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## **E-government services in Europe – a comparison of seven countries**

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Vodafone Institute for Society and Communications

ESTONIA | GERMANY | NETHERLANDS | AUSTRIA | SPAIN | TURKEY | UNITED KINGDOM



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# Summary

Over recent years most European countries have gone to considerable effort to offer their citizens as comprehensive an e-government infrastructure as possible, with the aim of efficiently structuring and managing contact with public authorities. However, the divergent framework conditions mean that e-government solutions have developed differently in the individual countries, resulting in a heterogeneous e-government landscape across Europe. This analysis seeks to establish an overview of the state of development of e-government in selected European countries, predominantly taking a citizen's-eye view of e-government offerings. Individual e-government services were used to establish the status quo and Internet research was undertaken to assess the availability of these services in the selected countries. This showed that there are significant differences across Europe in terms of the e-government services provided. Whilst countries such as Estonia or Austria provide a relatively broad range of e-government services for their citizens, there is definite room for improvement in other countries such as Germany, the Netherlands or the United Kingdom.

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# 01 | Introduction

Information and communication technologies (ICT) are increasingly changing the way in which we manage everyday tasks. They help to speed up everyday processes and structure them effectively. The public sector, too, takes advantage of ICT to implement processes more efficiently, which results in improved cost-effectiveness. This relates not only to internal processes at public authorities, but also communication and interaction with citizens and companies in the private economy. The use of ICT in the public sector is referred to as e-government.

E-government infrastructures and e-government services have developed very differently in the various member states of the European Union (EU). The reasons for this include legal and organisational framework conditions as well as differences in the weight – and consequently the associated funding – ascribed to the topic of e-government and the development of corresponding services. These varying circumstances in the individual EU member states have produced a somewhat heterogeneous European e-government landscape. Whilst some countries such as Belgium, Estonia and Austria focused a great deal of attention on the topic of e-government from an early stage and now have a relatively extensive range of e-government services, other EU member states have some catching up to do. What is common to all countries, however, is that existing e-government solutions need to be consistently developed further and adapted to changing technical and legal circumstances.

It is often an interesting and useful exercise to take a broader view of the development of new e-government solutions and the improvement of existing ones. Successful e-government concepts are frequently not limited to a single country, but may also work in other countries under different framework conditions. This study therefore takes as its starting point as far-reaching an overview as possible of the current state of development and the existing e-government offerings in various countries. Further, a direct comparison of existing e-government solutions may serve as an incentive to countries to improve and develop their own offerings.

The importance of a direct comparison of different countries' e-government solutions has also been recognised by the European Commission, which has been evaluating and publishing the availability, quality and acceptance of e-government solutions in the individual member states of the European Union since 2001 as part of its annual e-government benchmarks.<sup>[1]</sup> Up to 2012 the availability of e-government solutions in the individual member states was systematically analysed and a ranking of the countries examined was produced based on the results obtained. This ranking essentially reflected the state of development of e-government in the countries analysed.

The strategy for the evaluation of e-government solutions in Europe has changed since 2013. The aim is no longer to create a direct comparison of the individual countries in the form of a ranking, but rather to paint a general picture of the state of e-government in Europe and to identify room for improvement at the European level. This shift in methodology means that the e-government benchmarks published by the European Commission no longer permit a direct comparison of individual countries. However, in individual cases such a comparison can certainly be expedient and helpful. The aim of this study is therefore to permit such a comparison by eliciting the availability of selected e-government services in various countries of the European Union. Attention is focused primarily on services that citizens consider to be particularly important. Consequently, this analysis is intended as a meaningful addition to evaluations and reports on the availability of e-government in Europe and the focused development of e-government in Europe.

## 02 | Analysis

### eID

Is there a national eID solution in place that permits citizens to identify themselves uniquely to e-government services?

### Qualified electronic signature

In addition to the eID, is there a signature solution that citizens can use during e-government procedures to generate qualified electronic signatures?

### Tax system

Are there e-government services in place that enable citizens to handle tax-related procedures online (tax return etc.)?

### Births

Are there e-government services in place that support parents in registering the birth of their child?

### Social security benefits

Are there e-government services in place that support citizens in claiming social security benefits (unemployment benefit etc.)?

### Public certificates

Are there e-government services in place that enable citizens to request copies or duplicates of registry office certificates (birth, marriage, death certificates)?

### Residence and relocation

Are there e-government services in place that support citizens in matters relating to residence and relocation?

### Setting up a company

Are there e-government services in place that support citizens to set up a company electronically?

	Estonia	Germany	Netherlands	Austria	Spain	Turkey	United Kingdom
eID	YES	YES	YES	YES	YES	YES	YES
Qualified electronic signature	YES	YES	NO	YES	YES	YES	NO
Tax system	YES	YES	YES	YES	YES	YES	YES
Births	YES	NO	NO	Service not necessary	NO	NO	NO
Social security benefits	YES	YES	NO	YES	YES	YES	YES
Public certificates	YES	NO	NO	YES	YES	NO	YES
Residence and relocation	YES	NO	NO	YES	YES	YES	NO
Setting up a company	YES	NO	NO	YES	YES	NO	YES

In the course of this study the availability of the services described at section 3.2 in the countries described at section 3.1 was analysed. The result of this analysis is summarised in a simplified form in the following tables. To produce as meaningful a result as possible, the following tables only include yes/no responses (with a few exceptions). A more detailed explanation and interpretation of the analysis results obtained can be found at section 4.

# 03 | Methodology

The aim of this analysis was to compare individual countries in relation to the availability of individual selected e-government services for citizens. In contrast to the current version of the European Commission's e-government benchmarks, the aim of this is to permit a direct comparison and a ranking of individual member states of the European Union.

However, a fair comparison of different countries is difficult. One reason for this is the fact that the e-government services in the different countries may be subject to different requirements due to different statutory and organisational framework conditions. This subsequently results in different priorities in the implementation of e-government services, which makes it difficult to compare the individual services fairly.

An example of this is the address registration system. In most countries citizens are obliged to notify the authorities of their current address. In these countries it makes absolute sense to offer an electronic service for registering a new residential address to save citizens a physical visit to the public authority. The United Kingdom is an exception in this respect as, unlike most other European countries, there is no obligation for citizens to register their residential address. This means that there is no need for such a service for electronic registration of a new address, which makes it difficult to produce a fair international comparison of the availability of such a service. Similar examples can be found for a range of other e-government services.

Despite the problems resulting from the circumstances described, this analysis nonetheless seeks to achieve a fair comparison of individual countries. An appropriate degree of fairness is intended to be achieved by a suitable selection of comparable countries as well as a selection of services that enable a fair comparison. The following sub-sections briefly discuss the selection of the countries and e-government services as well as the information sources used for the final comparison.

## 3.1. Selection of countries

The selection of the European countries considered for the comparison was originally based on a long list produced by the client of this study – the Vodafone Institute for Society and Communications. Based on these specifications, a list of countries that enable fair and thus meaningful results was drawn up. Specifically, this study elicited the availability of e-government services in **Estonia, Germany, Netherlands, Austria, Spain, Turkey** and **United Kingdom**.

## 3.2. Selection of services

The selection of services to be compared turned out to be a particular challenge due to the issues set out above. The aim was first to consider services that were highly specific in order to arrive at the most meaningful results possible. At the same time the services under comparison had to be selected to ensure a fair comparison between countries that have substantially different requirements regarding these services. Finally, services that are important from a citizens' perspective and can make their dealings with public authorities significantly easier were to be selected.

In order to satisfy all these requirements, the first step was to draw up a set of common e-government services based on a list of what are known as "life events" identified in the European Commission's e-government benchmarks. A subsequent research step abstracted these services point by point as required to ensure a fair comparison between all countries studied. For example, the service of registering a residential address defined in the first step was abstracted in the course of the following research and transferred to the more general life event "residence and relocation" in order also to enable comparisons with countries in which there is no requirement for registration of citizens' residential address. The list that was consolidated in this way ultimately included e-government services and life events along with associated questions that this study is intended to answer:

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### **eID**

Is a national eID solution in place that permits citizens to identify themselves uniquely to e-government services?

### **Qualified electronic signature**

In addition to the eID, is a signature solution in place that citizens can use to generate qualified electronic signatures during e-government procedures?

### **Tax system**

Are there e-government services in place that enable citizens to handle tax-related procedures online (tax return etc.)?

### **Births**

Are there any e-government services in place that support parents in registering the birth of their child?

### **Social security benefits**

Are there e-government services in place that support citizens in claiming social security benefits (unemployment benefit etc.)?

### **Certificates**

Are there e-government services in place that enable citizens to request copies or duplicates of registry office certificates (birth, marriage, death certificates)?

### **Residence and relocation**

Are there e-government services in place that support citizens in matters relating to residence and relocation?

### **Setting up a company**

Are there e-government services in place that support citizens to set up a company electronically?

## **3.3. Sources of information**

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A range of information sources were used to analyse the availability of the defined e-government services in the selected countries. Various existing studies on the availability of e-government in Europe<sup>[1][2][3]</sup> and other information provided online were primarily used to produce the analysis.

A central and particularly important information source turned out to be the e-government portals provided by the countries examined that are intended to support the citizens in taking advantage of e-government services<sup>[4][5][6][7][8][9][10]</sup>.

As this study is mainly based on information that is freely available on the Internet, it should be noted that this study makes no claim to completeness in terms of the data collated, particularly as the responsibility for individual services within federal structures may lie regionally or even locally and may not have been picked up by this study.

# 04 | Discussion

The results set out in table form in section 2 show a strongly simplified version of the analysis results obtained. To enable a direct comparison between individual countries, these tables attempt to reduce each table entry to a yes/no response. However, this simplified presentation cannot fully depict the findings of the analysis performed. Consequently, the results obtained will be presented in further detail below where this is possible and appears expedient. For that reason the different services will be considered separately in the following sub-sections.

## 4.1. eID

A comprehensive eID system forms the basis of any national e-government infrastructure as this enables citizens to be identified in online processes. Essentially all countries examined have an eID system and can therefore identify users in online processes. This is also shown in Table 1. However, there are some significant differences between the individual countries. For example, unlike the rest of the countries examined, the Netherlands and the United Kingdom do not use a hardware-based eID. Specifically this means that they use neither chip cards nor mobile solutions as is the case for example in Estonia or Austria. This also results in a qualitative difference to the eID solutions as non-hardware based approaches such as pure password-based solutions or approaches that are based on the use of software certificates do not afford the same security features.

## 4.2. Qualified electronic signature

With the exception of the Netherlands and the United Kingdom, all eID tokens issued to citizens (chip cards, SIM cards, mobile signature solutions) also enable the generation of qualified electronic signatures. Primarily as a result of the lack of a corresponding hardware component, the eID solutions of the Netherlands and the United Kingdom do not technically support the creation of qualified electronic signatures pursuant to the EU Signature Directive<sup>[11]</sup>.

Whilst chip cards continue to play an important role for the creation of qualified electronic signatures, mobile signature solutions are gaining ground. Successful examples of mobile signature solutions – which are usually offered in parallel to chip-card based solutions – are the Estonian mobiil-ID<sup>1</sup> and also the Austrian Handy-Signatur.<sup>2</sup>

## 4.3. Tax system

Services for the electronic handling of tax affairs are offered in all of the countries analysed, although there is a clear difference in the scope of the services offered between the individual countries. For example, the Finanz-Online<sup>3</sup> portal on offer in Austria offers both Austrian citizens and companies a range of options to handle tax matters completely electronically. Citizens mainly use the electronic employee assessment system, via which they can apply for and complete tax credits completely electronically. In Germany, too, the user numbers of the electronic tax return (*Elektronische Einkommensteuererklärung*, ELSTER) are rising. However, clear differences between the countries are still apparent when it comes to frequency of use. Whilst in 2013 Eurostat claimed that just 35 percent of e-government users in Germany took advantage of the electronic tax return, this figure was 60 and 82 percent respectively in Austria and Estonia.<sup>[12]</sup>

## 4.4. Births

The complete electronic registration of a birth is only possible in Estonia, where parents can use a corresponding e-government service to register the name of the child, register the child for health insurance and also apply for state social security benefits. In the Netherlands such a service is planned for 2015, but not currently available. Austria is a special case. There the hospital in which the birth took place or the midwife

1 <http://mobiilid.ee/>

2 <https://www.handy-signatur.at/>

3 <https://fnanzonline.bmf.gv.at/fon/>

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who attended the birth is responsible for registering the birth. Therefore, private citizens do not necessarily require such a service, and for that reason it is not available in Austria.

#### **4.5. Social security benefits**

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With the exception of the Netherlands all countries analysed offer online procedures via which social security benefits can be applied for. Although the Dutch e-government portal offers extensive information on the existing options for drawing social security benefits, it does not appear to offer a full transactional service for this purpose at the present time.

For the remaining countries there are significant differences in the number of the online services offered for taking advantage of social security benefits. For example, some countries clearly pursue the strategy of having citizens attend in person in order to draw certain benefits, whilst other benefits can simply be applied for online. Germany only currently offers a restricted service in the area of social security benefits with the option to access personal child benefit information.

#### **4.6. Public certificates**

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Online services for requesting duplicates of registry-office certificates exist in all countries examined except Germany, the Netherlands and Turkey. No services of this type can be found for those three countries.

#### **4.7. Residence and relocation**

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Some of the countries examined offer e-government services in the area of residence and relocation. For example, Estonia, Spain and Turkey offer an online service via which changes of address can be notified. In Austria a corresponding online procedure can be used for example to apply for a subsidy to build a house or an application for social housing made. For Germany, the Netherlands and the United Kingdom, conversely, no relevant online services could be found.

#### **4.8. Setting up a company**

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Companies can be set up online in Estonia, Austria and the United Kingdom. In the case of the United Kingdom, however, the sparse information obtained from Internet research means it is impossible to say for certain whether the online services offered permit a full company set-up or only cater for partial aspects (registration for taxes etc.).

For other countries, although existing e-government portals offer extensive information on the setting-up of the company, they do not provide corresponding transactional online procedures.

# 05 | Conclusion

The aim of this study was a systematic analysis of the e-government offerings in the various European countries. To that end a set of e-government services was defined and their availability then examined in seven different countries. To ensure a fair comparison between the individual countries, the services were selected that essentially match the prevailing framework conditions in the countries. Individual cases in which a fair comparison was not possible were identified as such.

The results obtained that were presented and discussed in this study show that there are definitely significant differences in the availability of certain e-government services in Europe. Whilst countries such as Estonia or Austria appear to be relatively well developed, clear room for improvement was established for other countries such as Germany or the Netherlands.

However, at this point it should be noted that the results of this study need to be seen in the context of other, more extensive studies dedicated to the state of maturity of European e-government solutions. Because of the limited scope of this study, it can by no means present and analyse the entirety of e-government infrastructures of the countries investigated. Instead, by focusing on a small number of services, this study merely illustrates a partial – albeit relevant – sub-aspect of these overall solutions.

Despite the obvious limitations of this study, its results can be used to draw certain useful conclusions. Further, this study provides a good overview of the e-government situation in various European countries from the perspective of the citizens. The main issue is to implement these insights accordingly and thus to drive forward the further development of e-government solutions in Europe.

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