1 It's about mastering change caused by technology, not about crystal balls to predict the future

Technology is reaching every corner of our world and brings rigorous changes to every industry, every organisation, its processes and people, the public sector included. The future will not be different. It is not entirely clear though which technologies will make impact; predicting future technologies provides very engaging over-the-horizon figments of imagination, but misses the robustness and reliability that public sector can actually build on. No one can actually predict what government could look like in ten years from now. The only thing that is certain is that it will be very different. Technology is changing the game quickly and will continue to do so. The biggest challenge is therefore not anticipating what comes next, but ensuring governments are able to deal with change.

Governments have not shown their ability to deliver technological enablers in the past years

This edition of the eGovernment Benchmark reveals that the progress realised over the past four years is incremental. Technological enablers, that could drive user empowerment and efficiency, are not used to their potential. Mobile internet is another technology that appeared only a few years ago and is making huge impacts in terms of usage and applications. Public sector response to apply this technology, which empowers citizens to easily navigate information about public services and public organisations, is slow as is shown in paragraph 4.3. Both examples illustrate that governments across Europe lack decisiveness to digitise their public services as well as their internal organisations. Results over time are only incremental and need acceleration in order to keep up with private sector, and citizens' expectations.

Digital is not yet in the DNA of governments

Just as eGovernment performance is not revolutionarily improving, the policy priorities of the consecutive eGovernment action plans have not changed so much neither since the 2010 eGovernment Action Plan that was launched in 2006; now ten years ago. In all honesty we could doubt to what extent public sector has really advanced over the years in acquiring an attitude that can deliver on the potential of digital. In the words of the UK Government Digital Services' Executive Director Stephen Foreshew-Cain[42]: *'The biggest problem we face is re-shaping ourselves so that we're better placed to change as rapidly as the world around us.'*

42 From GDS blog post, online available here: https://gds.blog.gov.uk/2016/05/11/what-government-might-look-like-in-2030/

A promising European vision for achieving digital governments

The latest eGovernment Action Plan aims for acceleration of Digital Transformation of government. It offers a vision that *'by 2020, public administrations and public institutions in the European Union should be open, efficient and inclusive, providing borderless, personalised, user-friendly, end-to-end digital public services to all citizens and businesses in the EU. Innovative approaches are used to design and deliver better services in line with the needs and demands of citizens and businesses. Public administrations use the opportunities offered by the new digital environment to facilitate their interactions with stakeholders and with each other'.* It calls on seven principles to achieve that goal. It offers a comprehensive set of actions that will be deployed. We have shown in chapter 4 of this report that there are encouraging signs that European governments are picking up on these principles. It is fair to say however that these principles are not in the DNA of every public authority yet. It will thus require hard work to realise the actions listed and make the vision a reality. Incremental progress is not enough, it is necessary for governments to transform in order to make real progress. But how? The sub title of the new eGovernment Action plan promises 'accelerating digital transformation of government', but is not very explicit in defining what 'digital transformation' implies for a public organisation and what needs to be done to master digital. We aim to provide some guidance on the topic in this chapter.

6.2 Digital transformation requires digital capabilities and leadership capabilities

Before providing guidance on how governments can transform, it is first important to understand what digital transformation actually is and what distinguishes good performers from others. Research[43] conducted in the field of digital transformation learns that so-called 'digital masters' excel in two critical dimensions: the what of technology (***digital capabilities***) and the how of leading change (***leadership capabilities***). Evidence shows businesses that perform well on both dimensions are both receiving higher revenues from their physical assets and are also more profitable than industry peers. In parallel this mechanism is likely to be true for public organisations with regard to their cost efficiency and realisation of public value.

- **Digital capabilities:** a set of digital transformation elements implemented by the organisation, including the strategic assets and digital investments that are used to create those elements. The research showed executives are digitally transforming three key areas of their organisations: customer experience, operational processes and business models (see figure 6-1). Within each of the three pillars, different elements are changing. These nine elements form a set of building blocks for digital transformation. No organisation in the research sample fully transformed all nine elements. Rather, executives are selecting among these building blocks to move forward in the manner that they believe is right for their organisations.
- **Leadership capabilities:** the way that senior executives drive change throughout the organisation. This includes creating and communicating vision, establishing governance and measurement mechanisms, and building a digital-ready culture. These serve as means for leaders to ensure that building blocks are built effectively and that the organisation has the skills and culture to drive (public) value from them.

43 Westerman G., Bonnet D., McAfee A., Leading Digital. Turning technology into business transformation, HBR Press, 2014.

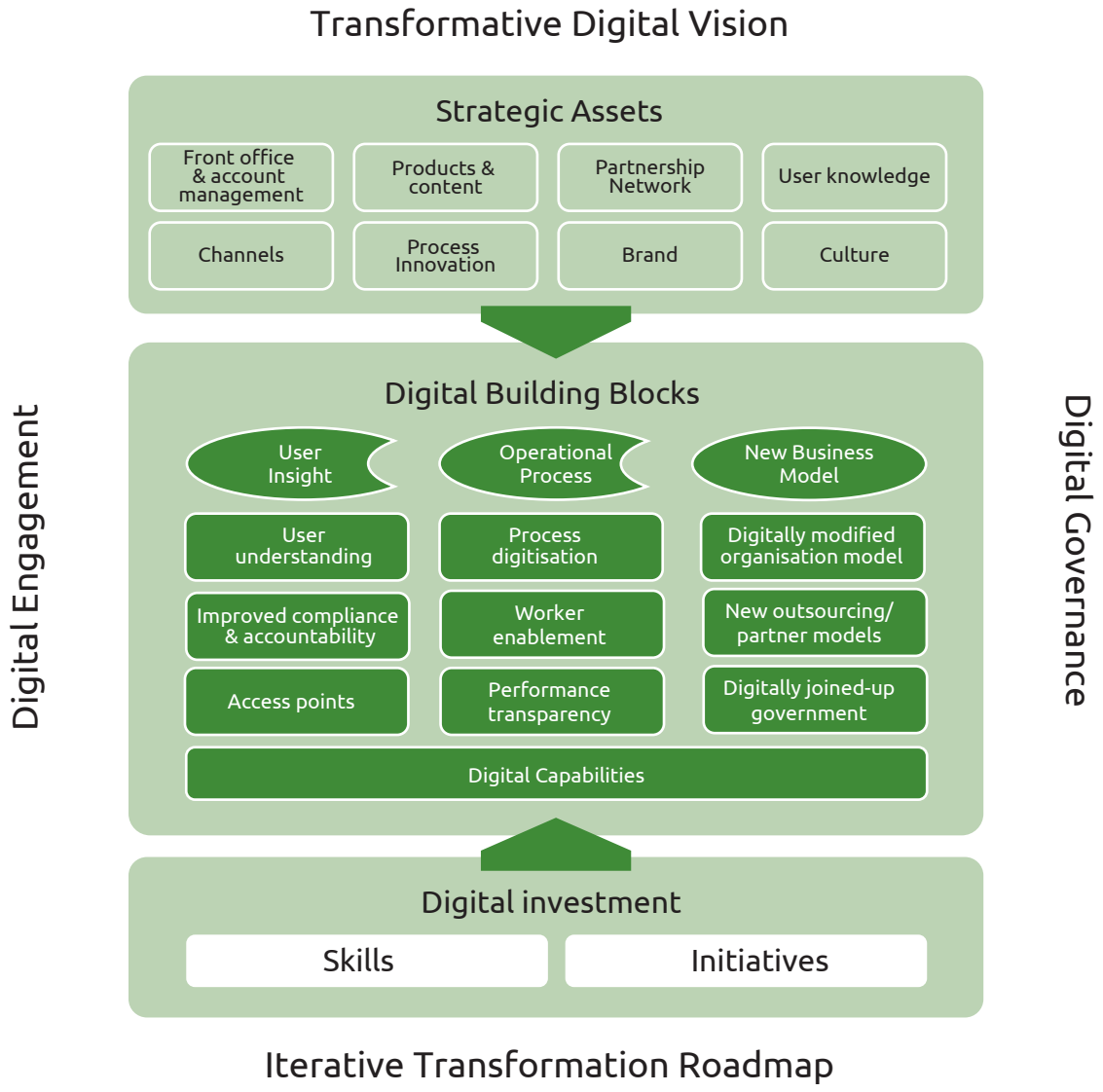


Figure 6-1: Digital Transformation framework[44]

44 Based on the model developed by the MIT Center for Digital Business and Capgemini Consulting, Digital Transformation: a roadmap for billion-dollar organizations, 2011.

6.3 How can governments turn digital? Recommendations for building digital and leadership capabilities

The way to transform cannot be prescribed, but needs to be explored and discovered. From the model in figure 6-1 we can derive recommendations for public organisations in their ambition to digitally transform. We focus here on the digital building blocks of this model as they are most directly related to eGovernment developments. Each country will take a different route though, depending on their specific context. These recommendations serve as a menu that governments can select from based on what they feel is the necessary next step in their transformation process.

Building block I: Customer insight and experience. Aimed at attracting more citizens and businesses to the online channel for public services. Higher use of eGovernment will contribute to user empowerment and to the digital business case.

- **Put user understanding in the centre of service delivery and apply analytics to drive continuous improvement.** Design online services from the outside in. Re-use data to reduce burdens. Use data and analytics to improve the service portfolio. More than a decade ago, the private sector discovered customer relationship management - the use of digital technologies to integrate all aspects of a firm's interaction with a customer to improve personalised communication and provide real-time information so that customers can track the status of their service requests. Governments have only recently discovered this management approach, with most innovation in cities in the developed countries[45]. What do you really know about your users' needs? Do you know which services are most fit for digital? With which frequency and volume services are used? Which services users consider to be most burdensome? What is most searched for on your website and on search engines?
  A good practice in this regard is that Swedish agencies seek to reduce 'failure demand' by helping citizens at first contact. Upon noticing many citizens were not served at their first contact, and consequently new attempts were made to get an answer which demanded unnecessary government resources, they have now found new and lean ways to organise the process and save tax-payers money[46].
- **Improve compliance/accountability by opening up to the public.** This is about building trust. Citizens expect clarity on how their personal data is used by public authorities, and how secure that data is. Increase transparency about your organisation's performance and pro-actively open up information and data. In the context of service delivery processes be clear about the service levels you aim for and to what extent they are met in practice. Have you set such service standards, and published them so users understand what to expect?
- **Ensure accessibility and support for all through access points.** This building block is about multichannel access. It is also about support. Fast and transparent problem resolution builds trust for users. We see an increasing number of countries opening up dedicated citizen access points to facilitate users without access or skills to be part of the digital economy. Online portals are another way to inform and guide users to the information or service they need. These have advanced over the years as our measurement shows. But is your portal

45 Digital Dividends, World Bank, 2016. Chapter 3: delivering services. Online available here: http://documents.worldbank.org/curated/en/896971468194972881/pdf/102725-PUB-Replacement-PUBLIC.pdf

46 From: https://joinup.ec.europa.eu/community/epractice/case/failure-demand-swedish-agencies-seek-help-more-citizens-first-contact

also easily accessible for mobile devices or have you designed specific apps to facilitate citizens (e.g. like Portugal[47] realised for employment services)? Have you experienced with 'customer care' using social media? Are you reducing government to citizen communication on paper, e.g. by using digital post as in Denmark[48] who in doing so also realise 100 million of savings per year?

Building block II: Operational process.
It might be less visible or exciting than transforming user experience, public authorities gain strong benefits by digitising the internal organisation in terms of increased efficiency and effectiveness. Given the importance of institutions for service delivery, the policy agenda is to use digital technologies to strengthen institutions[49].

- **Process digitisation to make processes more efficient and scalable.** A key role for the once-only principle to ensure that citizens and businesses supply the same information only once to a public administration. Build authentic sources (base registers) of data that are mandatory for public administrations to be used. Take into account existing data privacy regulations where relevant. Deal with legacy. Make sure that the internal processes are also digitised to avoid the awful spectre of servants printing out digital forms filled in by users to file them in a paper archive (it still happens!). But digitisation can also gain benefits beyond mere efficiency: the data collected can be more easily analysed and used for service optimisation and/or improved policies (hence also improving effectiveness). Have you already set 'once-only' as an obligation - not just a principle - for your organisation? What other bottlenecks could be solved by applying digital technologies? Are you able to move away from the pre-digital age?
- **Worker enablement opens up new ways of collaboration and knowledge sharing.** Provide civil servants with the tools that increase their mobility, collaboration options and flexibility. But these new ways of working can also become powerful enablers for knowledge sharing, for instance for front-desk employees that can use collaborative tools to identify the right expert in their organisation in order to provide citizens with quick and complete answers. There also are various examples of technologies enabling workers, for instance in customs or in inspections to do their work more efficiently and effectively. Have you made sure your workers not only have (access to) the right technologies and tools, but also are using them in an optimal way? Are your internal working processes adapted to these new ways of working?
- **Performance transparency to enable more informed decision making.** We already argued in favour of using analytics to optimise user experiences. Establishing a feedback loop is hence vitally important to be able to act on the insights gathered. But performance transparency goes one step beyond. Are you aware of the public value established by the latest policy initiative that was launched? Did you quantify and qualify when a policy effort is successful? How much value for Tax money you got? Measure everything that helps you to make better policy decisions.

Building block III: New Business Model.
Change routines. Explore new ways to deliver public value. Be prepared to deal with change as a result of new technologies ahead of us.

- **Digitally modified organisational model.** Digital is the new default for private sector and public sector will

47 https://joinup.ec.europa.eu/community/epractice/news/portugal-adds-services-its-mobile-app
48 https://joinup.ec.europa.eu/community/epractice/news/denmark%E2%80%99s-switch-over-digital-post-success
49 Digital Dividends, World Bank, 2016. Chapter 3: delivering services. Online available here: http://documents.worldbank.org/curated/en/896971468194972881/pdf/102725-PUB-Replacement-PUBLIC.pdf

have to follow. This affects service delivery of course, but also the internal organisation as we have seen. It can lead to new organisational models, such as in Denmark that has made the vast majority of services mandatory online, or in the Dutch municipality of Molenwaard that has no physical office anymore but has gone completely digital, resulting in public debates and services being organised even closer to its residents. It changes the front-offices of governments and how these are organised. Online planning of an appointment is becoming the standard in some countries, reducing waiting times hugely compared to when citizens visit town hall at random moments.

- **Explore new outsourcing/partner models.** Digital technologies such as crowdsourincg can also lead to new applications that support service delivery and transparency. Switzerland experimented with a digital map where commercial service providers could list their eGovernment projects for Swiss government. It became a huge success as companies were eager to get on the map, and consequently it became clear for government what solutions were implemented where, and by whom. It also led to increased interoperability between public administrations. Public-private collaboration and shared service centres can accomplish far more in terms of quality (by increasing specific expertise) and cost-effectiveness (flexibility, shared responsibility) compared to traditional context. Another example is Belgium[50] where it is considered to re-use 'Belgian Mobile ID' - a smartphone app developed by banks and telecom - in eGovernment services.
- **Digitally joined-up government.** Digital technology coupled with integrated information is allowing governments to gain synergies while respecting local autonomy. Shared authentic sources can be used across government tiers, enabling better user experience and increased efficiency. Digital technologies also cross borders and open up the true advantage of a Digital Single Market. Creating a seamless digital market in Europe is an important lever for growth. According to an analysis by the European Parliamentary Research Service[51], a fully integrated digital sector could boost Europe's annual GDP growth by 0.45 percent in a decade. A 2014 European Commission paper[52] suggests that reinforcing the integration of the Digital Single Market and e-business models could boost growth by 1.9 percent. The key is to ensure interoperable solutions. As the eGovernment Action Plan states: 'public services should be designed to work seamlessly across the Single Market and across organisational silos, relying on the free movement of data and digital services in the European Union'. Does your organisation already accept eIDs from abroad? How are you supporting foreign entrepreneurs that might want to invest in your country?

Recommendations for leadership on how to steer the complex journey of digital transformation[53]:

From the measurement results it becomes clear there is Digital Diagonal appearing in Europe, and it can be concluded that there are various countries that are lagging behind and not seem to be able (yet) to start their digital journey and move along on the same pace as the rest of Europe. However, often it is not a problem of getting civil servants started, but mostly to get everyone moving in the same direction. This

50 https://joinup.ec.europa.eu/community/epractice/news/belgium-mulls-reuse-banking-mobile-eid-app
51 Joseph Dunne, Mapping the costs of non-Europe, 2014–19, European Parliamentary Research Service, March 2014. For further discussion, also see A window of opportunity for Europe, McKinsey Global Institute, June 2015.
52 Dimitri Lorenzani and Janos Varga, The economic impact of digital structural reforms, European Commission European Economy economic paper number 529, September 2014.
53 Westerman G., Bonnet D., McAfee A., Leading Digital. Turning technology into business transformation, HBR Press, 2014.

is the area of leadership. The aforementioned research showed that successful digital transformations were steered top-down: providing the direction, building the momentum and bringing everyone along on that journey. This is difficult in any large organisation, and for sure is in public sector where hierarchy is not always as clear and often various leaders share responsibility for a specific topic. Four recommendations[54] for digital leaders:

- **Frame the digital challenge:** Build awareness of digital opportunities and threats. Know your starting point, and assess your digital maturity. Craft a vision, and ensure that your top team is aligned around it.
- **Focus investment:** Translate your vision into an actionable roadmap. Build cross-silo governance structures. Put in place the funding for your transformation.
- **Mobilise the organisation:** Send unambiguous signals about your ambitions and the change needed now. Build momentum and engage the workforce. Set new behaviours and start evolving the organisation toward a more innovative culture.
- **Sustain the transition:** Build the necessary foundational skills. Align reward structures to overcome traditional organisational barriers. Monitor and measure the progress of the transformation, and iterate when necessary.

6.4 Underestimated issue? Investment needed in skills of the public sector workforce

Successful digital transformation does not come from implementing new technologies but from transforming an organisation to take advantage of the possibilities that new technologies provide. Besides leading the change, this also requires that all people in an organisation - leadership, IT professionals, employees in other divisions - obtain the skills

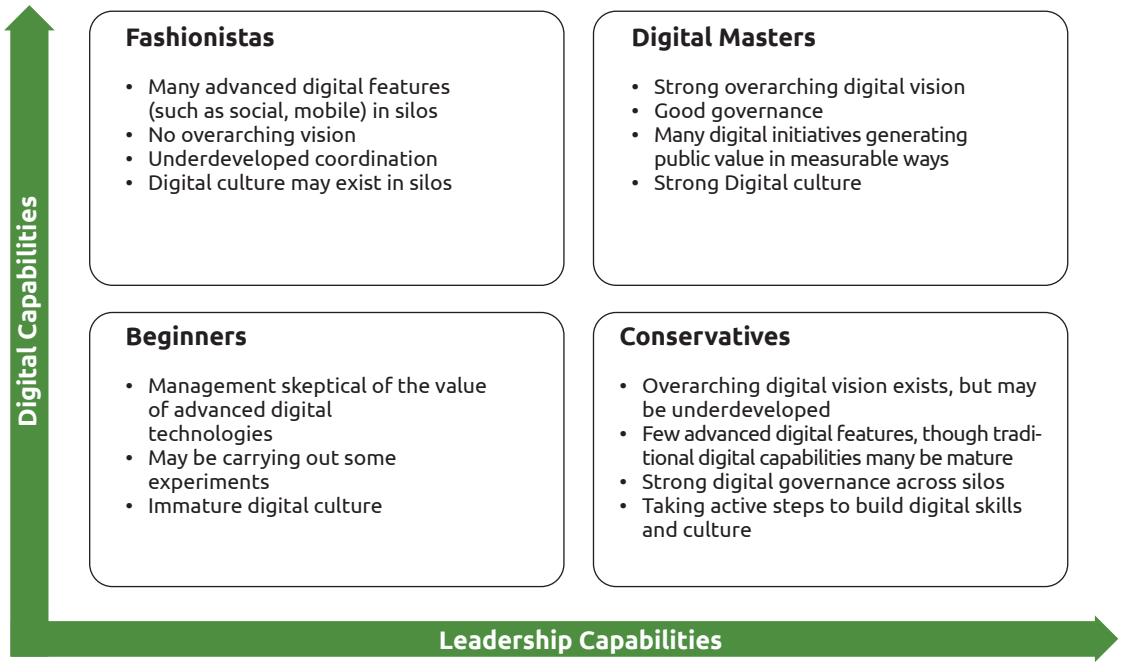


Figure 6-2: Digital maturity matrix highlighting four different types of approaches to driving digital transformation[55]

54 Taken from Westerman G., Bonnet D., McAfee A., Leading Digital. Turning technology into business transformation, HBR Press, 2014.

55 Westerman G., Bonnet D., McAfee A., Leading Digital. Turning technology into business transformation, HBR Press, 2014.

to embrace technology. Even though accurate numbers on digital skills of civil servants are not available, there are hints there is serious work required to ensure public sector can indeed accelerate its digital transformation:

- The OECD[56] already signalled that a low knowledge and skills of ICT are the key factor hindering e-Procurement system implementation.
- Another example comes from the UK, where TechUK's survey of nearly 1500 civil servants revealed that 84% of respondents agree or strongly agree that tech is critical to delivering their department's business plan. However, there was broad agreement that capability to manage relationships with IT suppliers remains a weakness with only 14% rating these skills as good (down 6% since the previous survey). The survey also showed that without the right skills, civil servants will struggle to identify the potential cyber security threats, which will harm the government's ability to achieve its goals of transforming public services.
- The UK government needs to recruit 2,800 IT staff to meet demand for digital skills over the next five years, according to the head of the National Audit Office (NAO)[57]. The NAO Chief highlighted in particular a 'digital capability gap' that will cost hundreds of millions of pounds to address.
- Research from the University of Twente [58] (the Netherlands) revealed that digital skills of civil servants are similar to the digital skills of regular citizens, and consequently leave room for improvement. There was one striking difference though: the servants taking part in the test were more satisfied with their demonstrated skills. Probably because they were confident in using those skills for specific functions in their workplace. The research showed however that they overestimated their own internet skills.

The World Bank[59] indicated that while nobody can predict the full impact of technological change in coming decades, *which may be faster and broader than previous ones, 'what is clear, however, is that policy makers face a race between technology and education, and the winners will be those who encourage skill upgrading so that all can benefit from digital opportunities'.*

Perhaps digital skills of the public workforce is underestimated too? Strikingly, the word 'skills' is not mentioned at all in the new eGovernment Action Plan. Furthermore, it is a very good thing to invest in improving digital skills in specific economic sectors (as the 'Blueprint for Sectoral Cooperation on Skills[60] aims for) - but why not include the public sector as one of them?

We started this chapter by stating that technology is changing the game quickly and will continue to do so, and that the biggest challenge is therefore not so much in anticipating what comes next, but ensuring governments are able to deal with change. Digital transformation of government – the sub title of the new eGovernment Action plan - can only be realised through building digital capabilities and effective digital leadership, supported by an adequately skilled public apparatus. This should be high on every public leader's agenda. If so, this could indeed proof to be the turning point for eGovernment development in Europe.

56 Government at a Glance, OECD, 2015. http://www.oecd-ilibrary.org/docserver/download/4215081e.pdf?expires=1466409-CEAEid=id&accname=guest&checksum=E7A3ADE27AE98DCADC19E72E44CCEAE8

57 ComputerWeekly.com: http://www.computerweekly.com/news/450300827/UK-government-needs-2800-extra-digital-staff-to-deliver-current-plans

58 Alexander van Deursen, Digitale vaardigheden van ambtenaren, 2009. Available here: http://doc.utwente.nl/94541/1/digitale-vaardigheden.pdf

59 Digital Dividends, World Bank, 2016. Online available here: http://documents.worldbank.org/curated/en/896971468194972881/pdf/102725-PUB-Replacement-PUBLIC.pdf

60 See http://europa.eu/rapid/press-release_IP-16-2039_en.htm

List of country acronyms

Country Acronyms (in alphabetical order)		
1	AT	Austria
2	BE	Belgium
3	BG	Bulgaria
4	CH	Switzerland
5	CY	Cyprus
6	CZ	Czech Republic
7	DE	Germany
8	DK	Denmark
9	EE	Estonia
10	EL	Greece
11	ES	Spain
12	FI	Finland
13	FR	France
14	HR	Croatia
15	HU	Hungary
16	IE	Ireland
17	IS	Iceland
18	IT	Italy
19	LT	Lithuania
20	LU	Luxembourg
21	LV	Latvia
22	MT	Malta
23	ME	Montenegro
24	NL	Netherlands
25	NO	Norway
26	PL	Poland
27	PT	Portugal
28	RO	Romania
29	RS	Serbia
30	SE	Sweden
31	SI	Slovenia
32	SK	Slovakia
33	TR	Turkey
34	UK	United Kingdom
	EU28+	Cluster of all listed countries in this list

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