

eGovernment Benchmark Scotland 2020

Measuring the realisation of Scotland's
digital public service potential

September 2020



Executive Summary

Well designed and executed digital services should enable citizens and businesses to seamlessly interact with public services, on their terms. Digital can overcome the organisational silos of Government Directorates, agencies and local authorities. It can also enable public services to be more proactive, in wrapping support around individuals, families, communities and businesses that need help to overcome their problems.

The COVID-19 pandemic has indisputably underlined the critical importance of trusted, effective and scalable digital services in every aspect of public service: education, healthcare, social care, social security, business support and grants, etc. The continued need for social-distancing, on-going localised 'lock downs' and quarantining individuals and groups, is highlighting the successes and limitations of today's digital public service capability.

In the light of these developments and the revision of the Scottish Government's Digital Strategy "Realising Scotland's full potential in a Digital World", Capgemini was asked to conduct a benchmarking study with a specific focus on the effectiveness of Scotland's digital public services. The aim of this study is to provide an assessment, at this moment in time, of how Scotland is performing when compared to other nations across Europe.

We evaluated the 'digital maturity' of Scottish eGovernment services based on a methodology that we have developed, used and revised for the European Commission over many years.¹ This enables Scotland to be benchmarked against European peers and front runners, highlighting its strengths as well as areas for improvement. Government digital services were analysed by Mystery Shoppers (country citizens, trained and briefed on what to observe, and how to assess eGovernment services consistently). They assessed the digital experience using eight life events (key challenges that citizens and businesses encounter that may lead to interacting with chains of services), as well as a selection of healthcare services.

This study has found that:

From an International Perspective:

- Scottish digital public services outperform the EU27+ average and the United Kingdom. Nevertheless, it stays behind the Nordic countries. Scotland's greatest gap is in the area of Key Enablers, as its eID and other building blocks have not yet reached the same level of implementation as in Europe's best in class countries.
- The comparison of life events shows that Scottish entrepreneurs enjoy good digital public services, but many local services need improvement.
- Inter-organisational alignment is important. Especially in life events, where more than half of the services are provided by multiple public sector bodies, speaking with one voice and acting as one is needed to support citizens and businesses seamlessly.

From an eGovernment User Journey Perspective:

- The Scottish eGovernment user journey is centered around the 8 out of 10 services that are fully online. Mobile friendliness, user support and a feedback-oriented government also fuel this journey and show the possibilities of the Scottish Approach to Service Design (SA_tSD).
- Further implementation of Key Enablers (e.g. the Digital Identity Scotland programme and data sharing with Authentic Sources), as well as providing more procedural clarity is needed to strengthen the eGovernment user journey and limit discontinuities.
- User journeys that transcend organisational boundaries, particularly between central Government and local government, are fragmented and complex to navigate.

All in all, the Scottish Government is proving itself by developing a holistic way of delivering online government services and realises its potential in different eGovernment areas. At the same time, 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 a government that is able to deal with change.

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How We Measured eGovernment Performance In Scotland

We evaluate the performance of eGovernment services through the lens of eight Life Events. These Life Events refer to a bundle of digital services that the average citizen or business is likely to require at some point in time. Two Life Events relate to a chain of government services relevant for businesses, the remaining six Life Events cover government services targeting the needs of citizens.

2.1. What We Measure for Businesses

Business Start-Up: For citizens that want to start a business, we assess the administrative steps to register the new company. We also evaluate whether users can obtain a tax registration number online and the ease of which they can find mandatory insurance schemes. Early trading activities, such as hiring employees and requesting permits, are measured too.

Regular Business Operations: For experienced entrepreneurs, we assess corporate tax declaration and submission of financial reports via digital channels. We check for information on working conditions for employees; and whether it is possible to manage changing employee statuses online.

2.2. What We Measure for Citizens

Losing and Finding a Job: For citizens that lose their job, we assess whether it is possible to register as unemployed online; whether information on unemployment benefits and entitlements are available and whether these can be applied for online. Similarly, assistance services for finding a job are assessed, including training programmes.

Studying: For students, we assess the enrolment process for university programmes in the country of origin and abroad; whether application procedures for student loans and other financing schemes are available and if, for students already enrolled, it is possible to track grades online.

Family: For parents, we assess applying for child maintenance allowance online; obtaining parental authority for unmarried partners; requesting a passport or replacement birth certificate, and information on retirement as well as online pension claims.

Starting a Small Claims Procedure: For citizens involved in an accident, we assess the availability of information and online means to file a legal claim for damage against another natural or legal person. It also includes consideration of online appeal mechanisms.

Owning and Driving a Car: For car owners, we assess whether information on vehicle tax, insurance and registration obligations are available online; whether it is possible to verify information on second-hand vehicles in the car register and whether fines and duties relating to the use of a private car can be settled online.

Moving: For families moving into a new place of residence, we assess what online information is available on local schools and amenities; whether it is possible to register the new address in the municipality register online and whether other relevant authorities are notified automatically.

On top of these in-depth Life Events, a selection of Healthcare services were evaluated.

2.3. How We Measure it

It's crucial that service assessments are completed without bias, which is why the data to evaluate these Life Events is gathered by "Mystery Shoppers", who are country citizens, trained and briefed on what to observe, and how to assess eGovernment services consistently.

Four Top-level Benchmarks

The digital services are scored according to the following top-level benchmarks:

1. **User Centricity** – To what extent are services provided online? How mobile friendly are they? And what online support and feedback mechanisms are in place?
2. **Transparency** – Are public administrations providing clear, openly communicated information about how their services are delivered? Are they transparent about the responsibilities and performance of their public organisations, and the way people's personal data is being processed?
3. **Key Enablers** – What technological enablers are in place for the delivery of eGovernment services?
4. **Cross-Border Mobility** – How easily are citizens from abroad able to access and use the online services?



The Mystery Shopper's job is to act as a prospective user while following a detailed, objective and standardised evaluation checklist. Their feedback directly impacts the results of the study outlined in this report. We apply Mystery Shopping consistently for all top-level benchmarks under review, except for the assessments of Mobile Friendliness and Cybersecurity which we evaluate using automated tooling.

The data for the Scottish Government was collected during the first half of 2020. The data is compared with data from selected European peers and the EU27+ average, collected

during the period of 2018-2019. Selected peer countries are Ireland, the United Kingdom altogether, Italy and the Nordic countries Denmark, Finland, Iceland, Norway and Sweden.

The results from the Mystery Shopping assessments of all mentioned countries were open to the validation of country representatives. These representatives were involved in the complete, end-to-end evaluation process; from approving which websites should be studied and identifying key characteristics of services under assessment, to validating the findings and collaborating with relevant public entities and correcting inaccurate findings.

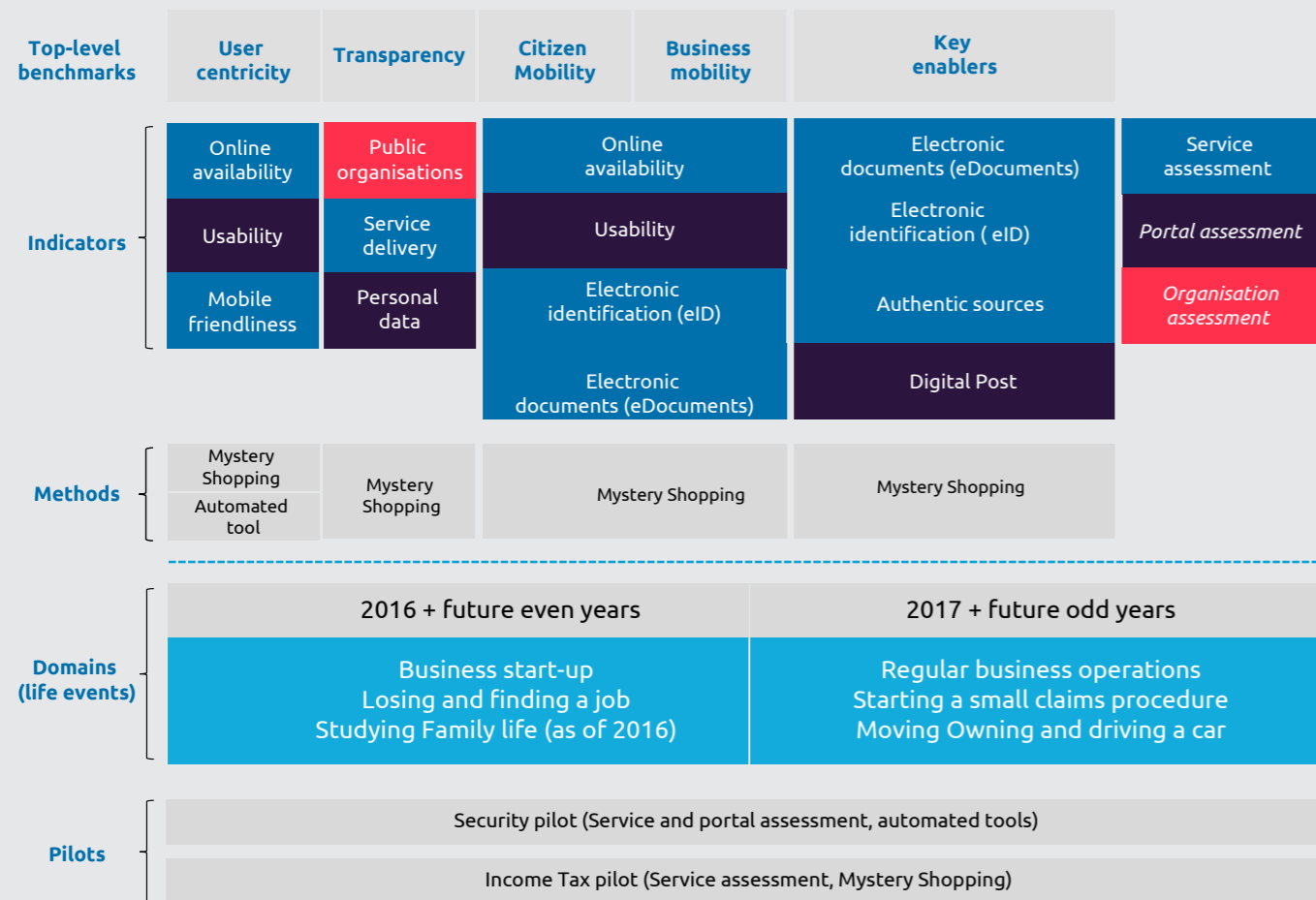


Figure 1 Measurement Framework (based on European Commission eGovernment Benchmark Methodology) ⁴

⁴ Relevant study materials can be found at: <https://ec.europa.eu/digital-single-market/en/news/egovement-benchmark-2019-trust-government-increasingly-important-people>



State-of-play of Scottish eGovernment

Key Findings

- Scotland's digital public services outperforms the EU27+ average and the United Kingdom. Nevertheless, it is behind the Nordic countries. Scotland's greatest gap is Key Enablers, such as eID and other building blocks, which have not reached the same level of implementation as in Europe's best in class countries.
- The evaluation of life events shows that Scottish entrepreneurs enjoy good eGovernment, but local services need improvement.
- Inter-organisational alignment is important. Especially in life events where more than half of the services are provided by multiple public sector bodies. Speaking with one voice and acting as one is needed to support citizens and businesses seamlessly.



Scotland's digital public services outperforms the EU27+⁵ and the United Kingdom specifically. Nevertheless, in the European context, Scotland is behind the leaders in eGovernment. This chapter will continue by shining a light on the dispersed nature of Scottish eGovernment, where users encounter multiple service providers within one Life Event. Lastly, this chapter shows the differences in eGovernment between the Life Events and identifies specific services that could be improved.

3.1. Scottish Public Sector Bodies Outperform the UK and the European Average

Scottish citizens and business use a range of services, provided by Scottish public sector bodies as well as services provided via GOV.UK by UK Government. For this part of the analysis only the services provided by Scottish public sector bodies are assessed.⁶ To create a fair comparison, the results of the other countries in this section are based on the same services. This excludes many of the services for businesses, since these are provided via GOV.UK in Scotland.

Figure 2 shows the overall average of all top-level benchmarks. This report finds that Scottish public sector bodies score 67% as overall average score, which is substantially higher than the average of the EU27+. Furthermore, Scottish public sector bodies outperform public sector bodies in the remainder of the United Kingdom by 13 p.p. (percentage points).

While Scottish public sector bodies perform above the European average, they are not (yet) among Europe's digital leaders in eGovernment. The Nordics, for instance, each provide better eGovernment than Scotland. Denmark scores 10 p.p. higher than Scotland, which is a considerable gap. The Nordic countries particularly stand out in implementing Key Enablers. National eID schemes and unified digital post-boxes took flight in these countries, so that users can easily identify themselves online across all sorts of entities and have all government communication stored online. The remainder of this report will also provide the reader of this document with handles and good practices to inspire better eGovernment.

Overall Average

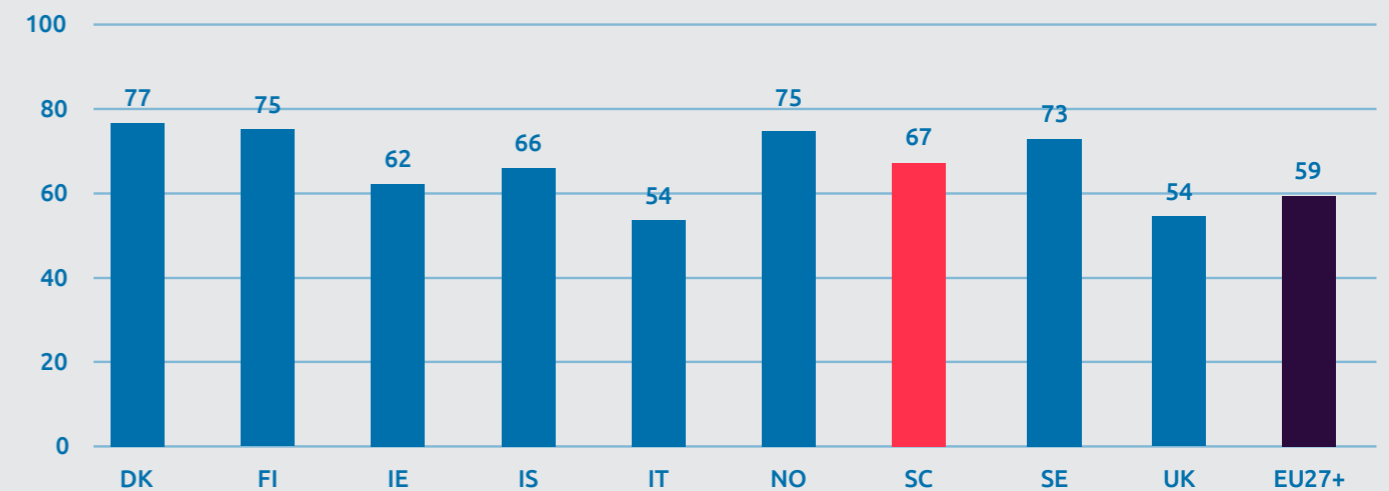


Figure 2 Overall average score of the eGovernment Benchmark Assessment

⁵The EU27+ is the entire sample of 36 countries assessed for the eGovernment Benchmark Report for the European Commission. This entails the EU27 and Iceland, Norway, Montenegro, Republic of Serbia, Switzerland, Turkey, the United Kingdom, Albania and North Macedonia.

⁶The service provided by the Scottish Public Sector Bodies can be distinguished in the source data.

Figure 3 shows how Scotland fared for each of the four top level benchmarks. In the later chapters we will further explain these scores, however we will start with a high-level overview. Scotland excels in Cross-Border Mobility (85%). This means that non-national users and businesses encounter very few barriers while obtaining services from Scottish public sector bodies. Scotland also obtains a very high score on User Centricity with 89%, implying that Scottish users can find many services online, on their desktop as well as their mobile phones, and enjoy good user support on portal websites. For the Transparency top-level benchmark, Scotland obtains a score of 55%, which is similar to the score of the United Kingdom (57%) and the EU27+ (58%). This implies that citizens and businesses could be supported with

more transparency during the process of service delivery, more insight into the use of their personal data by Scottish public sector bodies and more options for participation and communication with public sector bodies. Lastly, Scotland underperforms the EU27+ average for Key Enablers by 9 p.p. with a score of 40% compared to 49% for the EU27+. Scottish eGovernment could be substantially improved by offering citizens the possibility to use a government sanctioned eID, to create the opportunity to communicate digitally with the government via digital post-box solutions. There also exists room for improvement for the re-use of data, for example by prefilling personal information of users to help them save time and reduce the chance of errors.

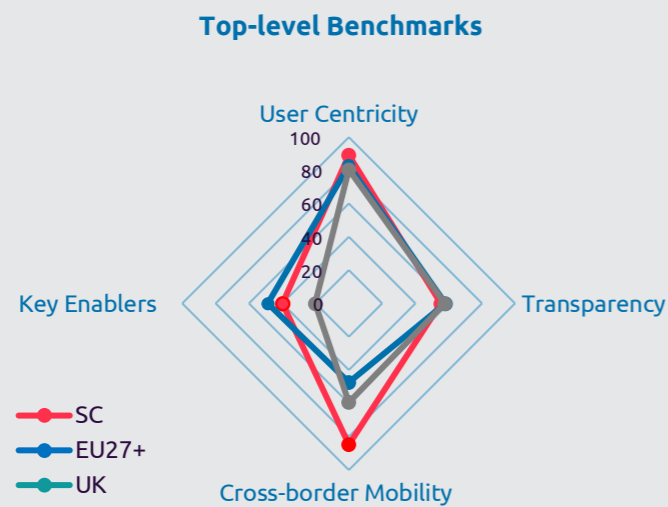


Figure 3 Scottish Top-level Benchmarks compared to the UK and the EU27+ Average

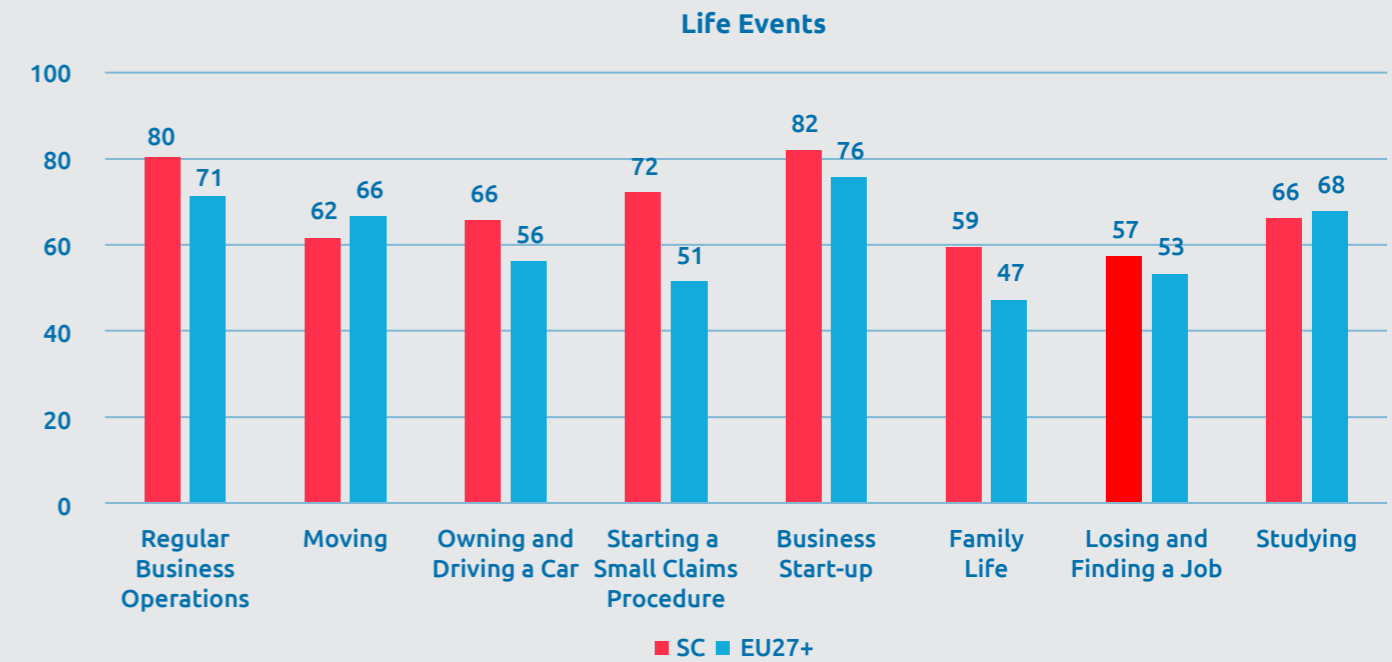


Figure 4 Scottish eGovernment Score per Life Event

3.2. Scottish Entrepreneurs Enjoy Good eGovernment, but Local Services Need Improvement

eGovernment for business Life Events (Regular Business Operations and Business Start-up) is usually better than eGovernment for citizen Life Events and Figure 4 shows that Scotland is no exception to this rule. It should be noted that almost all services in the business Life Events are provided via GOV.UK by the HMRC, which lie outside the direct responsibility of Scottish public sector bodies. Another Life Event that is mostly outside the jurisdiction of Scottish authorities is Losing and Finding a Job, where the DWP is the most common service provider. Looking at the Life Events where Scottish public sector bodies (partly) bear the responsibility, this research finds that the Scottish scores are substantially above the European average.

Scottish public sector bodies excel in the way they make Small Claims Procedure available online, which is an indication that digital judicial services are provided to a high level to Scottish citizens. The average score of 72% is well

above the 51% average of the EU27+. The services in the small claim procedure could be further improved with pre-filled personal information. Moreover, a digital mailbox would help citizens to keep all important documents in one place.

Scotland is slightly below the EU27+ average in Moving (62% and 66%). When moving houses, Scots can complete almost all services (such as registering for council tax and notifying the HMRC of the address change) online. Nevertheless, service delivery could be improved with the use of base registries to prefill personal information and with a consistent way of working across local service providers (see the example in the blue box). Currently, each place requires citizens to create a separate personal profile. Providing solutions in line with the European Commission's 'Once Only Principle', which advises that citizens only need to enter their data once, would be an immediate improvement. Creating one digital infrastructure for Scotland would reduce the work of local services and cities and provide security and consistency to citizens.

A number of services in the Family Life Event are also provided by local service providers and therefore similar improvements could be implemented. The average score of 59% for this Life Event is substantially higher than the European average, but could still be improved. For example, providing users with an interoperable eID. Such a solution is of mutual benefit: citizens can easily use the same form of authentication on multiple websites, whereas government can provide more services online because citizens can authenticate online instead of in person. Services where authentication is vital, such as the registration of a child, could be delivered online when a trusted form of eID is in place.

Scottish (aspiring) car owners are slightly less well supported by their government online, although Scotland still outperforms the EU27+ average by 4 p.p. Most services in this Life Event are online, but the way in which the services are delivered could be further improved. Take for instance, the service Obtain a Parking Permit, which is assessed in seven cities. Obtaining a parking permit online is not possible in all seven cities. Where it is possible to obtain it entirely online, the process is often opaque. Users often do not know how long it will take before the process is completed and when they need to leave mid-process it is often not possible to save their work as a draft.

Scotland obtains an average score of 66% for Studying, which is slightly behind the EU27+ average. Students can find and complete most of the services online. Still, for some services, such as additional benefits for disabled students, non-digital interactions with public sector bodies is still required. Students would also be helped with tools that provide them more insights into the process of service delivery, such as a progress tracker.

Learning from others: eMunicipality Portal (Hungary)

The e-Municipality Portal provides a single point of contact to all e-government services provided by the local governments. More than 99% of the 3200 Hungarian local governments offer their services via this portal.

More information:
<https://e-onkormanyzat.gov.hu/>

Learning from others: Digital Mobile Key (Portugal)

The DMK is an eID & eSignature solution that provides secure electronic authentication for both public and private sector websites and allows citizens to obtain services and digitally sign documents.

More information:
<https://www.autenticacao.gov.pt/>

eGovernment for care services: Information is readily available, but service delivery still in its infancy

In an ageing society, caring for each other becomes increasingly important. There are many who need help and luckily there are many who are willing to help. This report assessed how eGovernment facilitates the elderly in getting the care they need. The services under evaluation for this life event can be found in the Appendix.

Looking at health related services, two observations stand out:

- (1) information is often readily available on the websites of Scottish public sector bodies,
- (2) to actually obtain a service people are still depending on non-digital solutions. To provide an example: only in three councils (Edinburgh, Dundee, Stirling) can register online for either a carer or for carer training. None of the other services go further than obtaining information which can be completed online.

The development of eGovernment for care related services is still in its infancy, which is both a challenge and an opportunity. The services chosen in this life event can be digitalized in a uniform manner, providing consistent good eGovernment to people looking for help. Setting up one module that can be implemented across all councils, could be a worthwhile approach that benefits citizens and public sector bodies in the long term.

3.3. Overcoming Interdepartmental Silos Improves eGovernment and Simplifies Governance

Interoperability ensures that cooperation between the systems of public sector bodies is possible. However, making systems interoperable is not an easy task. From the government side, this means that the silos of individual departments need to be overcome to provide citizens and businesses with an easy user-journey. Overcoming silos also enables public sector bodies to learn from each other and will prevent unnecessary reinvention each time an online service is designed. The best practice below from Portugal shows an effective manner to make systems of public sector bodies interoperable. Overcoming silos also offers many benefits to users. Citizens and businesses are of course greatly supported by services that can be completed entirely online. However, services should not only be online but should be readily available through other means. Ideally users only need to visit one place online to obtain multiple sequential services. The Life Event approach of this report can be used to assess whether sequential services (i.e. services in the same Life Event) are provided by the same service provider. The percentage of services available online provided by one service provider can be used as an indication of the extent to which Scottish public sector bodies make their services easily discoverable. The Life Event Starting a *Small Claims Procedure* has only one main service provider (Scottish Courts & Tribunals), which makes the user-journey for citizens relatively easy. The services in the Life Events *Regular Business Operations* and *Losing and Finding a Job* also are relatively well aligned, indicating that business owners and people looking for a job can find most services they need via one central provider.

Learning from others: iAP Interoperability Platform (Portugal)

The iAP is a central, services-oriented platform providing shared tools that enables public organisations to connect their systems and to reuse and share existing methods. The iAP facilitates the exchange of data between different entities, ultimately leading to proactive and automated electronic services.

More information:
<https://www.iap.gov.pt/>

Other Life Events represent a more meandering user-journey, where multiple online service providers need to be visited. For the Family Life Event, only 45% of the services are provided by one service provider and for *Owning and Driving a Car* this number is just 40%. This dispersity of service providers makes it harder for users to find the services they are looking for.

Main Service Providers

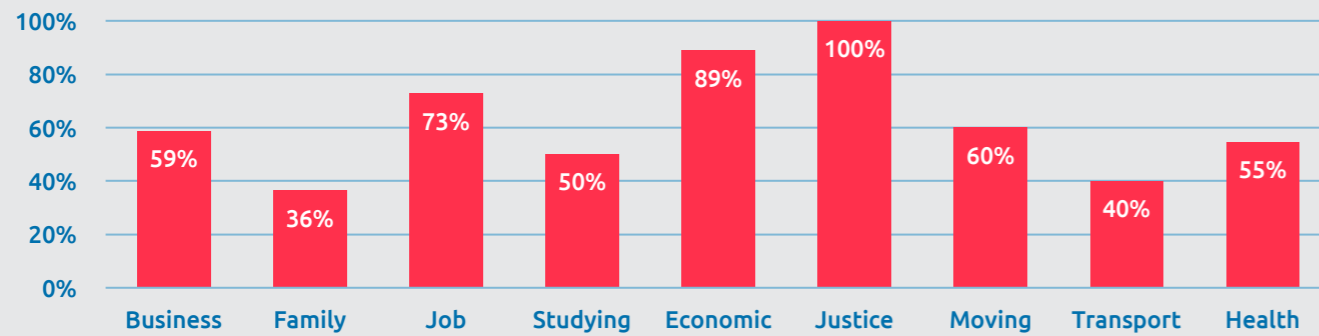


Figure 5 Percentage of services available online via main service provider



The Scottish eGovernment User Journey

Key Findings

- The Scottish eGovernment user journey is centered around the 8 out of 10 services that are fully online. Mobile friendliness, user support and a feedback-oriented government also fuel this journey and demonstrates the strength of the Scottish Approach to Service Design.
- Further implementation of Key Enablers (e.g. the Digital Identity programme and data sharing with Authentic Sources), as well as providing more procedural clarity is needed to strengthen the eGovernment user journey and limit discontinuities.
- National and regional public sector bodies seem to accommodate for a more end-to-end user journey than local public sector bodies.



Scottish citizens and entrepreneurs interact with their governments during different stages of a service process. Users generally follow comparable steps that shape their eGovernment user journey. The chapter links the scores for specific indicators to various steps in the end-to-end service process, enabling the detection of gaps in online service delivery processes and the overall user experience. For example, whenever a user cannot find the right service in the first place, it's likely that he or she will not be able to complete the online process.

A typical journey starts with the user finding the right service and relevant information about the service. After logging in and completing an online form, digital feedback and email will provide updates on the status of the application. More precisely, the user journey includes the following elements:

eGovernment in the right place: eGovernment services are provided by a multitude of administrations. Users expect them to be accessible through a few familiar, trusted and centralised portal websites.

Get informed online: citizens and businesses living in the digital world expect at least general information about public services online.

Learn how the services work: prospective users want to know what to expect from public administrations and what is expected from them before and during services.

Perform the service online: users want to be able to perform the service digitally, on mobile devices or on desktops, or not need to perform the service at all to get the result.

Rely on secure eGovernment: eGovernment users want to trust and depend on secure authentication methods

and the security of eGovernment websites in general. Having a national identifier (eID) that works across multiple administrations and services increases ease-of-use.

Call for support: users want to have a good availability of clear support functionalities. This gives citizens and businesses the confidence to perform the services correctly.

Save time and effort: eGovernment users would benefit from public administrations that put personal data already known by the government to use, reaping the benefits of the Once-Only Principle.

Understand how their data is used: citizens would like to understand how their personal data is used. The eGovernment transformation requires public administrations to implement data privacy and veracity within their organisations. Insight into data usage improves trust in public administrations and the value provided by eGovernment.

Provide feedback: users expect to provide feedback. Collecting feedback from the eGovernment users is essential to improve quality and usability.

Avoid paper where possible: users would benefit from having the option to centralise communication with public administrations in a single 'digital post-box'.

The picture below summarises the eGovernment user journey of citizens in Scotland. It illustrates the availability of various features (present for each out of 10 services). The following paragraphs describe these steps and findings in more detail, linking the findings to core parts of the Scottish Digital Strategy "**Realising Scotland's full potential in a Digital World**".

eGovernment User Journey

How eGovernment provides digital benefits across the full service experience

Find the right service

Users are very happy to find their service on a few familiar websites **10**

Get informed about the service online

Users are happy that information is digital **10**

Digitally fulfill the service

Users are glad to find most services online **08**

Users are also glad that most services are mobile friendly **10**



Save time and effort

Users are looking to save more time and effort, as more information can be prefilled **02**

Log in to eGovernment

Users are glad that they can use their single electronic identifier across administrations **04**

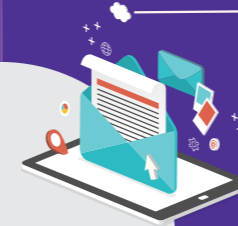
Know the service processes

Users are looking for more information on how services work **04**

Call for support

Users are happy that FAQs are available **08**

Users are looking for more advanced support e.g. demo's and chats **08**



Govern personal data

Users are glad that they can access their personal data **06**

Users are wishing they could get insight into how and why their data is used **02**



Improve eGovernment

Users are happy that administrations ask them for feedback **10**

Users are hoping websites would be more secure **05**



Score definition

Functionality available in **9** out of **10** relevant websites across the EU

Use a digital postbox

Users are looking to communicate with administrations through a digital postbox **03**



Figure 6 eGovernment User Journey of Scottish Citizens and Businesses

4.1. eGovernment Services Can be Found through a Selection of Centralised Websites

Portals enable citizens to find and complete multiple services in one place. The Scottish Government aims to “**extend the use of existing national assets such as mygov.scot**”. Almost all analysed services (98%) can be found via a selection of online government portals, such as www.mygov.scot and www.gov.uk. These one-stop-shops provide many benefits, for example services are easier to find when there is only a handful of websites to search through. Additionally, services are more recognisable.

4.2. Users Can Nearly Always Find General Information on Services Online

As noted in the Scottish Government’s Digital Strategy, Public Sector Bodies strive to introduce “**shared technology platforms, starting with common approaches to publishing information, applying for services, and making/receiving payments**”. Related to this, an early stage of the user journey is about finding relevant information on the various services, schemes and arrangements. In nearly all instances (99%), information about services is published online. This information helps users know whether they are eligible and which criteria they need to meet in order to obtain the service. Providing basic information on services digitally is the first step to bring the potential value eGovernment holds to fruition. Even for services that cannot yet be applied for online, information provision on the offline procedures is helpful.

4.3. Online Services are Becoming the Status Quo

The same “**shared technology platforms**” are helpful when developing digital services, which meet the “**Digital First Service Standard**” and “**Scottish Approach to Service Design**”. For 8 out of 10 services under evaluation (81%), users were able to complete the entire service online. A benefit of fully online services is that they are available anytime and anywhere, improving flexibility and user satisfaction. The level of online availability of services is relatively similar across Life Events, though it is especially well developed for services related to Justice, Business Start-Up and Studying, but less for Moving and Family related services (as well as Health). In combination with the earlier discussed availability of online information and discoverability of services via a portal, the Online Availability indicator reaches a score of 86%. This average sits at 89% for foreign citizens and businesses.

Promisingly, 98% of the websites evaluated passed the mobile friendliness tests. Thus, public sector web content is not only readable on desktop devices, but also on smartphones and tablets. This elevates the user friendliness and overall experience of eGovernment. It accommodates the growing group of users that prefer to have the government at their fingertips via their mobile phones.

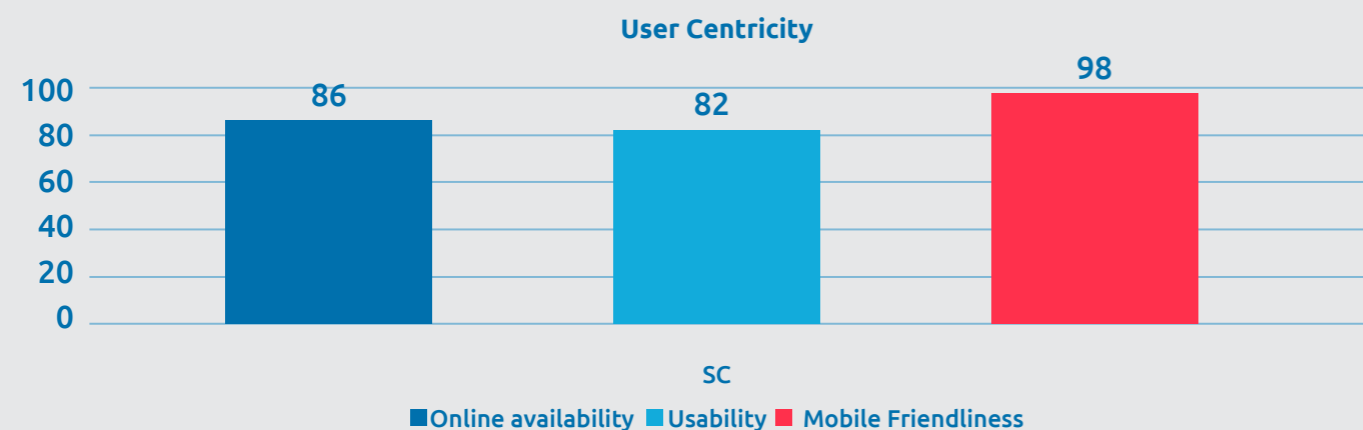


Figure 7 User Centricity indicators (Usability discussed under support functionalities)

4.4. Time to Boost Procedural Clarity

Again, a common and standardised approach of “**shared technology platforms**” would be valuable when managing the expectations of users and getting procedural transparency in place. The Scotland Government scores visibly lower than the Nordics for the Transparency of Service Delivery indicator and slightly lower than the United Kingdom. Like other countries, Scotland could specify in more detail what users can expect when starting and completing an online procedure.

When looking at the specific sub-items that construct the Transparency of Service Delivery indicator, it becomes

apparent that for 79% of the services, users receive a delivery notice upon completion. This positively affects users, as they know their application has been successfully submitted and is being processed. However, procedural clarity is often missing in terms of service timelines. Just a quarter of the services lists information on the duration of the service process (24%) and one third of the cases a maximum time limit is given for the administration to deliver the service (37%). By adding these and other process related transparency measures in a structured (and standardised manner), users are better guided throughout the different steps within a service process and know what to expect by when. This may also increase the overall service completion rates in the end.

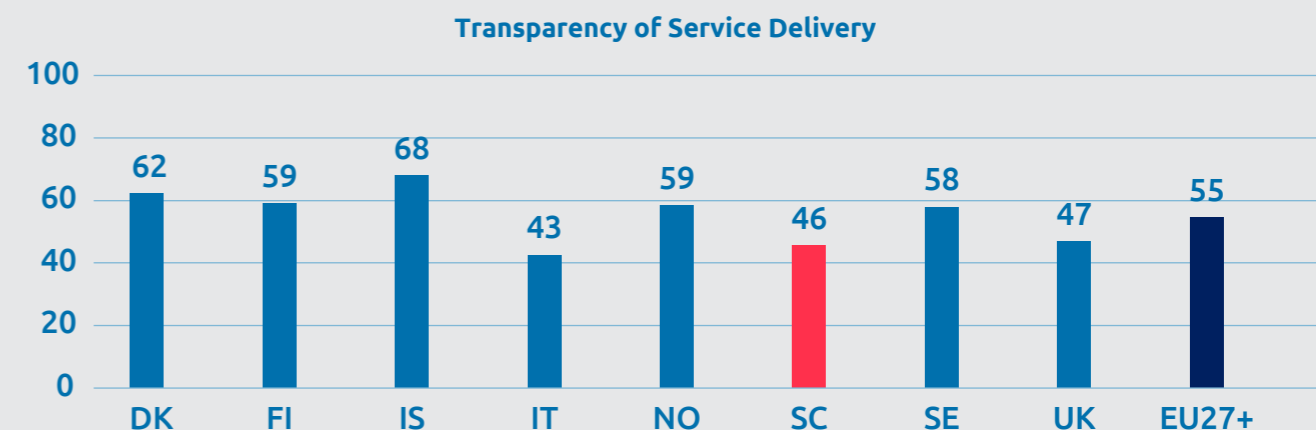


Figure 8 Transparency of Service Delivery indicator scores

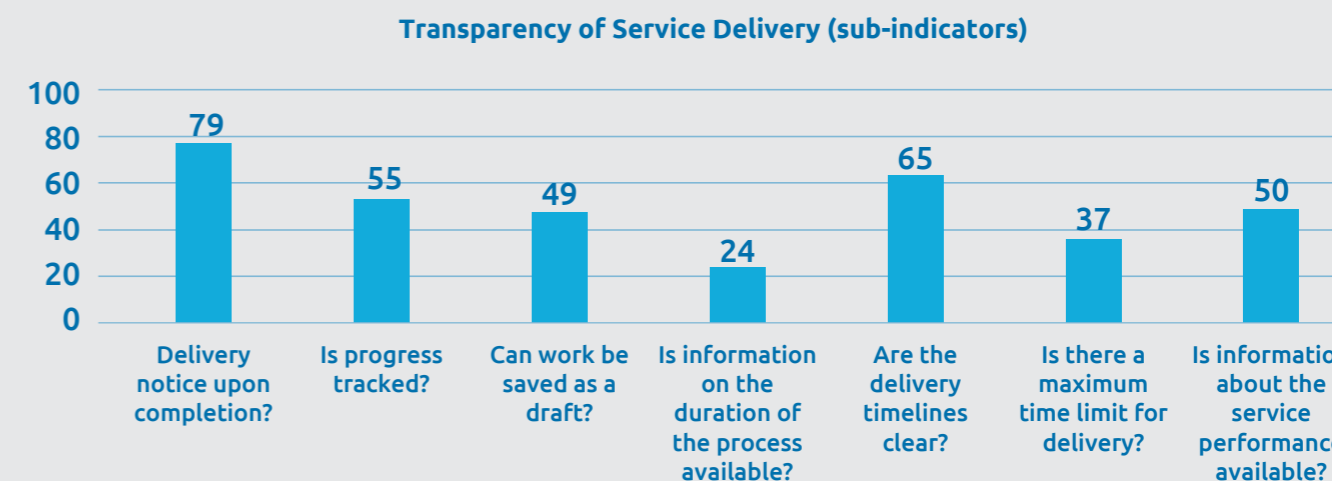


Figure 9 Transparency of Service Delivery sub-indicator scores

4.5. Digital Security is Ahead but not on the Required Level Yet

Cybersecurity is a cornerstone of today's economy and society. For Scottish public sector bodies, it's equally important to **"ensure that security issues are built into the design of Digital Public Services and assessed, at each stage, as part of the Digital First Standard"**. Focus here has paid off. Although higher levels of security can be reached, Scottish citizens are more secure in the eGovernment services than in the EU27+ countries. Still, the digital security of individual services can often be below par. Remaining website vulnerabilities and risks need to be mitigated to prevent fraud, leaks of personal information and to improve trust in eGovernment. More precisely, we assessed the implementation of 14 modern internet standards, using two tools: internet.nl and the Mozilla Observatory which can prevent vulnerabilities. The Internet.nl assessment tests 3 items (IPv6, DNSSEC and HTTPS), the Mozilla Observatory tests 11 items (Content Security Policy, Cookies, Cross-Origin Resource Sharing, HTTP Public Key Pinning, HTTP Strict Transport Security, Redirection, Referrer Policy, Subresource Integrity, X-Content-Type-Options, X-Frame-Options, X-XSS-Protection). First, we look at the percentage of websites

that meet these 14 criteria separately. In other words, what percentage of websites passed a test like the IPv6? Overall, implementation of most modern standards is 20% higher than in the EU27+ countries. Performance is particularly well for the HTTP Public Key Pinning test (which helps to decrease the risk of interrupted communications with forged certificates), Referrer Policy test (which helps to protect the privacy of users) and Cross-Origin Resource Sharing test (which helps to prevent foreign websites of reading website content and accessing private user information). On the contrary, main areas of improvement are in the implementation of DNSSEC (which helps ensure that users are connected to the intended website) and HTTPS (which helps ensure that the connection between the user and the website itself is secure).

Second, we look at the evaluation of individual websites. In other words, how many individual websites meet how many tests? On a positive note, none of the evaluated websites in the Scottish Life Events are open to all vulnerabilities (failing all tests), which happens regularly in the EU27+. Nevertheless, the best performing Scottish websites still face some vulnerabilities. These websites lack the implementation of only some of the tested standards, often being the

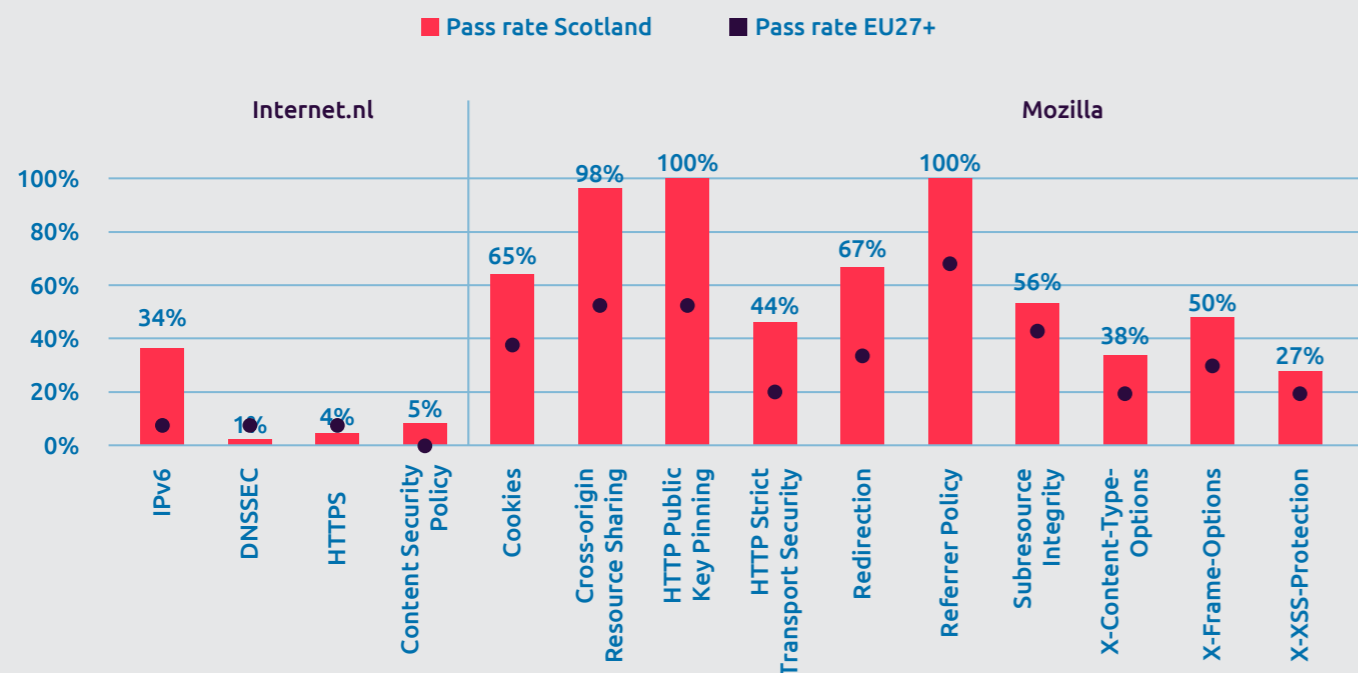


Figure 10 Cybersecurity pass rates per test

⁸The test can be found at: <https://internet.nl/>.

⁹The test can be found at: <https://observatory.mozilla.org/>.

Number of tests failed

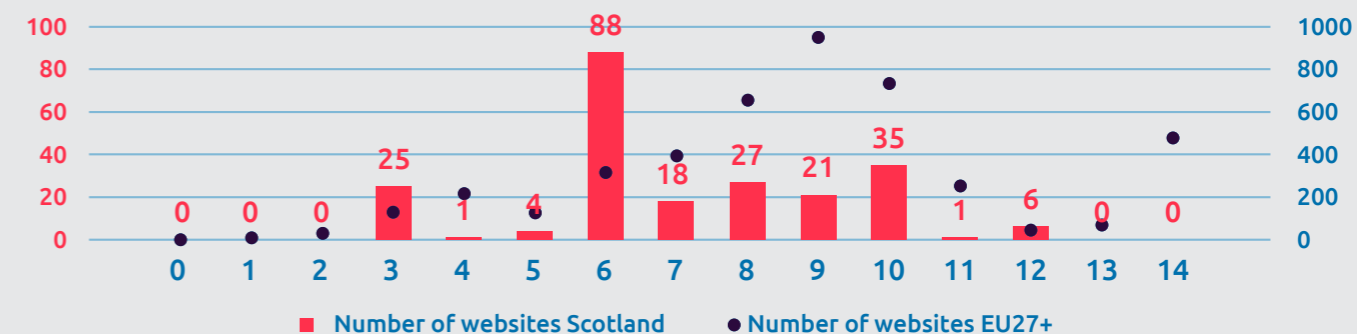


Figure 11 Cybersecurity tests failed per website

DNSSEC and HTTPS (as explained above), as well as Content Security Policies (which helps mitigate attacks like cross-site scripting). It should be noted that in some rare cases there are alternative measures to prevent such attacks, meaning that the failed tests are not directly pointing at an actual vulnerability. The results show in any case that further implementation of a security by design approach across all public sector bodies is needed to ensure sufficient security levels for the years to come. Extensive knowledge sharing and implementing proven best practices also serves this purpose.

These security efforts are also of importance in relation to national eID programs. Secure and trustworthy authentication of citizens and businesses is a cornerstone in eGovernment and national eID systems are an optimal solution to provide a high level of security. The Scottish Government wants to **"work with stakeholders, privacy interests and members of the public to develop a robust, secure and trustworthy mechanism by which an individual**

member of the public can demonstrate their identity online". Scotland (like the United Kingdom and Ireland) underperforms on eID implementation when compared to the EU27+ average. With a fully country-wide accepted and implemented eID, Scottish citizens would be able to authenticate online in a safe manner. At the moment, only 4 out of 10 services are operable with an interorganisational online identifier. National eIDs, such as the Digital Identity Scotland (DIS) programme, allow users to easily perform services across institutions, and they allow governments to concentrate their efforts in securing the authentication and improve the ability to share data amongst institutions. Higher adoption by public sector bodies would be beneficial. It would allow users from outside the country to apply for Scottish services (currently the cross-border eID uptake is comparable to the uptake of domestic eIDs). Moreover, standardised identification would more easily allow for transferring and integrating data that is stored in someone's personal eID profile.

4.6. More Time Could be Saved by Pre-filling Information

Launching a “registers platform to host registers of information that will be held once and offer single sources of secure and accurate information” would enable more optimal re-use of available data. Pre-filling online service forms with user data help users to complete their applications faster and more accurately. Re-typing one’s name, address, date of birth, etc. slows down service processes and lowers user satisfaction if these details are already provided before.

The Authentic Sources assessment shows that only 16% of the relevant online forms pre-fill information already known by the Scottish Government. Services delivered by Scottish public sector bodies less often use pre-populated personal information than the rest of Europe. Data could be used more efficiently to lower administrative burden and ease the user journey.

In general, cross-organisation data sharing transcends silos and can improve the quality of services. As outlined in the Scottish Digital Strategy,

“better data sharing can generate new insights, stimulate new ideas and deliver potential savings to the public sector”. Reusing data also helps governments to provide services proactively instead of reactively. By reusing data, users could be offered a service whenever their personal circumstances change, without them having to initiate a service process (e.g. a user automatically receives tax benefits because the employment agency shares data with the tax authority when someone has a lowered income for a certain period). In Europe, numerous initiatives of interoperable use of data in eGovernment are already underway, such as:

1. Finland and Estonia started the Nordic Institute for Interoperability Solutions (NIIS), an interoperable system used for cross-border sharing of health data.¹⁰
2. The Portuguese IAP is a central, services-oriented platform providing shared tools that enable crosswise digital services and the exchange of data between different entities, ultimately leading to automated electronic services. It also consists a payment platform and a SMS gateway for communication between government and citizens.¹¹

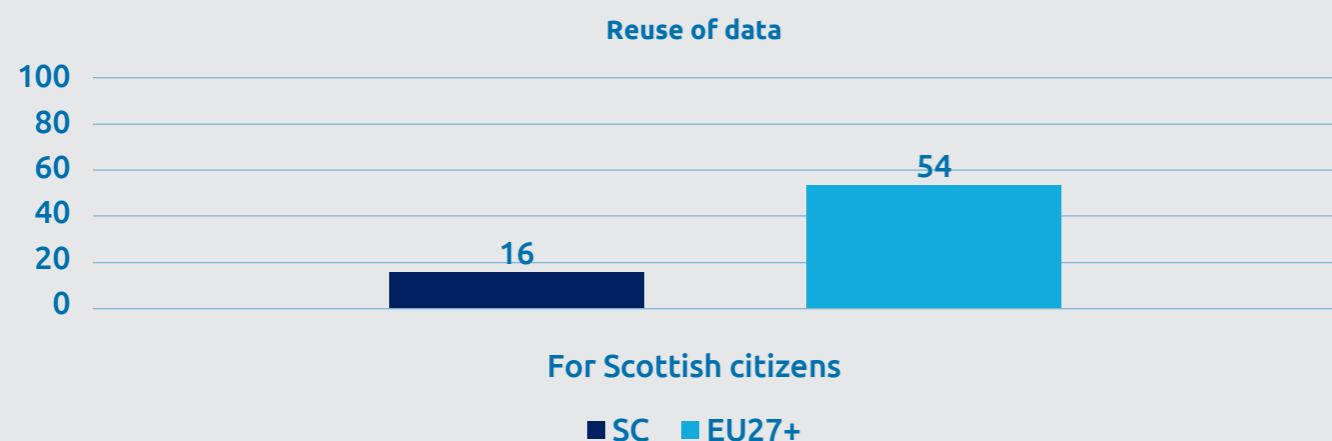


Figure 12 Reuse of data (Authentic Source indicator) scores

¹⁰Available at: <https://www.niis.org/>.

¹¹Available at: <https://www.iap.gov.pt/>.

4.7. Lending Users a Hand with Online Support Functionalities

Public sector bodies try to ensure that all digital services developed meet the “Digital First Standard” and the “Scottish Approach to Service Design”. Our analysis shows that this ambition is realised in certain measured areas, although user support flourishes even more in other parts of Europe. For example, eGovernment users can rely on basic support functionalities like FAQs for 8 out of 10 services. These relatively simple solutions can help eGovernment users on their way. The digital nature of eGovernment services opens the possibility to implement smarter and more specific support functionalities, such as live-chat support and examples on how to navigate and operate within the digital environment. These smarter support functions are also available on 8 out of 10 governmental portals. Providing sufficient digital support is essential to replace and possibly surpass the support that is available with traditional person-to-person services. Support is especially important to ensure

the inclusivity of eGovernment, making sure that less digitally skilled citizens can perform the services with confidence and on their own.

The average for the Scottish Usability indicator stands at 82%. For cross-border users that apply for Scottish services the score is slightly higher (87%). This indicates the international nature of the Scottish economy and government. At the same time, the availability of these support features reaches higher levels in other European countries. Greater usage of discussion platforms and social media channels for user interaction would be one of the focus areas. Taking these scores into account, Scotland finds itself on a similar level of user support (referred to as usability) as the United Kingdom, but lower than some of its peers across Europe. Although it may take some time, the Scottish Approach to Service Design¹² is expected to transform the user experience and overcome organisational boundaries to uplift this eGovernment dimension.

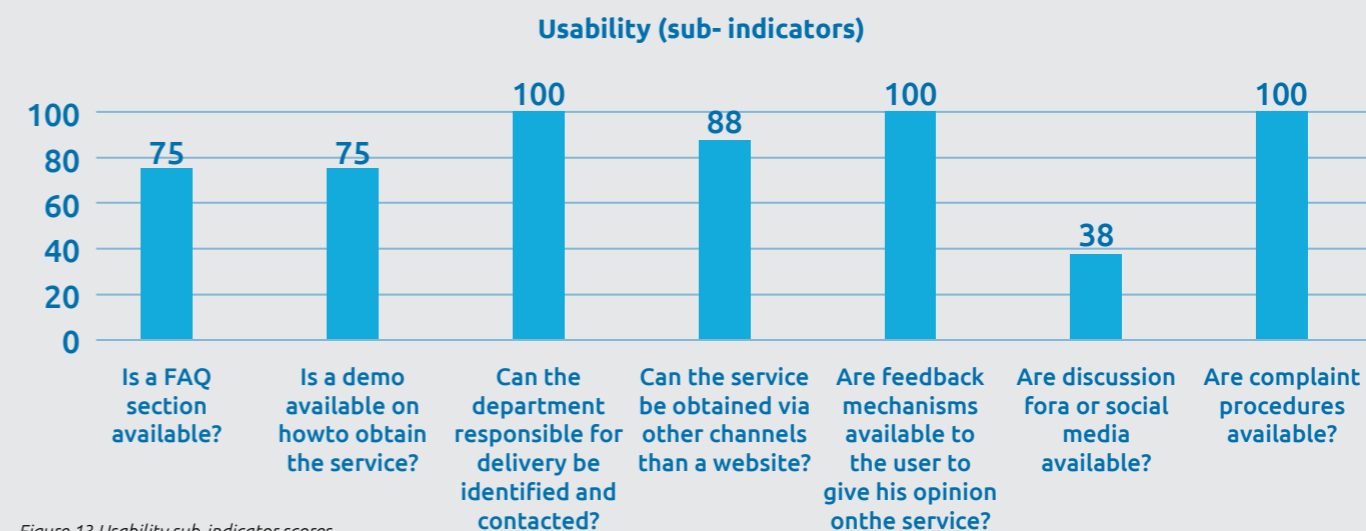


Figure 13 Usability sub-indicator scores

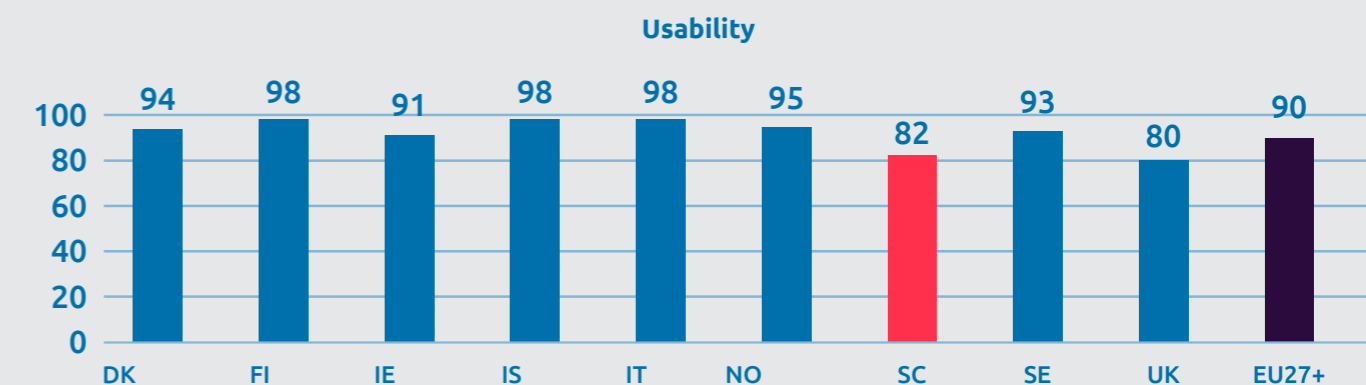


Figure 14 Usability indicator scores

¹²Available at: <https://www.gov.scot/publications/the-scottish-approach-to-service-design/>.

4.8. Personal Data Usage and Access Leave Room for Improvement

As reflected in the Scottish Digital Strategy, Scotland is working on engaging with the public to **“build an understanding of how their data is being used for the public benefit, and of the arrangements in place to guarantee the security of their data”**. In the light of these initiatives, it is apparent that citizens and businesses have access to their data kept by public administrations, however obtaining insight into how their data is used is rare.

This benchmark evaluates several aspects of personal data: the level of insight into one’s personal data, the ability to alter it, and the level to which information on the usage of personal data is available. The findings indicate that additional efforts are needed to meet user demands in this area. At the moment, only 6 out of 10 administrations enable users to see what personal information is held by a public sector body. Just 2 out of 10 public organisations inform users adequately about when, why and by whom personal data was used. Governments and citizens both reap the benefits when transparency on personal data usage is improved, as it builds trust and allows citizens to hold their government accountable. Introduction of a national eID solution could facilitate this process.

4.9. Administrations are Open to Feedback and Acceptation of Complaints

The Digital First Standard and Scottish Approach to Service Design focus on co-production and will ensure that **“digital public services will be designed with, and for, the people who use them”**. These underlying approaches are also reflected in the benchmark measurements. It stands out that Scottish users are welcomed to provide feedback and can lodge complaints regarding eGovernment. All administrations, implemented open feedback channels (100%). Filing a complaint is also possible throughout (100%). Being able to provide general feedback and lodge a formal complaint helps to improve the quality of eGovernment and makes users feel they are being heard.

Another, more generic, way to enhance digital services is by involving citizens in policy making processes. Our findings show that participation in policy making processes could be further increased. Although processes for requesting additional information are clearly presented, only half of the websites offer the opportunity to file a complaint when the information request is inadequately addressed. Similar room for improvement counts for information on key policy making processes and how citizens can contribute to those processes (e.g. someone who is willing to have a say in how local authorities spend their budgets).

As a consequence of these policy information gaps, Scotland does not yet reach the same level of eGovernment as most of its European peers. The overarching Transparency of Public Organisations indicator sits higher elsewhere in Europe, especially in Finland and Norway. Making sure that existing participatory processes are well-known and clearly communicated may spur citizen engagement and fuel new initiatives as part of civil society.

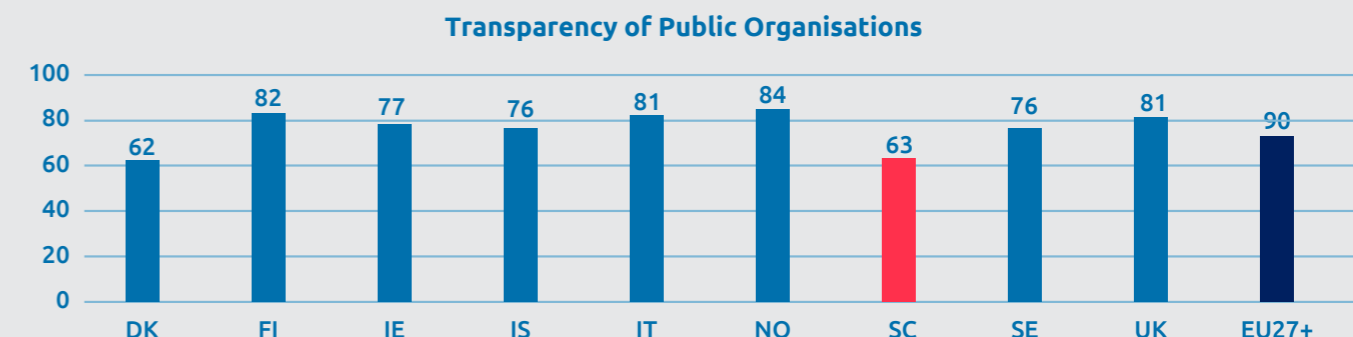


Figure 16 Transparency of Public Organisations sub-indicator scores

4.10. Making Digital Post Boxes Mainstream Saves Time and Paper

The Scottish Government prioritised the introduction of **“shared technology platforms as a core part of the process of public service reform”**. However, despite the focus on platforms Scottish citizens and businesses are still limited to how they communicate digitally with government organisations. Only 3 out of 10 government organisation (compared to 6 out of 10 in the EU27+) give users the option to receive government communications digitally only.

Offering paperless digital postal solutions adds clarity and makes it possible to interact with a service anywhere and anytime. This contributes to a better user experience and also has broader environmental and efficiency benefits.

As noted earlier for the areas of eIDs and Authentic Sources, the Scottish eGovernment could improve its uptake of Key Enablers. By doing so, users are able to: unlock services with a single government identifier, easily upload documentation needed to complete a service, only complement pre-filled forms and find all government correspondence via a single online solution. Key Enablers help to establish trustworthy online government services. Key Enablers are the building blocks for easy, safe and secure eGovernment.

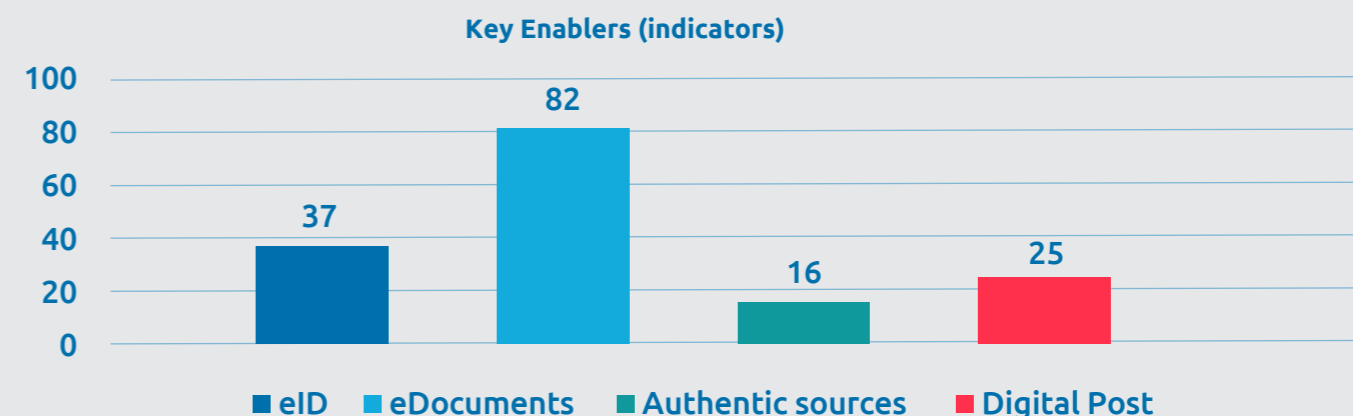


Figure 17 Key Enabler indicator scores

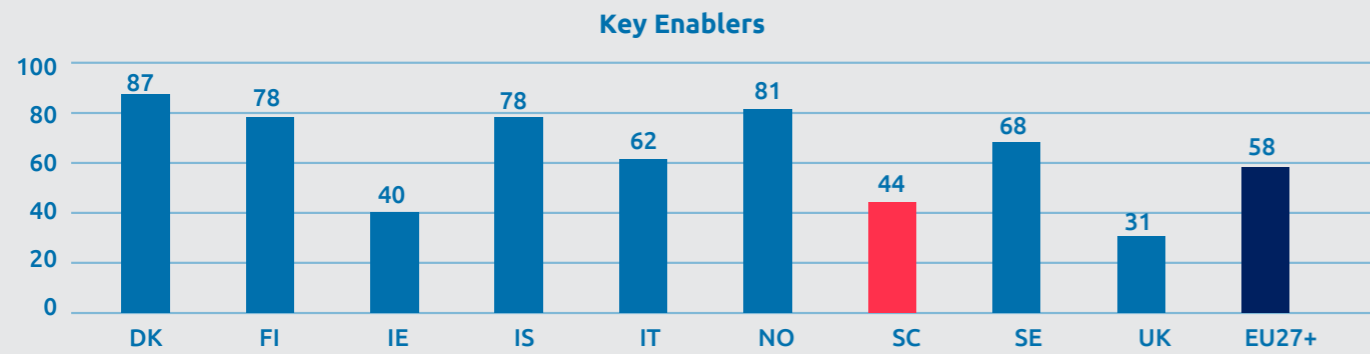


Figure 18 Key Enabler top-level benchmark scores

Do National and Regional Government Bodies Have an Advantage over Local Ones in Establishing More End-To-End User Journeys?

In general, national and regional government bodies, such as government departments and agencies, show higher levels of eGovernment performance than local government bodies. For example, more of their services are available online, more procedural transparency is given, and users can more often sign in with an eID solution. Therefore, it seems that national and regional Scottish administrations are better equipped to deliver the eGovernment components needed for citizens and businesses that complete their user journey.

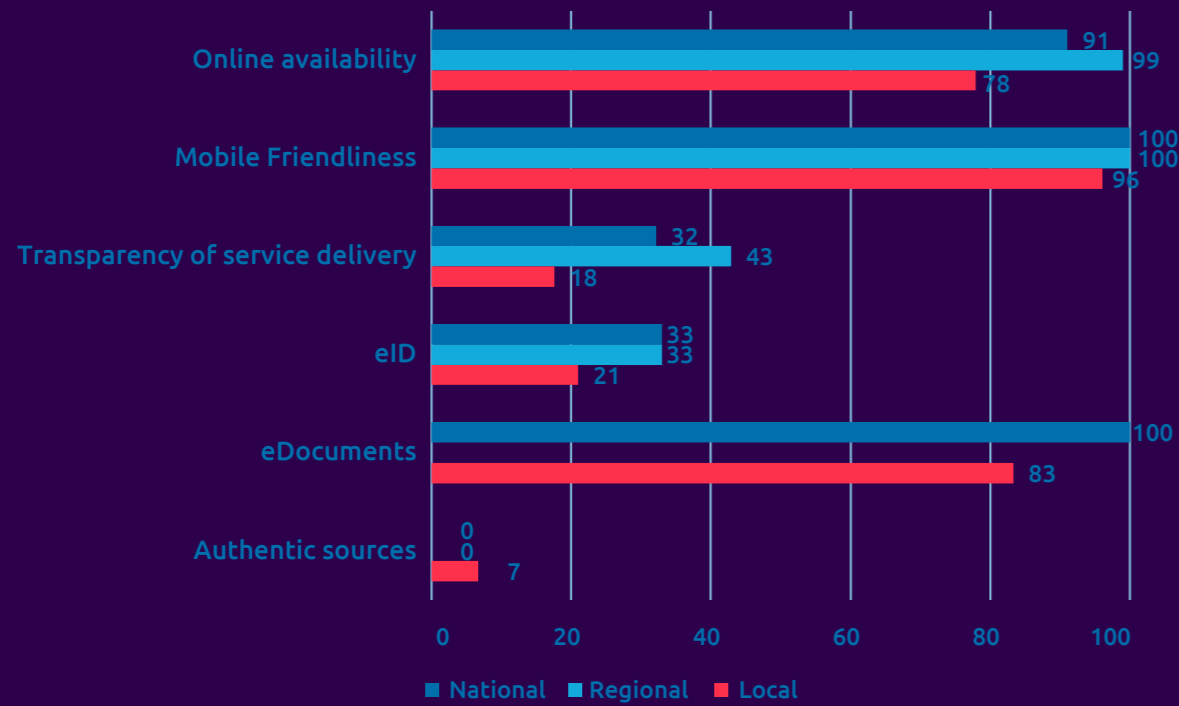


Figure 19 Key indicators compared across government levels



Recommendations

Citizens expect that their digital service experience will be seamless, smooth and personalised. In many transactional contexts, this need can be easily met, when the ask is simple and the outcome predictable.

Public services are complex; driven by a common good, addressing diverse problems and needs, with high expectations of trust, transparency and accountability. Furthermore, major life events often require a response that transcends organisational boundaries and their different systems, cultures and working practices. This is a challenge facing public services across Europe.

The COVID-19 pandemic has highlighted the critical potency of digital to create resilient public services; in the event of social-distancing and limited access to government buildings. Reliable and user-centric online services have become more vital than ever before.

This eGovernment Benchmark assessment was performed against this backdrop. Our objective was to evidence the effectiveness of Scottish Government's Digital Strategy, "Realising Scotland's full potential in a Digital World", through a comparative analysis with the EU27+.



The results of the research reveal a mixed picture. It signals positive accomplishments of Scotland's journey to realise true digital government, as well as some important learnings to take forward.

Overall, Scotland scores above the EU27+ and UK averages. The number of services on offer online is high and they are mobile-friendly. Services to businesses score higher marks than citizen services. Central portals direct users to relevant information and services and offer appropriate support, help and feedback options. Scottish Government has established sound principles to transform the user experience, putting people at the heart of its strategy. Like the approaches in other European countries, the Scottish approach to Service Design fulfils a unifying role. In addition to the user experience, Scottish Government's security scores are good. Having adopted most modern security standards, Scotland's score is 20% higher than the EU27+ average. However, security must be a relentless and on-going investment. Just like the eGovernment leaders, business Life Events are particularly well digitized. Furthermore, when it comes to justice, an area that other European countries find difficult, Scotland is ahead with a streamlined digital user journey.

However, there is an opportunity to build a more coherent, uniform and joined-up eGovernment platform to benefit both users and public service providers. Our research identified that in the absence of a national eID solution, user credentials and basic information must be recreated for different Government bodies. Only 3% of digital public services in Scotland used pre-filled data versus 42% for the EU27+ average. As a result, Scotland's Key Enabler score is behind Europe (44% overall versus 58% for the EU27+). More broadly, digital services largely operate in silos, reflecting their organisational owners. This is heightened by the difference in digital service maturity between local and national Government, where councils achieve lower scores regarding the online availability of services and information (by 13 percentage points), transparency of service delivery (by 14 percentage points) and eID (by 12 percentage points).

Creating user-centric and seamless experience, requires a fundamental shift in design of digital services to overcome organisational boundaries. A closer look at our analysis of Life Events reveals that, with the exception of the Justice Life Event, the user experience is fragmented, delivered by a range of organisations. The digital experience mirrors the physical one. This is both frustrating for users, but also costly for Government. Overcoming this requires a collaboration across Government, motivated by a relentless focus on the end to end user journey. The challenge facing Scotland is not unique. In 2017, McKinsey assessed the Government sector as the lowest ranking industry in the US in terms of customer satisfaction, while also pointing out that citizens are nine times more likely to trust a government agency if they are satisfied with its service.¹³

Successful eGovernment strategies have focussed on shared digital asset as 'a platform' for developing seamless, personalised and efficient services. Various digital building blocks are an essential part of this, such as authentic sources and digital identity (eID). Both enablers are yet to be fully rolled out in Scotland. Authentic Sources constitute a building block that encompasses registers of personal and other data, and that would allow re-use of that data for other service processes, delivering on the principle of 'once-only registration'. Electronic identity (eID) enables the online authentication of individuals and businesses, boosting cross-border and national online services. eID is the pre-requisite for any form of personalisation, and it can reduce costs. In Estonia, where 98% of the population have an eID, digital signatures are reported to have saved 2% of GDP annually.¹⁴

¹³Improving the customer experience to achieve government-agency goals, McKinsey 2017.

¹⁴Available at: <https://e-estonia.com/#>.

These key enablers will not, in their own right, transform the user experience. Critically, transformation comes from designing services through the lens of their users, with Government organisations working together, breaking down barriers, eliminating silos and creating simplicity for citizens and businesses. This is a cultural transformation.

Shared digital platforms are a key foundation to enable Scottish Government to create brilliant, seamless, user-friendly services. Two of the fastest improving countries (Luxembourg and Latvia) provide examples of this type of development. Latvia implemented 'eParaksts mobile', which is a modern and secure tool for smartphone users to certify their e-identity with an e-signature when interacting with Government services. Luxembourg fully embraced the eIDAS Directive enabling people, businesses and public administrations to carry out convenient, secure and legally valid electronic transactions within Luxembourg, as well as across borders. Hungary also provides an inspiring example of a joined-up national digital platform for all local government services.

Re-use of data, coupled with cross-entity process automation and pro-active service delivery is achieving marked prevalence in the Nordics; improving outcomes for vulnerable citizens and reducing costs. To achieve this goal, there must be absolute transparency in the use of personal data, in order to sustain citizen trust. In leading eGovernment nations, the 'ownership' of personal data rests with its citizens who determine which public entity can access it and for what purpose.

Effective data governance is imperative for Governments that aim to join-up services and become data driven. It can help to extract value from data: enabling greater data access, sharing and integration at the organisational level and beyond, increasing operational efficiency and creating greater accountability.¹⁵ Capgemini studied the economic value of open data for the European Commission. This analysis demonstrated the growing market for open data, creating new jobs while also achieving cost efficiencies and productivity gains.¹⁶ Often, the ability to fully derive value from public sector data is constrained by competing priorities and the lack of an overarching strategy. This is usually the result of: a lack of clear mandate to use and release public sector data; existing barriers that inhibit the sharing of data

across different agencies/jurisdictions; insufficient skills and organisational arrangements; an absence of a 'data-culture' that supports the publication of data to stimulate economic activity.

Data sharing can improve service delivery, providing better services for citizens and greater efficiency for Government. Furthermore, data provides the base for more effective Government, strengthening the evidence base for policy makers, informing public service reform and the focus for economic development.

Alongside the investment in digital services, Government must invest in the digital skills of the population. One of the early initiatives that Estonia undertook was the establishment of a digital skills programme in schools. This is a sentiment echoed in the recent European Commission FutureGov study that emphasised digital skills as the essential "new literacies" for the future. Cyber and data skills are needed to enable citizens to be successful and safe in a digital economy. Universal access to core digital training is essential to enable an inclusive digital society.

Technology will continue to advance and develop. The role of government is less about anticipating the next digital development, rather it is to embrace and embed the change that accompanies it. The digital transformation of government is realised through a combination of building digital capabilities, effective digital leadership, and creating a digitally literate population. The World Bank indicates that while nobody can predict the full impact of technological changes, "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".¹⁸

¹⁵Available at: <https://www.oecd-ilibrary.org/sites/9cada708-en/index.html?itemId=/content/component/9cada708-en>.

¹⁶The Economic Value of Open Data, Capgemini for the European Commission, December 2019. Available at: <https://www.europeandataportal.eu/en/highlights/economic-benefits-open-data>.

¹⁷Available at: https://publications.jrc.ec.europa.eu/repository/bitstream/JRC115008/futurgov_web_lq_v2.pdf.

¹⁸Available at: <https://www.worldbank.org/en/publication/wdr2016>.

Annex A: methodological notes

Representation and calculation of scores

Since the 2019 eGovernment Benchmark edition official scores are rounded to the first decimal. This is how they are displayed in the source data file. Due to aesthetic and legibility considerations, the scores in the Insight report, Background report and the Factsheets are frequently displayed or mentioned rounded to the whole number, with any additional calculation or transformation being based on the full scores.

Rounding Biennial averages

The biennial averages have been calculated based on the rounded numbers historically. As they are the most prominent result, summarising eGovernment efforts across all domains, they are currently also calculated as the average of the rounded Life Event scores per indicator to ensure comparability.

Mobile friendliness & Website Security

Calculation method

The Mobile friendliness indicator has been introduced in the eGovernment Benchmark 2016. Initially, the score was calculated on Life Event level, with the score indicating the percentage of included URLs which classified as “Mobile friendly”. Since 2017, Mobile friendliness scores are calculated in a manner similar to other service-level indicators. In this new methodology the calculation of the scores depends on whether the service is national or local/ regional. A national service is deemed Mobile friendly if any included URL passes the test, where local and regional services’ score according to the pass rate of the included URLs. Subsequently, the relevant service scores are averaged into the Life Event Mobile friendliness score.

Addition of the Google Mobile friendliness test

The tooling implemented to classify the URLs has changed over the years. For the 2017 eGovernment Benchmark, URLs were evaluated using the Google Mobile friendliness test. As this service limited the automated processing of URLs, the Rankwatch tool became the default. Due to methodological differences URLs that were assessed as mobile friendly using Google were not mobile friendly based on Rankwatch. This subsequently can impact the Life Event scores negatively compared to the last evaluation. Subsequently, we implemented the Google Mobile friendliness test to re-evaluate the URLs where Life Events within countries had gone down. In several instances, the results of the assessment were still impacted negatively. Multiple websites had implemented temporary instances on the public websites, e.g. satisfaction questionnaire pop-ups, that impacted the results, these portals were checked manually and set to Mobile friendly when relevant. In such cases, the websites were tested manually and corrected where relevant.

Scoring website security

Last year, the eGovernment Benchmark included the results of the first security pilot tests on the websites included in the Mystery Shopping. This pilot has been repeated for the websites in the assessment this year. All URLs are run through two publicly available security testing tools: one developed by the Dutch national government; internet.nl²⁰, and one developed by Mozilla; the Observatory²¹. These tools both test several complementary items, which are considered basic cybersecurity hygiene; these items are further explained in Figure A.1. The results of the tested items are combined on two axes in the Insight report, on the individual tests and on the results per URL. For the individual tests, the number of URLs that pass that test represent the Pass rate. For the individual URL, the number of tests the URL fails represent the Number of Security tests failed.

¹⁹Rankwatch Mobile friendly check, available at:

²⁰The tool is an initiative of the Dutch Internet Standards Platform: www.internet.nl

²¹Mozilla security Tool: <https://observatory.mozilla.org/>

The Security tests explained: both tools test a number of items considered the “basic hygiene” of websites. The items that are assessed by each tool and a short explanation per item are provided below.

Internet.nl tests

IPv6	DNSSEC	IPv6
Test for modern internet standard (using IPv6 instead of IPv4)	Test for ensuring no manipulation of translation between domain name and IP-address	Test for preventing third parties from reading or changing content send between user and website

Mozilla Observatory tests

Content security policy Can prevent a wide range of cross-site scripting and clickjacking attacks	Cross-origin resource sharing Prevents foreign sites to read site’s content and access private user information	Redirection Automatically redirect users from HTTP to HTTPS
Subresource integrity protects against attackers modifying the contents of JavaScript libraries	X-frame options prevents attacks that allows malicious sites to trick users into clicking links on your site	X-xss protection stops pages from loading when they detect reflected cross-site scripting (XSS) attacks
Cookies minimize damage from cross-site scripting (XSS) vulnerabilities	HTTP Strict transport security notifies user agents to only connect to a given site over HTTPS	X-content type options prevents loading scripts and stylesheets unless the server indicates the correct MIME type
Referrer Policy minimizing privacy risks	HTTP public key pinning Protecting against unauthorized issuance of certificates	

Figure A.1: Details of the items in the cybersecurity tests of Internet.nl and Mozilla

eGovernment for Care Services

The following services were under evaluation for this pilot:

- 1.1 Obtain information on providing care to a relative or friend
- 1.2 Get in touch with formal support
- 1.3 Get in touch with carer support groups
- 1.4 Register for a carer training
- 2.1 Register formally as a carer
- 2.2 Request a short break
- 2.3 Get help in creating a care plan
- 3.1 Obtain general information on support for the elderly
- 3.2 Obtain information on care homes
- 3.3 Obtain information about specific care homes
- 4.1 Get possible care home needs assessed

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