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Deliverable D2.3
Considerations for the up-take of eGovernment services in Europe

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EXECUTIVE SUMMARY

This report is deliverable D2.3 *Considerations for the up-take of eGovernment services in Europe* for the European Commission funded project CLARITY (Champion e-government applications to increase trust, accountability and transparency in public services)[1]

The CLARITY project seeks to support European Member States in their pursuit for greater trust, transparency and efficiently within government by increasing take-up of open eGovernment initiatives. This report is one of the stepping stones needed to reach this objective and presents an overview of stakeholders working within open eGovernment service design, development and implementation in four focus areas:

- General practice health
- Local government services
- Services for SMEs and self-employed citizens
- Services for disabled citizens

This report furthermore presents an overview of the drivers for change towards open eGovernment in each of the four areas, as well as the key needs of service providers and service users and the barriers they face in the up-take of open eGovernment services. This report will feed into subsequent work of the CLARITY consortium, which is currently working on a gap analysis, which matches available open eGovernment applications (identified in deliverable D3.1 *Catalogue of eGovernment applications*) with the needs identified here. This will highlight gaps in the provision of services and suggest areas where targeted innovation can take place to meet needs that are currently un-met. The findings presented here will also feed into the CLARITY Blueprint which will present a future direction for open eGovernment services in Europe. The Blueprint will include guidance on: 1) available and emerging solutions; 2) emerging business models; 3) technology and data gaps; 4) emerging data models; 5) policy gaps; and 6) social considerations in open eGovernment services.

The findings presented here are the result of an extensive literature review of academic, policy and grey literature on open eGovernment services in general, and within the four focus areas. The CLARITY partners also conducted 15 semi-structured interviews with experts that work within the broad field of open eGovernment services to present up-to-date and validated findings regarding the state of affairs in open eGovernment in Europe. This deliverable also draws on earlier CLARITY deliverables, such as an in-depth needs assessment and the analysis of drivers and stakeholders in open eGovernment.

What we found is that here are still considerable barriers standing in the way of full up-take of open eGovernment services, such as lack of ICT and data skills within government and among service users; fragmentation within government services; outdated systems that are not

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[1] Grant Agreement Number: *693881*

integrated and can thus not support adequate data flows; and finally financial constraints within government and subsequent lack of prioritisation of open eGovernment development.

The policy, technological, social and economic barriers are strong including the drive for better service delivery at lower cost; transparency and accountability of government; equality of access to government services; and rapid technological developments. However, there are still needs from service users that are currently unmet, such as ICT skill gap; lack of awareness from citizens; the digital divide is also present and there is a need for pockets within society to become better connected so that they can enjoy the full benefits of open eGovernment services. On the service provision side there is a need for a strong policy at every level (national, regional and local) to assist with prioritisation and dedication of resources to open eGovernment development. ICT and data skills among government staff are also in need of updating and there is a clear need for training and education in this respect.

To conclude our work we arrive at eight considerations for the up-take of open eGovernment services in Europe. Below we present these considerations in summary:

Eight Considerations for the up-take of open eGovernment Services in Europe

Strong national policy will provide the necessary push and framework around open eGovernment efforts within member states. It will also provide a drive for regional and local governments to develop and implement their own policies that are tailored for their context.

Long term planning, which includes an in-depth and critical review of the foundations of current service delivery systems and governing structures. National, regional and local governments need to have the confidence to define future goals and draw up step-by-step plans on how to get to their desired future

ICT systems that are open source, flexible and scalable should lie at the heart of open eGovernment service strategy and delivery. In procurement of new systems and applications, care should be taken to choose open systems (open API), that can be amended easily to fit different contexts of use and are easy to integrate.

Building critical mass in the form of building collectives of service providers (whether they be General Practice, social care or municipalities) will help lower cost of equipment, training and open eGovernment solutions.

Building strong government data practices and skills. Data is of key importance for opening eGovernment service delivery and provide citizen centric and personalised services. Governments and government departments hold considerable amounts of data that can be used to create value inside and outside governments.

Financial incentives and support to increase implementation of eGovernment services within governmental units, e.g., provision of initial funds, financial sponsorships, reimbursements for adoption, pay-for-performance initiatives etc. Bearing in mind that costs and tight budgets are identified as considerable barrier to driving implementation of open eGovernment services this solution could be scalable and include different funding options.

ICT skills training needs to be a policy priority to mitigate the identified effects this is having on both the service delivery and service use sides. This is a complex issue that will need a multi-pronged approach and communication and collaboration with the education system in each member state.

To increase citizen trust in open eGovernment services is necessary to increase up-take. The literature indicates that there is an overall distrust in governments, which will have an effect on how citizens perceive open eGovernment services. There is however an opportunity to increase citizen trust by highlighting the transparency and accountability that comes with conducting government affairs in a more open manner.

1   INTRODUCTION

This is deliverable report D2.3 *Considerations for the up-take of eGovernment services in Europe* for the European Commission funded project CLARITY (Grant Agreement Number: *693881).*

The scope of this report is to: First, to present an overview of stakeholders working within open eGovernment services within the four CLARITY focus areas: General practice health; Local government services; Services for small business and self-employed; and Disability services. Second, to discuss drivers, needs and barriers that exist within each of the focus areas, and third present considerations for driving better up-take of open eGovernment services in each area to guide stakeholders working in open eGovernment services design, development or implementation. For this purpose, this report will be presented in a handbook style for each area, and presents the information in an accessible way that is oriented towards action and use. The report also references a wealth of different sources, for stakeholders who wish to seek additional information on findings presented here.

This report draws on the findings from previous CLARITY deliverables, all of which are available on the CLARITY website[2] for those who wish to have a more in-depth understanding of the issues presented. In addition, the CLARITY partners have conducted both an in-depth literature review for each area, focusing on policy, academic and grey literature, as well as expert interviews to ensure that information presented here is up-to-date and relevant for stakeholders. The report will give an overview of the current state of affairs in each focus area, future considerations and any potential pitfalls or barriers that need to be avoided, or mitigated. in future service development and implementation.

The findings presented in this report are also a part of the on-going work of the CLARITY project, which is to increase the take-up of open eGovernment services in Europe. Following this report, the CLARITY partners will perform a gap analysis, which will use information from the CLARITY *Catalogue of eGovernment applications* (D3.1) which presents open eGovernment solutions in each member state and selected third countries to match to the needs identified in D2.2 *Preliminary Needs Assessment* and this report. Gaps identified will assist stakeholders in this field to target innovation and services to meet needs that are currently un-met.

This deliverable should be read in conjunction with other CLARITY deliverables as well as the CLARITY website, which presents use cases, projects and good practice open eGovernment solutions that meet some of the needs identified here and mitigate the barriers.

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[2] All CLARITY deliverables are on the project website at http://clarity-csa.eu/downloads

What we found is that here are still considerable barriers standing in the way of full up-take of open eGovernments services, such as lack of ICT and data skills within government and among service users; fragmentation within government services; outdated systems that are not integrated and can thus not support adequate data flows; and last but not least financial constraints within government and subsequent lack of prioritisation of open eGovernment development.

The policy, technological, social and economic barriers are strong including the drive for better service delivery at lower cost; transparency and accountability of government; equality of access to government services; and rapid technological developments. However, there are still needs from service users that are currently unmet, such as ICT skill gap; lack of awareness from citizens; the digital divide is also present and there is a need for pockets within society to become better connected so that they can enjoy the full benefits of open eGovernment services. On the service provision side there is a need for a strong policy at every level (national, regional and local) to assist with prioritisation and dedication of resources to open eGovernment development. ICT and data skills among government staff are also in need of updating and there is a clear need for training and education in this respect.

The report is structured as follows: Chapter 2 describes the methodology used for the research presented here. Section 3 will give an overview of stakeholders working on open eGovernment within each focus area. Section 4 will present an overview of drivers, needs and barriers that are present within each of the four focus areas. Section 6 will pull together the findings of section 5 to give an overview of horizontal drivers, needs and barriers and the concluding section, 6, will present considerations for the future up-take of open eGovernment services in Europe.

2   METHODOLOGY

The scope of this deliverable is a focus on each of the four CLARITY focus areas, with the purpose of understanding the current state of affairs with respect to drivers, needs and barriers when it comes to designing, developing and implementing open eGovernment services. The focus was on presenting a research supported deliverable that gives strong indication to what considerations should be taken into account to enhance up-take of open eGovernment services in Europe within the four areas.

The research methods used include:

Literature Review of policy, academic and grey literature focusing on each practice area as well as open eGovernment services in Europe more generally. A broad document search was undertaken by the partners and the most relevant sources were chosen for an in-depth review. Open eGovernment is a vibrant and fast-moving area of interest, which results in extensive amount of literature ranging from philosophical discussions on the changing nature of government and open e-Democracy to detailed reports on the implementation of specific services. To draw boundaries around the most relevant sources, the focus was firstly on Europe,

second on each practice area, then on literature focusing on needs, drivers and barriers and any literature that focused on future policy making.

Expert interviews. 15 interviews were conducted with experts within each focus area, as well as experts within open eGovernment more generally. In many instances expertise crossed over focus areas and respondents were able to reflect on state of affairs within more than one area. The purpose of the interviews was to gather up-to-date knowledge of what is going on within open eGovernment, hear of specific examples of good practice as well as barriers. We also asked all respondents to look to the future of the next 5-10 years and share with us their plans and/or vision for furthering open eGovernment services.

By using the above methods allows us to present an evidence based considerations, which will feed into the project gap analysis, which includes a focus on targeted innovation and the CLARITY Blueprint which offers a view of the future and plans to further up-take of eGovernment services in Europe. We present considerations for the four CLARITY focus areas as guidance to policy makers, public authorities, technology developers and the stakeholders working to implement change by using open eGovernment tools and practices to provide public services.

3   STAKEHOLDERS IN OPEN EGOVERNMENT

This section will outline and introduce the stakeholder groups working within open eGovernment services in general as well as the focus area specific stakeholders. We, in part, draw on the CLARITIY Stakeholder Taxonomy presented in Deliverable Report D1.1, as well as interviews and literature review to present the stakeholders specific to the four focus areas. We furthermore, identify and present a categorisation of each stakeholder groups functions within each area.

The CLARITY project Taxonomy identified and aggregated stakeholders according to the following categories:
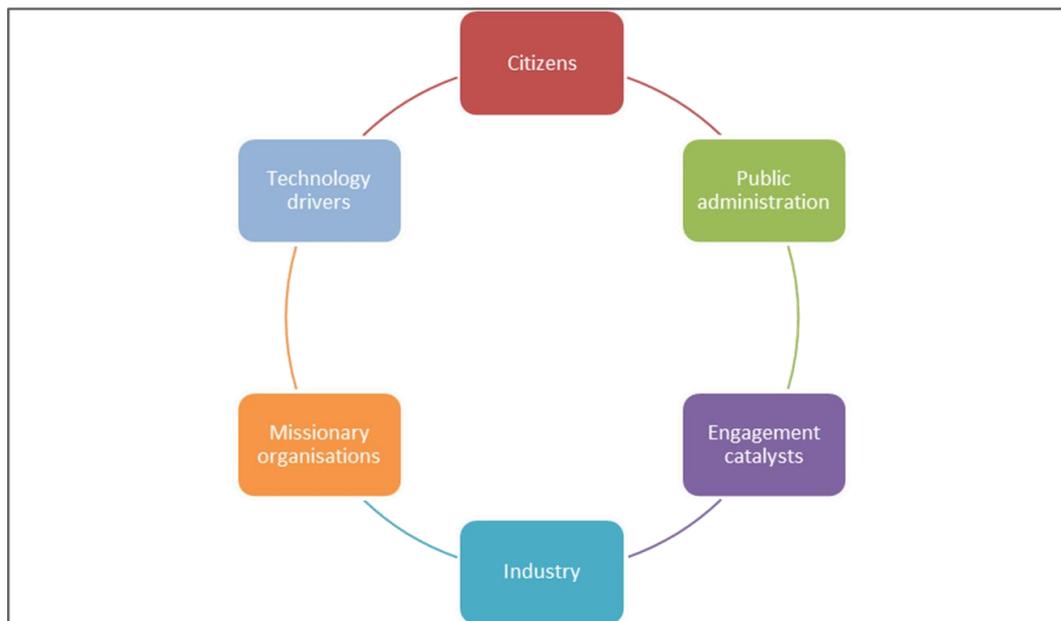
Figure 1 CLARITY stakeholder taxonomy of open eGovernment

Public administrations are often the initiator of open eGovernment services, although the other stakeholder groups are also increasingly innovating within this area and imitating new types of services. This was the view of several of our experts that in light of the current strain under which public service providers operate, due to austerity measures, heightened user expectations, and changing demographics, is driving other stakeholders (e.g. businesses, CSOs, citizens, research organisations etc) towards the development and provision of open eGovernment services. However, public authorities are still in the unique position of holding both the data needed for providing data-driven services, service and development budget, as well as the infrastructure of public service provision.

Service users are citizens, as well as private small and large enterprises, associations, interest groups, and specific needs groups (e.g., elderly, disabled, migrants). Additionally, in many instances, municipalities, regions, and government agencies often demand very specialized and advanced tools for their service delivery for which industry caters. The engagement catalysts (e.g. politicians and media) as well as technology drivers frame the landscape and influence innovation and overall direction of open eGovernment

Table 1 presents the categories of stakeholders and subcategories with a description of their direct or indirect / primary and secondary roles in eGovernment. We define the primary release as those directly involved in developing, testing, running and broadly harnessing e-Government applications. These are stakeholders which regularly transact with open government either as a provider or consumer, or continuously sustain it are primary. Secondary players are those who are indirectly involved in supporting and initiating, developing, testing, promoting and harnessing e-Government applications. Stakeholder which contribute indirectly, passively, or are involved in infrequent transactions are secondary stakeholders.

Stakeholder Category	Subcategories	Role in relation to existing and emerging open eGovernment services	
		Direct/indirect	**Primary/Secondary**
Public Administration	• Supranational (e.g. EU, UN, International organizations) • National (e.g. French government) • Regional (e.g. Basque regional administration) • Specialised Agencies (e.g. Swiss Agency for Development and Cooperation) • Municipalities (e.g. City of Berlin) • Interoperability agents and tools	Direct	Primary
Individual Citizens	• Citizen service users • Activists (active citizens) • Passive citizens • Non-citizen residents migrants and others	Mostly direct, but also indirect	Primary
Non-profit organizations	• NGOs • Educational institutions • Research institutions	Indirect mostly	Secondary
Industry	• SMEs • Big business and corporations • Contractors	Indirect mostly	Secondary
Technology drivers and innovators	• Innovators • Companies producing technology for open government	Indirect	Secondary
Engagement catalysts	• Political parties • Media	Indirect	Secondary

Table 1 CLARITY Stakeholder taxonomy

We use the above table slightly amended to categorise stakeholders working within each area, to better give an indication to the functions within each area. We allocate each a primary or secondary role, where a stakeholder with a primary role is seen as imperative for the successful implementation of open eGovernment services, and those with secondary roles are either those

who may be called in to provide input for specific services or those who are emerging as important stakeholder groups but their absence does not present a barrier to the implementation of open eGovernment services.

The following four sections discuss and present an overview of stakeholders within each focus area. These groups have been found through the literature review and interviews to be the most prominent stakeholder groups operating within each area. The stakeholder taxonomies are, as we found, very much in flux but these create an overview of groups currently operating in each focus area and what roles they hold.

3.1   STAKEHOLDERS WITHIN GENERAL PRACTICE HEALTH

Within the specialized domain of General Practice Health, the stakeholder taxonomy includes sector specific stakeholder groups that may have very specific needs when it comes to open eGovernment service provision. General practice health is part of a much broader ecosystem of health care provision within each European member state and may in part be funded and governed locally/regionally (e.g. Sweden) or nationally (e.g. UK). Service design, development and provision may include private and public stakeholders, and user payment models also differ between member states. In our literature review we found a number of stakeholders mentioned when it comes to designing, developing and implementing eGovernment services within the domain of General practice health.   The table below lists the stakeholders and assigns them primary or secondary importance in this process, we also assign each a role, as it appears in the literature to explain which part of the process each stakeholder is likely to be part of.

The group of stakeholders we found most active within the field of open eGovernment service design, development and implementation within general practice health are as follows:

Stakeholder Category	Subcategories	Role
Public administration	National health ministries	Primary[3]
	Regional/local health administrations	Primary
	State insurance and welfare agencies	Primary
Health service providers	General practitioners	Primary
	GP Managers	Primary
	Nurses	Primary
	Other GP staff	Secondary
Citizens	Health care service users	Primary
	General public	Secondary
	Carers	Secondary

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[3] We define as primary, the stakeholders directly involved in initiating, developing, testing, running and broadly harnessing e-Government applications. These are stakeholders which regularly transact with open government either as a provider or consumer, or continuously sustain it. Secondary players are those who are indirectly involved in supporting and initiating, developing, testing, promoting and harnessing e-Government applications. Stakeholder which contribute indirectly, passively, or are involved in infrequent transactions are secondary stakeholders.

Non-profit organisations	Research organisations	Secondary
	Patient organisation/ interest groups	Secondary
Industry	eHealth systems and software developers/providers (ranging from large corporations to SMEs who work on health app development)	Secondary
	Pharmaceutical companies	Secondary
	Private companies with channelled access, such as: 1. Insurance companies 2. Private trusts 3. Medical supply and equipment entities 4. Private care providers 5. Elderly care facilities	Secondary

Table 2 Stakeholders in general practice health services

The stakeholder list above is not exhaustive, nor are the roles as neatly fixed as appears above. The table however gives an indication of the processes and stakeholders involved when it comes to implement new open eGovernment services within General Practice health.

3.2 STAKEHOLDERS WITHIN LOCAL GOVERNMENT SERVICES

The stakeholder categories presented here were found through the literature review and the expert interviews. As with the stakeholder taxonomy for General Practice Health, this is not an exhaustive list, nor are the functions and roles fixed as the process for designing, developing, testing and implementation of open eGovernment services can differ between contexts. For example, the role of citizens is changing fast and they are increasingly involved in all steps of open eGovernment, from ideation to testing. User centred design was mentioned by our interview respondents as something that they were implementing or would like to implement so we gather that citizen inclusion is not a fixed methodological approach as of yet. The reason for placing citizens as secondary stakeholders is due to their current function, which seems to be mostly for testing out new services once they have been designed.

Stakeholder Category	Subcategories	Function
Public administration	National government – Ministries of the Interior	Primary
	Local and regional government	Primary
	Cities and municipalities	Primary
	City and municipality associations	Secondary
Citizens	General public	Primary
	Interest groups	Secondary
	Community leaders	Secondary
	Community groups	Secondary
Non-profit organisations	Research organisations	Primary
	Missionary organisations (e.g., open data, open knowledge, open democracy, eDemocracy, civic participation etc)	Primary
Industry	ICT Systems providers	Secondary

	eGovernment advisors/consultancies	Secondary
	SMEs and Large Enterprises in open eGovernment provision	Secondary

Table 3 Stakeholders in local government services

The role of industry and non-profit organisations is also in flux and changes between national and local contexts. Civic developers are increasingly designing public service applications and may work in co-ordination with public authorities or independently. With regard to industry, we have placed them here as primary stakeholders due to their strong role in providing technology, consultancy and services to governments to implement the shift to open eGovernment.

3.3 STAKEHOLDERS WITHIN SMALL BUSINESS & SELF-EMPLOYED SERVICES

Stakeholders working within open eGovernment services within the focus area of SMEs and Self-Employed people are in many instances similar to those who work in local government services. The literature we reviewed did not give a very clear indication of the stakeholders working within this area, specifically with regard to support for self-employed citizens.

Stakeholder Category	Subcategories	Function
Public authorities	Ministry for work and employment, Ministry for business, innovation etc.	Primary
	City and municipality administration and departments	Primary
	Tax and benefits offices	Primary
	Governmental business initiatives/business support	Primary
Citizens	General public	Secondary
	Self-employed people	Primary
	SME staff and owners	Primary
Non-profit organisations	Research organisations	Secondary
	Business development centres: e.g., incubators/start-up hubs	Secondary
Industry	SMEs	Primary
	Larger corporations providing support to SMEs	Secondary

There are a range of business support mechanisms that are aimed at SMEs specifically. These may be either government supported or industry, and sometimes both. Larger corporations often offer support in the form of grants or business support to smaller companies, often with a focus on entrepreneurship or start-up support.

3.4 STAKEHOLDERS WITHIN DISABILITY SERVICES

Although more focused than general health practices, the needs of the disability services chain are more qualitative and the needs of each individual end user are more specialized. When

looking from the perspective that no two experiences of disabled persons are the same[4] or that no two disabilities are identical, one can understand why e-services in disabilities have been equally addressed by private, specialized entities as by central government. As a result of this greater nuance and smaller the whole grouping is more specialized. The ecosystem around disability services is in some ways more complex, although smaller. Stakeholders within the disabilities services system include:

Stakeholder Category	Subcategories	Function
	Health ministries & disability agencies	Primary
	Employment agencies	Primary
	State insurance and welfare agencies	Primary
	Transport and infrastructure branches relating to accessibility	Secondary
Citizens	Disabled citizens	Primary
	Carers	Secondary
Service providers	Health care professionals i.e. doctors and hospital staff Administrators Social carers	Secondary
Industry	eHealth technology providers	Primary
	Third party users such as insurance company or research institutions	Primary
	Private health care facilities	Secondary
	Special equipment providers	Primary
	Private companies with channelled access, such as: 6. Public transport companies 7. Employer companies 8. Insurance companies 9. Private trusts 10. Medical supply and equipment entities 11. Private care providers 12. Elderly care facilities	Secondary
Non-profit Organisations	Disability advocacy and support groups	Secondary

3.5   REFLECTIONS ON THE AREA SPECIFIC STAKEHOLDER TAXONOMIES

As we found, eGovernment service design, development and implementation includes collaborations among many different stakeholders. Who they are, in any given case, may differ between development teams depending on where the idea originated from, the link between the new service to other already running services and the intended user group. We thus present these taxonomies as neither complete nor static. These however give an indication to the stakeholders working within each area so that these can be consulted on their specific needs and drivers when it comes to participating in the development of open eGovernment services.

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[4] Welfare Society Territory (2016) No two people live their disability the same way (Online) http://www.west-info.eu/no-two-people-live-their-disability-in-the-same-way/

As is evident, stakeholders differ somewhat between the four areas but some groups are highly relevant across the whole open eGovernment ecosystem, these are first and foremost governments (national, regional and local), service users which are imperative for initiating and giving feedback on services as they are developed, and industry stakeholders and non-profits which offer technological skills and capacities needed to implement open eGovernment services.

4   DRIVERS, NEEDS AND BARRIERS

This section gives an overview of drivers, needs and barriers that are currently most prominent within the focus area of open eGovernment service development, provision and up-take in Europe. Below we present our findings from the literature review and interviews within the four CLARITY focus areas. Each section presents a list of drivers listed by categories: policy, technological, social and technological. As will become evident, these drivers are the same or similar across most of the areas. We then go on to list needs and barriers for the stakeholder groups of service providers and service users within each focus area.

It is important for the on-going development of open eGovernment services to have a clear picture of the needs within each group so that these can be met and that innovation and service provision in this field can be successful. It is also important to have a clear view of the barriers and pitfalls, so that these can be mitigated or avoided, as duplication of work or retrofitting is time consuming and costly, which is likely to lead to failure as the public sector throughout Europe is currently struggling with resources, both human and financial, as will become clear in the subsequent four sections.

4.1   DRIVERS, NEEDS AND BARRIERS WITHIN GENERAL PRACTICE HEALTH SERVICES

The review of literature for this section, as well as the interviews used the concept of eHealth to describe changes across health care functions, fuelled by ICT[5]. The effects of ICTs on health practices are documented as ranging from improving quality of life, sustainability, to driving innovation and growth. eHealth functionalities can improve medical practices, inform decision-making process by facilitating access to information, simplify the prescription of diagnostic procedures, and produce alerts and reminders They can also produce lower rates of errors in medication errors and increase productivity among professionals, and lower costs.[6]
For the above benefits to be realised, adoption on eHealth technologies and approaches in General Practice Health Services is imperative, as these practitioners are the first port of call for most health care users, and they gather important information that is necessary for all follow-up care within the broader health care system, as well as social care (e.g. care of the elderly). Consequently, GPs can act as bottlenecks or enablers of adoption of eHealth technologies within each country.

There are different models for running general practices and the EC report[7] on *Benchmarking deployment of eHealth among General Practitioners* in Europe lists four options that it found prevalent in the working practices of GPs across Europe[8]:

- Salaried GP working in a health centre

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[5] European Commission, eHealth Action Plan 2004-2011 – making healthcare better for European citizens: An action plan for a European e-Health Area, 30 April 2004, COM(2004) 356 final, http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52004DC0356&from=EN.
[6] European Commission, Benchmarking Deployment of eHealth among General Practitioners (2013), Final Report
[7] Ibid.
[8] Ibid, p. 27

- Self-employed GP working alone (with administrative support staff) in own practice
- Self-employed GP working in a group practice with other physicians
- Other (locum/freelance etc.)

GPs also serve a range of different communities, with regard to demographics and size, with some working in highly populated areas, and some serving sparsely populated rural areas. The connections between General Practice and other aspects of the health care systems within each country also differ, they are however seen as the first stop of health care users, as well as the section of the system that is primary source of support to long-term patients. As such GPs may have a critical role to play regarding the acceptance of eHealth technologies by raising awareness of their existence, uses and benefits among patients. [9]

4.1.1 Drivers

The EU provides the overarching policy drivers and provides specific focus issues through high level strategy documents such as The Digital Agenda for Europe 2014, which illustrates eHealth as one of its reasons for pursuing it[10], the eHealth Action Plan 2012 – 2020 and initiatives such as eHealth Network[11] and the eHealth Governance Initiative[12]. They key focus points that these initiatives and agendas highlight, and which trickle down to the Member State and then down to general practice level are:

Policy	Interoperability of health care systems	Personalised healthcare	Targeted, effective and efficient health services
	Patient empowerment	Socio-economic inclusion, equality and quality of life	Less errors and security of data resulting in an increase in trust
Technological[13]	Cloud computing	System integration	Mobile communication[14] [15]
	Big data	Standardisation[16]	IoT

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[9] Grechenig, Thomas, Avana, Barbara, Baranyi, Rene, Schramm, Wolfgang, Wujciow, Anna, Design Criteria for Large eHealth Infrastructure Systems, in Graschew, Georgi, (ed.), Telemedicine Techniques and Applications, 2011, InTech, pp. 99 – 118, p. 107-108.

[10] European Commission, Digital Agenda for Europe, 2014, p. 6.

[11] European Commission, DG Health and Food Safety, eHealth Network, online at: http://ec.europa.eu/health/ehealth/policy/network_en

[12] eHealth Governance Initiative, The European eHealth Governance Initiative, 2012, online at: http://www.ehgi.eu/default.aspx

[13] Srivastava, Shilpa, Pant, Millie, Abraham, Ajith, Agrawal, Namrata, The Technological Growth in eHealth Services, Computational and Mathematical Methods in Medicin, 2015, 2015:894171, online at: http://europepmc.org/articles/pmc4469784.

[14] European Commission, "eHealth Action Plan 2012-2020 – Innovative healthcare for the 21st century" Brussels, 6 December 2012, COM(2012)736 final, p.9

[15] Marschang, Sasha, Health inequalities and eHealth, Report of the eHealth Stakeholder Group, 21 February 2014, p. 25.

[16] IEEE Xplore Digital Library, Search results for standars in "Health informatics", online at: http://ieeexplore.ieee.org/search/searchresult.jsp?queryText=health%20informatics&refinements=4294965216

Social	Empowerment[17]	Patient demand for better services[18] [19]	Changing demographics[20] [21]
Economic	Sustainability[22] Cost savings	Efficiency[23]	Growing eHealth market[24]

Table 4 Drivers in General Practice Health

National eHealth strategies have also a strong part to play in setting the agenda and driving change within each European Country. The overall picture of the state of affairs in eHealth reveals that almost 75% of EU states have an e-Health policy/strategy[25], which is a necessary point of departure for implementing change.

4.1.2   Needs

The high-level needs expressed in both the interviews and in the literature, are to lower cost[26] and increase efficiency of health care across member states. Demographic trends, increased longevity and advanced care options for short and long-term illnesses have all put pressure on health care systems across Europe. Austerity measures and cuts to public services have also had a strong effect on the provision of health services, and general practice health has not been exempt from cuts to funding. At the same time the expectation of more efficient services is strong and for this to work there is a strong need to improve information exchange between different levels of the health care system due to specialization, patient mobility, and personalisation of medicine.[27] Hence there is a need for updating infrastructure with a focus on data flows, openness, scalability and flexibility.

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[17] WHO, From Innovation to Implementation: eHealth in the WHO European Region, 2016, p. 3.

[18] Barakat, Ansam, Woolrych, Ryan D, Sixsmith, Andrew, Kearns, William D, Kort, Helianthe SM, eHealth Technology Competencies for Health Professionals Working in Home Care to Support Older Adults to Age in Place: Outcomes of a Two-Day Collaborative Workshop, Medicine 2.0, 2013, Jul-Dec 2(2):e10, online at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4084768/ , abstract, Srivastava, Shilpa, Pant, Millie, Abraham, Ajith, Agrawal, Namrata, The Technological Growth in eHealth Services, Computational and Mathematical Methods in Medicin, 2015, 2015:894171, online at: http://europepmc.org/articles/pmc4469784 (mentioned among the benefits of eHealth).

[19] Keränen, Niina, Pulkkinen, Pasi, Jämsä, Timo, Reponen, Jarmo, Drivers of the eHealth transformation: beyond age and BMI, Finnish Journal of eHealth and eWelfare, 2013; 5(4), pp. 180 – 188, p. 183.

[20] Eurostat, Being young in Europe today, Eurostat Statistical Books, 2015 edition, pp. 18, http://providus.lv/article_files/2953/original/KS-05-14-031-EN-N.pdf?1431672371

[21] European Commission, "2012 Ageing Report: Economic and budgetary projections for the 27 EU Member States (2010-2060)", chapter 3 at http://ec.europa.eu/economy_finance/publications/european_economy/2012/2012-ageing-report_en.htm

[22] O'Connor, Siobhan, Hanlon, Peter, O'Donnell, Catherine A., Farcia, Sonia, Glanville, Julie, Mair, Frances S., Barriers and facilitators to patient and public engagement and recruitment to digital health interventions: protocol of a systematic review of qualitative studies, BMJ Open, 2016, p. 2.

[23] WHO, From Innovation to Implementation: eHealth in the WHO European Region, 2016, p. 7.

[24] European Commission, "eHealth Action Plan 2012-2020 – Innovative healthcare for the 21st century" Brussels, 6 December 2012, COM(2012)736 final, p. 4.

[25] WHO, From Innovation to Implementation: eHealth in the WHO European Region, 2016, p. 9.

[26] Keränen, Niina, Pulkkinen, Pasi, Jämsä, Timo, Reponen, Jarmo, Drivers of the eHealth transformation: beyond age and BMI, Finnish Journal of eHealth and eWelfare, 2013; 5(4), pp. 180 – 188, p. 182.

[27] Ibid, p.182.

General practitioner needs

Efficiency needs

GPs currently struggle with increasing workloads, resulting from larger patient lists, high expectations and a target driving culture. Currently GPs in England struggle with "appointments, phone calls, repeat prescriptions, results, letters and home visits" most of which could be better streamlined with a combination of funding, service reform and adoption of eHealth technologies.[28]

Technical skill needs

What we found as the most prominent need within our literature review and desk research is that General Practice clinics need a stronger technical skillset. Our respondents who works with small clinics to increase efficiency and implement eHealth solutions finds that staff are generally very ready for change but lack the technical knowledge on how to proceed and initiate change. She recommended that hiring people with a more varied skillset to General Practices would go a long way to move clinics forward in this respect. This corresponds to the GP survey carried out by the EC in 2013 where 32% of GPs found electronic health records too complicated to use, and this was cited as the reason for why their clinic did not have these systems. 27% also expressed that they are still unsure about privacy and confidentiality issues that accompany the electronic storage and sharing of patient records.

Funding needs

Small clinics especially may struggle with costs associated with change working practices towards eHealth technologies. Costs will include technical infrastructure (software and hardware) and education for staff. This may also involve changing working practices and some disruption to services while new systems are put in place. In the time of budget cuts, there will be a tendency to prioritise more immediate issues, rather than longer term and larger-scale issues whose effects are not immediately apparent.

Information needs

General practice health workers, in addition to being the primary data collectors in the health system, also need quickly accessible and accurate information especially on higher risk patients. This will also involve systems that can allow for speedy search and analysis, to be able to provide personalised and predictive care. For this purpose, communication between systems is necessary, as well as algorithms that can assist with support clinical decisions.[29]

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[28]NHS England (2016) General Practice: Forward View, p. 7.   Available: https://www.england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf

[29] See, e.g. Keränen, Niina, Pulkkinen, Pasi, Jämsä, Timo, Reponen, Jarmo, Drivers of the eHealth transformation: beyond age and BMI, Finnish Journal of eHealth and eWelfare, 2013; 5(4), pp. 180 – 188, p. 184; Chan IS, Ginsburg GS. Personalized medicine: progress and promise. Annual review of genomics and human genetics 2011;12:217-244; Swan M. Health 2050: the realization of personalized medicine through crowdsourcing, the Quantified Self, and the participatory biocitizen. Journal of Personalized Medicine 2012;2(3):93-118.

Needs for integrated eHealth systems

The majority of GPs, while having access to a computer and to electronic health records of some sorts, had no inter-connection to external health-relevant databases, with the exception of laboratories. They did not, for example, have connection with hospitals, other GPs, health authorities, specialist practices, pharmacies or insurance companies.[30] Aside from receiving laboratory results and certifying sick leaves, most ICT systems did not allow for health information exchange, for example with regard to referral letters, appointment requests, email interaction with the patient or exchanging information with other healthcare professionals.[31] Where these capabilities were available, the majority of the GPs used them, either routinely or occasionally.

Needs for secure systems

GPs expressed a strong need for security and confidence when handling and sharing patient data, as well as prescribing medication. This presents itself in the concern that GPs have over privacy and confidentiality issues, which fuels their distrust in electronic health records and eHealth systems. This need is related to the technical skill need in that technical understanding and good information can help GPs and health care staff in understanding how electronica health records can be kept safe, how access can be managed, and how they can be safely shared across systems.

Health service user needs

Need for personalisation and empowerment

Health service users want increased cooperation, shared responsibility for eHealth programmes,[32] personalization, empowerment, and a voice in how services are designed and developed. Patients want to receive personalised solutions and they want to share responsibility for their own care. For this purpose, patient access to their own medical data is important.

Easier access to health services

Many health care user struggle with getting suitable appointments and there is a definite need for a more varied approach to consultations, e.g. through online consultations, which could help save time and be more efficient for both service users and providers. This would especially assist those who suffer with conditions which make them mostly homebound and it could help on cutting down on home-visits for GPs. Booking face to face appointments could also be streamlined with technical applications, which can also provide opportunity to cancel or re-schedule appointments as well as remind service users to attend.

Usability and functionality needs

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[30] European Commission, Benchmarking Deployment of eHealth among General Practitioners (2013), Final Report, p. 31.
[31] Ibid p. 39.
[32] Open Government Guide, Give citizens control of their personal information and the right to redress when that information is misused. No date. http://www.opengovguide.com/commitments/give-citizens-control-personal-information-right-redress-information-misused/

Chronic disease patients are often dependent on regular visits to GPs for disease management and may be underserved. There has been a call to integrate mobile health infrastructure with clinical information systems and the electronic medical record to support chronic disease patients through messaging and reminders for 1) self-management support, 2) laboratory test scheduling and 3) medication management. For example, the participants in this particular study reported improved self-management and information awareness regarding their disease after testing a new mobile health service for the monitoring of diabetes.[33]

People need to be reminded of upcoming appointments. Studies have found that when it comes to GP appointments, both text messages, as well as phone calls can be used to increase the attendance rate of patients successfully. The same was found to be true with regard to chronic disease patients for follow-up appointments.[34]

Access to medical data

Health service users see the benefits of using electronic health records. 66% of respondents to a 2011 Deloitte survey stated they would consider switching physicians if a doctor offers them access to their medical records through a secure Internet connection.[35]

In addition, a study shows that access to electronic health records by the patient encouraged good record keeping practices by staff and allows patients to improve the accuracy of their record, and take increased responsibility for their health.[36] This was supported by one of our respondents that had witnessed first-hand how working practice had changed for the better after patients were granted access to their data in Sweden.

One way to ensure that people's data in their charts is accurate and up-to-date is by allowing them direct access to their electronic health record that would allow them to add information as it occurs. This is currently not possible, except when a patient goes to visit a doctor, however eHealth infrastructure could give patients control over their information.[37]

Data security and ownership

In addition to access to their data, health care users need data security, as well as ensured confidentiality as well as knowledge regarding who can access their data and how it is used. In 2011 Deloitte survey, 39% of respondents in the 2011 Deloitte survey stated they have

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[33] Moore, S.L., Fischer, H.H., Steele, A.W., Durfee, J.M ,Ginosar, D., Rice-Peterson, C., Berschling, J.D, Davidson, A.J., A mobile health infrastructure to support underserved patients with chronic disease, Healthcare (Amsterdam, Netherlands), 5 February 2014, 2(1): 63-68), online at: http://europepmc.org/abstract/MED/26250090

[34] Liew, Su-May et. al., Text messaging reminders to reduce non-attendance in chronic disease follow-up: a clinical trial, The British Journal of General Practice, 1 December 2009, 59(569), pp. 916-920, online at: http://europepmc.org/articles/PMC2784529/

[35] Deloitte, 2011 Survey of Health Care Consumers in the Unted States, Key Findings and Strategic Implications, http://www.statecoverage.org/files/Deloitte_US_CHS_2011ConsumerSurveyinUS_062111.pdf, p. 12.

[36] Royal College of General Practicioners, Enabling Patients to Access Electronic Health Records: Guidance for Health Professionals. 1 September 2010. http://www.rcgp.org.uk/clinical-and-research/practice-management-resources/health-informatics-group/~/media/files/circ/health%20informatics%20report.ashx

[37] Grechenig, Thomas, Avana, Barbara, Baranyi, Rene, Schramm, Wolfgang, Wujciow, Anna, Design Criteria for Large eHealth Infrastructure Systems, in Graschew, Georgi, (ed.), Telemedicine Techniques and Applications, 2011, InTech, pp. 99 – 118, p. 99.

concerns in this regard.[38] Access to data should be on a "need to know basis" and people handling confidential data should be aware of their responsibilities, especially with sensitive data such as health data.[39]People should know if their data is linked to data from other services. In the UK patients can choose for their health information not to be used beyond their own care and deny access to parties outside of their main healthcare team.[40]

4.1.3   Barriers

This section will focus on the barriers that the key stakeholder groups face in their design, development or up-take of eHealth solutions in General Practice. For future health initiatives to be implemented successfully in general practice, it is imperative that stakeholders understand these, their complexity and seek to mitigate them in future design, development and implementation of new solutions.

Barriers in policy making

Complexity of health systems

The literature and our interview respondents agree that the biggest barrier faced is the overall complexity of health care systems across European countries. For eHealth strategies to be successfully implemented, they need to be integrated into the overall health systems, down to the general practice level. More importantly, unless eHealth is tackled in a systematic, coordinated and focused manner, it is possible that technology, rather than policy, will lead the way to its development, which risks leaving key stakeholder's needs unanswered.

Barriers in General Practice

Barriers emerging from the literature reviews and interviews, regarding the implementation of eHealth systems within general practice health are overall to do with the complexity of setting up a new system, lack of integrated systems, resistance from health care staff, skill levels and high cost of change.

Complexity and lack of integrated systems

In its 2013 study among GPs, the European Commission asked for the reasons for not having an Electronic Health Records. No particular reason gathered a large majority of answers, but the largest reasons were that it was too complicated (32%) and that the doctors were unsure about the privacy and confidentiality of the data (27%). On equal footing were the reasons that it was not needed (20%) or too expensive (19%). Only 14% believed it was not useful.[41] One of our respondents commented specifically on this barrier and how it featured in her work as an eHealth advisor to small clinics. In any one clinic, there can be multiple "legacy systems"

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[38] Deloitte, 2011 Survey of Health Care Consumers in the Unted States, Key Findings and Strategic Implications, http://www.statecoverage.org/files/Deloitte_US_CHS_2011ConsumerSurveyinUS_062111.pdf, p. 12.

[39] Parkin, Elizabeth. Patient health records and confidentiality. Briefing Paper Number 07103, 25 April 2016. House of Commons Library. http://researchbriefings.files.parliament.uk/documents/SN07103/SN07103.pdf

[40] Ibid.

[41] European Commission, Benchmarking Deployment of eHealth among General Practitioners (2013), Final Report p. 35.

in use, which may or may not be interconnected. Considerable amount of work for doctors may go in to manually entering data between systems. Implementing a new system on top of already existing ones can be met with resistance as it is seen as "yet another new system" and attempting to integrate or replace systems can prove difficult due to high cost being a barrier or the fact that the clinic is "locked in" to a contract with the system manufacturer/vendor. Complexity of systems e.g. slow system performance, difficulty of use of software and hardware, complexity of modifications, issues with reliability, speed, and connectivity issues are considerable barriers to the implementation of ICT enabled health services[42]

Skill levels and resistance to change

As mentioned above, the need for ICT training and education of health care staff is extremely important for the adoption of these innovations. However, research on eHealth education reveals that there are still aspects which are seriously lacking, including the fact that eHealth education is often elective in education programmes and is not integrated across clinical disciplines, nor does it fully benefit from innovations, such as eLearning, simulations or mobile technologies.[43] This leads to health care professional not feeling competent in their eHealth skills when using the technologies.[44]

A survey in the Netherlands among 171 General Practitioners showed that 67.3% of the GPs offered their patients the possibility of requesting a prescription via the Internet, 49.1% offered them the possibility to ask a question via the Internet. However, many GPs saw insufficient reliability and security, as well as the lack of financial compensation for the time spent on implementation of the new system as barriers.

According to a review of 44 reviews between 2009 and 2014 regarding implementation of eHealth systems. The findings show that negative perception of staff include: the belief that the system would disrupt the work, doubts in its benefits, distrust in the system, resistance to change, fear of loss of autonomy, liability concerns, concerns about patient privacy and security, perceived threats to patient and health professional relationships[45]. Some of the above perceptions are mentioned in other open eGovernment focus areas as well and resistance to change from staff due to concerns also of increasing demands and workload during, and following, changes.

Cost barriers

The cost of the system, its implementation and maintenance were presented as an important barrier in the majority of the studies in all eHealth areas. There is a high start-up cost with

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[42] Ross, Jamie, Stevenson, Fiona, Lau, Rosa, Murray, Elizabeth, Factors that influence the implementation of e-health: a systematic review of systematic reviews (an update), Implementation Science, 2016, 11:146.

[43] WHO, From Innovation to Implementation: eHealth in the WHO European Region, 2016, p. 16.

[44] Smith SE, Drake LE, Harris J-GB, Watson K, Pohlner PG. Clinical informatics: a workforce priority for 21st century healthcare, Australian Health Review, 2011, 35(2):130–135, online at https://www.researchgate.net/profile/Susan_Smith33/publication/51165364_Clinical_informatics_A_workforce_priority_for_21st_century_healthcare/links/00b4951b133e24b969000000.pdf.

[45] Ross, Jamie, Stevenson, Fiona, Lau, Rosa, Murray, Elizabeth, Factors that influence the implementation of e-health: a systematic review of systematic reviews (an update), Implementation Science, 2016, 11:146.

implementing eHealth systems[46] which can act as a strong barrier, especially when it comes to smaller general practices, which may not have the capacity to set up new systems, when considering the number of health care users, they are serving, due to lack of critical mass.

Barriers for healthcare users

Lack of eHealth literacy, access and technical skills

eHealth applications and services are often not accepted by the intended users and lack of eHealth literacy and lack of technical knowledge and skill, have been identified as key barriers to up-take[47]. In order to take-up eHealth services, users must be able to understand the information and processes they involve, so that they can make informed decisions. The concept of eHealth Literacy arose, defined by Norman and Skinner as "the ability to seek, find, understand, appraise health information from electronic sources and apply the gained knowledge to addressing or solving a health problem."[48]

Even though people in poorer and more remote areas stand to benefit the most from the use of eHealth, they may lack physical access, resource, knowledge and skills.[49] The HLS-EU project found that the groups most vulnerable to limited health literacy are those of lower social status, poorer background, lower education, experiencing financial difficulties, health problems and an age of over 75 years.[50]

Language support has also been found lacking in eHealth services, which are often only available in a limited amount of languages. According to WHO, in 2015 only 35% of all countries in the European region addressed multilingualism in the context of their healthcare electronic platforms.[51] This will be a strong barrier for minority and migrant populations, to accessing and benefitting from eHealth information and services online.[52]

Concerns over privacy and confidentiality and data security

Concerns over data and open eGovernment services is an ongoing theme in the literature. Within health, where data is overall very sensitive, this concern is even stronger and will affect

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[46] European Commission, "eHealth Action Plan 2012-2020 – Innovative healthcare for the 21st century" Brussels, 6 December 2012, COM(2012)736 final, p. 5.

[47] Pohl, Anna-Lena, Griebel, Lena, Trill, Roland, Contemporary eHealth Literacy Research – An Overview with Focus on Germany, in Cumming, G., French, T., Jaatun, M.G., Jaatun, E.A.A. (eds.), *Proceedings of the 3rd European Workshop on Practical Aspects of Health Informatics (PAHI 2015),* Eigin, Scotland, UK, 27 October 2015, published at http://ceur-ws.org, p. 91.

[48] Norman, Cameron D, Skinner, Harvey A, eHealth Literacy: Essential Skills for Consumer Health in a Networked World, Journal of Medical Internet Research 8(2), e9 (2006), online at https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1550701/.

[49] Chan, Connie B., Matthews, Lisa A., Kaufman, David R., A Taxonomy Characterizing Complexity of Consumer eHealth Literacy, AMIA 2009 Symposium Proceedings, 2009, p. 86.

[50] Pelikan JM, Röthlin F, Ganahl K. Comparative report on health literacy in eight EU member states: the European Health Literacy Survey HLS-EU, online at http://ec.europa.eu/chafea/documents/news/Comparative_report_on_health_literacy_in_eight_EU_member_states.pdf.

[51] WHO, From Innovation to Implementation: eHealth in the WHO European Region, 2016, p. 14.

[52] Cashen, Margaret, S., Dykes, Patricia, Gerber, Ben, eHealth Technology and Internet Resources: Barriers for Vulnerable Populations, Journal of Cardiovascular Nursing, Vol. 19, No. 3, pp. 209-214, 2004, p. 210.

trust of the users. This could prove to be a difficult barrier to wider adoption of eHealth services, especially those which collect, share and analyse user data.

The issue of big data in health has already been considered by a 2016 European Commission report. Among the recommendation of the report are both raising awareness among people of the benefits of big data in health and fostering a positive attitude towards it, as well as aligning existing legal and privacy regulation with big data in health.[53]

4.2   DRIVERS, NEEDS AND BARRIERS WITHIN LOCAL GOVERNMENT SERVICES

The drivers, needs and barriers for local government services have already been covered to some extent by the CLARITY project in Deliverables 2.1 *Drivers in the up-take of open eGovernment Services* and D2.2 *Preliminary Needs Assessment.* This section draws on the work already done for these two reports, on additional desk research, interviews and extensive input from the two local public authorities who are partners to CLARITY – The City of Zaragoza in Spain and the Municipality of Skelleftea in Sweden.

4.2.1   Drivers

A strong driver, emerging from the literature and interviews with experts working in local public service delivery is the driver to deliver better services and deliver them at lower cost by using electronic means[54]. This is also a driver that is repeated throughout all four focus areas as will become evident in the subsequent sections of this report. Public authorities across Europe are under pressure from austerity cuts and demographic changes, which see an ageing population requiring increasing health and social care arrangements. There are also strong policy drivers emerging from both the EU[55] as well as national governments, many of which have adopted a digital national strategy for moving towards open eGovernment services. These services are also envisioned to provide increasingly personalised approach through the "once-only" rule, by relying on e-Identification and big data processing. The availability of mobile technologies and citizen access to the internet is also documented as a strong driver to justify changing over to electronic services. Political and social changes towards a more open society, with calls from citizens for transparency and accountability, as well as their wish for more participation in government, especially local government emerges a clear driver.

Policy	EU eGovernment policy	National/local/regional eGovernment policies	Transparency and accountability
	eDemocracy	Changing role of government	Better public services

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[53] European Commission, Study on Big Data in Public Health, Telemedicine and Healthcare, Final Report, December 2016, p. 49 te seq, p. 54.
[54] See for example: European Commission (2013) A Vision for Public Services. https://ec.europa.eu/digital-single-market/en/news/vision-public-services
[55] Digital Agenda for Europe and EU eGovernment Action plans are two documents that appear throughout the literature and were also mentioned by our interview respondents

Technological	Internet connectivity	Smart phone availability	Big data
	New methods for service design		
Social	Demographic changes	Citizen centric services	Inclusivity and accessibility
	Civic participation		
Economic	Cutting costs of local service delivery	Efficiency in delivery of services	Budget constraints

Table 5 Drivers in Local Government Services

At the same time as governments are moving towards providing eServices, they are also working to improve services and making them more user-focused. A city manager that we interviewed told us that in the first instance the move towards eGovernment within their authority had mostly been about making efficiency changes within their own departments, but now the focus was very much on service design, and seeking consultation from citizens on what services they need and what the best way would be to deliver them.

4.2.2   Needs

Local Government needs

Prioritisation of eGovernment efforts

Having a strong national policy environment around digitalisation and open eGovernment services assists cities and municipalities greatly in their work within this field. It demonstrates prioritisation of these issues and encourages local public services to follow suit. Having a strong national policy environment also greatly assists smaller units, which may have less resources, in developing a policy and services to suit their structure and the needs of their citizens. Prioritisation of eGovernment policy also translates into support for earmarking both effort and funds for work in this area. Municipalities and cities need a long-term policy planning and this is currently lacking according to an interview respondent that works as a digitalisation and eGovernment advisor to local governments in Sweden. He claims that now is the time for local governments to sit down and plan in detail and from the very foundations of services. It is common that planning is too short term and too focused on ideation (which is then not followed up through to implementation). Local governments need clear goal-setting and roadmapping with clear steps on how to get to their desired future. This will only happen if local governments are confident enough and have resources to prioritise eGovernment services, and this is more likely only happen if the national policy framework is strong enough.

Education and training

There is a reported gap in skills and expertise within local government to ensure that staff can give shape to, and deliver, open eGovernment services. Therefore, there may be a strong tendency to rely on industry to provide guidance in these matters, which may result in technology focused solutions, rather than user focused. Overall, local governments need more

education and training on multiple levels (from top management to frontline staff). Education and training need to focus on updating digital skills in general, as well as teach service staff in eService/service design and assist them in developing more skills in facilitating user participation and user-centred design in public e-service development.[56] Data skills, that focus on data collection, data formats, data analytics and data storage are also areas where training and updating of skills is needed.

The ability to procure the right service designs and formulate new needs and requirements for vendors of ICT services needs to be strengthened so that procurement of services is evidence based. Here, cities and municipalities need to take the lead to procure systems and solutions that meet their needs, as well as citizens' preferably for the long term and this will take a specific skill set, which currently is not very strong within local governments.

Flexible, open and scalable systems

Flexibility and scalability of ICT systems is an important part of public sector need. Digital service infrastructure should be flexible and should be able to address changing demands from public bodies as well as citizens in terms of content, use and development. Currently, local governments struggle with old legacy systems that are not integrated, and thus cause delays in service provision as data and information may not be flowing adequately between departments. There is a need for new systems that are flexible and scalable, in that they can work for cities, as well as smaller municipalities. Open source can also benefit in this respect as it allows easy amendments to suit different local contexts.

Data policies and practices

So that public authorities can provide reliable, seamless and data driven eGovernment services it is imperative that they can minimise administrative burden on citizens through implementing "once only" principles. Data is also needed for internal use, to monitor and amend services. Opening up data is also important, so that citizens and businesses can use the data for innovation, new knowledge and creation of public services. In many municipalities and cities, data practices are underdeveloped and our expert interview respondent maintained that even though things were slowly moving in the right direction there was still a lot of work that needed to be done so that the council in question could use its data to its full potential.   Within local government there is overall a strong need for data management policies and skills that help guide this work.

Citizen needs

Access to public services and information

Citizens need access to information about public services to be able to navigate the landscape of different departments and governmental units. Citizens have complex needs, many of which

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[56] Holgersson, J. (2014) User participation in public e-service development - Guidelines for including external users. (PhD) University of Skövde, Skövde.

are associated with life changes (e.g., births, marriages/civil partnerships, divorce, buying property, setting up businesses etc.) and it is important that they can easily locate information and appropriate communication/service channels for assistance or resolving of issues[57].

Public services should be accessible. For some this may mean that access is entirely ICT enabled, for others this may mean face-to-face contact, or mixture of the two approaches. Dealing with public service providers should not be time consuming or require substantive effort in terms of submitting paperwork and repeat phone-calls or meetings. Access for people with disabilities and people who speak different languages should also be ensured so as not to amplify inequality and exclusion that these groups may already experience.

Simple communication – "once only principle"

Citizens may at time have complex needs (e.g., housing, health and education) and they need to be able to communicate these without having to tell and re-tell their stories to many different service units. As much of local services is delivered in silos "(t)his can mean individuals are not always treated as a whole person and have to get support from a number of different and un-coordinated services."[58] This can also be the case for a simple need, like buying land or seeking building permission, where citizens may have to go to submit multiple documents to different departments, some of which may be electronic and some that may not.

Responsive services – being heard

Once contact has been initiated, it is imperative that citizens are met with a response that is clear and easily understood. It is also important for increasing trust in public services to have an open and transparent feedback and complaints mechanism in place. This can be for reporting issues in their local neighbourhood or to give feedback on new or established services. Citizens are more engaged now and have an expectation that their voice is heard within local government[59]. Our interviewers expressed this same sentiment and maintained that citizens have high expectations of public service delivery and they want to be involved their local communities and how local services are delivered.

Protection of personal data – data ownership

Lack of trust in how the government manage citizen data, and concerns about lack of data protection, and privacy safeguards, can discourage citizens from using electronic services.[60] The EU eGovernment Action Plan 2016-2020 stipulates that in order to increase trust in and take-up of digital services, "(a)ll initiatives should go beyond the mere compliance with the

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[57] Institute for Government, (2015) *Joining up public services around local, citizen needs: Perennial challenges and insights on how to tackle them.* (Online) https://www.instituteforgovernment.org.uk/sites/default/files/publications/4564%20IFG%20-%20Joining%20up%20around%20local%20v11c.pdf

[58] Ibid., p. 7

[59] Open Government Guide (no date) Establish easy feedback mechanisms for public services. (Online) http://www.opengovguide.com/commitments/establish-easy-feedback-mechanisms-for-public-services/

[60] Oxford Internet Institute, "Breaking Barriers to eGovernment: Overcoming obstacles to improving European public services." Modinis Study, Contract no. 29172. 30 August 2007 (p 6) https://www.oii.ox.ac.uk/archive/downloads/research/egovbarriers/deliverables/1b/A_Legal_and_Institutional_Analysis_of_Barriers_to_eGovernment.pdf

legal framework on personal data protection and privacy, and IT security, by integrating those elements in the design phase."[61]

According to a report from the Information Commissioners office in the UK the recurring themes, emerging throughout the research literature, of what citizen's want and need from data protection, are: 'Control over their personal data; Transparency – they want to know what organisations will do with their personal data; To understand the different purposes and benefits of data sharing; Security of their personal data; and Specific rights of access, deletion and portable personal data.'[62] Control and access to their personal data for citizens is imperative to increasing trust in data collection, storage and analytical practices of eGovernment.

Need for personal contact

The digital divide is still present in Europe today and should be considered in open eGovernment service provision. Although ICT enabled services are more efficient, there are still citizens that cannot access or use the internet for different reasons. The digital by default principle, as outlined in the EU eGovernment action plan 2016-2020 states that public administrations, while aiming to deliver more services digitally, should keep "other channels open for those who are disconnected by choice or necessity. In addition, public services should be delivered through a single contact point or a one-stop-shop and via different channels."[63]

Europe is a "mixed bag" when it comes to using the internet to use public services, consequently continuing the maintenance of other communication channels, e.g., face-to-face or telephone service desks, is necessary to help protect citizens against social exclusion and a lack of access to public services. The digital divide, which appears along the lines of income, age, digital skills, or geographical location, means that some citizens have a limited ability to participate using open eGovernment services while others may feel much more at ease, e.g., people who have grown up with access to ICTs.

4.2.3   Barriers

Local Government

PWC in a study for the European Commission (2016) identified 14 barriers that discourage public administrations to adopt an open eGovernment approach:

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[61] European Commission, Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and The Committee of the Regions, EU eGovernment Action Plan 2016-2020: Accelerating the digital transformation of government. COM(2016) 179 final, Brussels 19 April 2016. https://ec.europa.eu/digital-single-market/en/news/communication-eu-egovernment-action-plan-2016-2020-accelerating-digital-transformation p.3

[62] Information Commissioner's Office, Data protection rights: What the public want and what the public want from Data Protection Authorities. Prepared for the European conference of Data Protection Authorities, Manchester May 2015. https://ico.org.uk/media/about-the-ico/documents/1431717/data-protection-rights-what-the-public-want-and-what-the-public-want-from-data-protection-authorities.pdf

[63] European Commission, Communication from the commission to the European Parliament, The Council, The European Economic and Social Committee and The Committee of the Regions, EU eGovernment action plan 2016-2020: Accelerating the digital transformation of government, COM (2016) 179 final, Brussels 19 April 2016. https://ec.europa.eu/digital-single-market/en/news/communication-eu-egovernment-action-plan-2016-2020-accelerating-digital-transformation

Lack of leadership and political commitment	Inertia of the status quo	**Lack of financial resources**
Lack of institutional an individual capabilities and skills	Legal constraints	Uncertainties regarding sustainability and business model issues
Legal uncertainties regarding responsibility and accountability	**Poor data quality**	Lack of representativeness
Multilingualism	**Lack of common standards and specifications (interoperability)**	**Perceived loss of control**
Difficulties identifying and creating demand from citizens and businesses	Lack of trust	False or unrealistic expectations.

This list is comprehensive and covers all the key barriers we found in our interviews with local government respondents, which we have marked in bold. In our interviews, we found that there were many and complex barriers that face local government management in moving public services online, making them more open and citizen centric. To some extent these barriers can be traced back to the fragmentation of local government services, which tend to be broken down by geography, multiple departments, different organisational cultures, and "a patchwork of commissioning, funding and regulatory processes."[64]

In our interviews, we however found that people were optimistic in their work and they realised that "change would take time", as at the same time they are moving towards ICT enabled services, they are also moving towards citizen centric services, which takes a new way of thinking for local governments. We found a strong focus on collaboration, where municipalities and cities worked together to share good practices and resources. This in particular works well for smaller local government units, which may suffer from underfunding and lack of skills to a greater degree than larger units, such as cities.

We also found that work is taking place in terms of recognising barriers within different fields, such as legal, technical (legacy systems) and social/cultural (staff resistance) – and plans are being made to mitigate these within different capacities.

Barriers to citizens' up-take of local eGovernment services

Lack of information and awareness

Citizens may not be aware of the open eGovernment services that area available to them and need information on where they can be accessed and how they are navigated. People who have become accustomed to dealing with government in a face-to-face or telephone service model may not be aware that these can these functions can now be carried out via the Internet or on a mobile phone. Once changes have been implemented, service users may be resistant to using the new ways of communication for a variety of reasons, e.g., they liked the service delivery

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[64] Institute for Government, (2015) *Joining up public services around local, citizen needs: Perennial challenges and insights on how to tackle them.* (Online) https://www.instituteforgovernment.org.uk/sites/default/files/publications/4564%20IFG%20-%20Joining%20up%20around%20local%20v11c.pdf

as it was, they liked the face-to-face contact, they have difficulty in navigating the new services. Lack of guidance and information as new services are implemented can be a strong barrier to uptake, thus allowing for a transition phase where face-to-face/telephone contact is still available is important while service users become comfortable and confident in using new services. Open eGovernment services should also be easy to find and usability and accessibility should be strongly considered in the design and development phase.

The digital divide

Although the digital divide in Europe has narrowed considerably over the past few years, there are still groups within societies that are not able to access the Internet and/or do not have the digital skills available to use open eGovernment services. In the 2015 European Commission´s Digital Agenda Scoreboard it appeared that half of the less-educated and the elderly in the population do not use it regularly, and about 58 million EU citizens (aged 16-74 years old) have never used it at all[65]. The digital divide is manifested along the lines of geography, gender, age, social and economic status as well as ability. There is an ongoing concern that pockets of society, some of whom most need the benefits of ICTs and open eGovernment services are not able to access them. A focus on eParticipation efforts alongside open eGovernment service development could assist in mitigating this barrier as one of our interviewers discussed. He works for a city in Belgium, which has set up an eParticipation team within the open eGovernment service team to assist with reaching populations that are disconnected from ICTs.

Lack of trust

In the EC´s Digital Scoreboard from 2014 EU citizens were surveyed on the reasons for not using online channels for submitting official forms. It emerged that just over 30% trust submission of information by paper more than by doing so by electronic means. Mistrust also appears in that over 15% have concerns about protection and security for their personal data.[66] This combined with low trust in national governments (62% of surveyed citizens in the Eurobarometer survey in 2015 don´t tend to trust their government) is a clear barrier to the up-take of eGovernment services and is likely to be a complex barrier to mitigate.

4.3   DRIVERS, NEEDS AND BARRIERS WITHIN SMALL BUSINESS & SELF-EMPLOYED SERVICES

This section focuses on giving an overview of drivers, needs and barriers to up-take of open eGovernment services for SMEs and Self-employed persons. As becomes evident, this group is varied and includes single person initiatives up to a large SME that has up to 250 persons employed. Self-employment and SMEs work within many different sectors, however these

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[65]   European Parliament, (2015) Briefing: Bridging the digital divide in the EU. (Online) http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/573884/EPRS_BRI(2015)573884_EN.pdf
[66] European Commission, Egovernment – Developments in eGovernment in the EU 2014 (PPT) 28 May 2014. https://ec.europa.eu/digital-single-market/news/scoreboard-2014-developments-egovernment-eu-2014

enterprises do have some commonalities in their needs regarding public services and barriers they may face in their up-take of open eGovernment services.

Small businesses are widely regarded by national and international bodies, as an "engine of economic growth", however, establishing a new small business in many EU countries can be difficult because of a lack of appropriate support. Micro, small and medium-sized enterprises (SMEs) constitute 99% of companies, 67.1% of private-sector jobs and more than 80% of employment in some industrial sectors (e.g., manufacture of metal products, construction and furniture) in the EU. [67] [68] SMEs are seen as an important part of the financial system of Europe and each member states and there is a strong emphasis on maintaining and driving a strong SME sector for economic and social benefit.

Defining a Small & Medium Enterprise is itself is a challenging task since every country has their own definition for an SME and specific criteria. For this report we will rely on the EU definition, which is based on the parameters of employment, turnover and asset size. Commission Recommendation 2003/361/EC defines micro, small and medium-sized enterprises as follows: SMEs should employ less than 250 employees and have an annual turnover of not more than €50 million or an annual balance-sheet total of not more than €43 million.[69]

A self-employed person is defined by Eurostat as "the sole or joint owner of the unincorporated enterprise (one that has not been incorporated i.e. formed into a legal corporation) in which he/she works, unless they are also in paid employment which is their main activity (in that case, they are considered to be employees). Self-employed people also include: unpaid family workers; outworkers (who work outside the usual workplace, such as at home); and workers engaged in production done entirely for their own final use or own capital formation, either individually or collectively. "[70] According to an IPPR report from 2015, just under 14% of workers in Europe are self-employed. Since 2010, of the total of new jobs 40% of these have been self-employed jobs, fuelling a debate of whether this is due to reasons of rise in entrepreneurial spirit or rise in precarious and insecure jobs.[71]

Men are more likely to be self-employed than women and the likelihood of self-employment increases with age. "Self-employed workers are more likely than the economy-wide average to work in the following industries: agriculture, forestry and fishing; construction; and professional, scientific, technical, administration and support service activities. More than one-fifth of the British self-employed work in the construction industry (830,000), nearly three times the proportion of employees"[72]

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[67] Source: Eurostat, key indicators for enterprises in the non-financial business economy, EU27, 2005
[68] Small Businesses First EN Europe is good for SMEs, SMEs are good for Europe 2008 edition Ref. Ares(2014)76474 - 15/01/2014
[69] European Medicines Agency (2017) Addressing the needs o small and medium-size enterprises (SMEs) and promoting innovation. (Online) http://www.ema.europa.eu/docs/en_GB/document_library/Leaflet/2011/03/WC500104237.pdf
[70] Eurostat, statistics explained. Glossary: Self-employed (2013) (Online) http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Self-employed
[71] Institute for Public Policy Research (2015) Self-Employment in Europe. (Online) http://www.ippr.org/files/publications/pdf/self-employment-Europe_Jan2015.pdf?noredirect=1
[72] Ibid., p.4

4.3.1 Drivers:

The drivers behind provision of open eGovernment services cross over significantly with drivers identified within the other three areas covered in this report.   There are however some nuances, one being the importance of recognising and reducing administrative burden on SMEs, which derives from the Small Business Act for Europe (2008)[73] and associated policy actions. The SBA invites the Member States specifically to "support the development of an electronic identity for businesses, to enable e-invoicing and e-government transactions."[74] ICT enabled services are thus seen as key to reducing administrative burden and shortening response times so that enterprises can be set up quickly and effectively.

Policy	Providing more efficient services to SMEs The Small Business Act for Europe (2008)	Reducing administrative burden Make public administration responsive to SMEs needs	Participation in public procurement
Technological	Mobile technologies	Open/Big data	Internet connectivity
Social	Stimulating entrepreneurship	Employment	
Economic	Economic challenges for SMEs	SMEs as vehicles for economic growth	Reducing unemployment

Table 6 Drivers for the developmen of eGovernment services for SMEs and Self-employed citizens

4.3.2 Needs

Needs for open eGovernment services from SMEs & Self-employed persons

In order to ascertain the needs, in addition to drawing from literature review and interviews, 2 we also use the findings from telephone interviews with 115 SMEs that were carried out by CLARITY partner, The Municipality of Skelleftea in Sweden in preparation for their work to build more efficient eGovernment services for SMEs in the area.

Access to advice and information (SMEs & Self-employed)

Taking into consideration the size of SMEs, what they struggle with is the strength of expertise they have on board and limited resources they may have to dedicate to administrative and legal

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[73] European Commission, Communication from The Commission To The Council, The European Parliament, The European Economic And Social Committee And The Committee Of The Regions. "Think Small First" A "Small Business Act" for Europe. Brussels, 25.6.2008 COM(2008) 394 final. http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008DC0394&from=EN
[74] Ibid., p.16

work that is required to set up and run a business. It is therefore imperative that advice and information is readily available and in easy to understand language so that non-experts can understand it. This is especially true of legal texts which can be complicated to lay people, and invite misunderstanding. This need is very strong, specifically in the planning and set-up phase of an SME. There is also a strong need to be able to conduct all necessary steps from a distance, for people who do not live locally.[75]

SME founders need information on how to comply with legislation and building regulation, and how to register a company. Currently, the difficulty is that information and advice is not all in one place (e.g., health and safety, building, environmental regulation, labour law) but is filed under many different governmental departments. Non-compliance can be costly and can especially threatening to a small business that is starting out with limited finances.

Access to information about funding, public procurement opportunities as well as information on how to trade within the European Single Market would also greatly benefit SMEs. This information is often difficult to find and this is where public authorities could greatly assist SMEs in order to support their growth. The Small Business Act recommends setting up SME information portals and having single contact points for SMEs, which could offer information and advice on how to set up, and run a business.

In the Skelleftea survey, the SMEs also expressed a wish for reminders for follow up services, such as inspections and health and safety visits and clear information as to what might be expected in such visits so that they can better prepare.

Reducing costs and administrative burden of setting up a business (SMEs & Self-Employed)

"Administrative burdens regard the costs incurred by businesses in meeting legal obligations to provide information on their action or production"[76] SMEs due to their size are more vulnerable to the effects that labour intensive practices can have on the day-to-day running of the company. Hence, repeat visits, duplication of forms, lengthy application processes can be very detrimental to Smaller SMEs. These companies may not have a dedicated staff member who deals with administration, so a move towards "once only" document submission is a strong need expressed by SMEs. They would also see better cooperation between departments, which would require better use and sharing of data.

Easier and more straightforward way of delivering tax returns and receiving calculated associated benefits is also a need expressed by SMEs and Self-employed persons. Self-employed persons may have rapid changes in the amount of work they have and in order to not pay too much or too little tax they have a strong need for a responsive tax system where they can submit changes easily and for these to recognised and calculated quickly. Self-employed workers are more often subject to greater financial instability, particularly when starting out or

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[75] Hogrebe, Kruse and Nüttgens (No date) One Stop Egovernment For Small and Medium- Sized Enterprises (SME): A framework for Integration and Virtualization of Public Services (Online)
http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.462.2202&rep=rep1&type=pdf
[76] Costopoulou, C. and Ntaliani, M. (2010) Measuring Administrative Burdens of e-Government Services for Rural SMEs. Conference Paper – World Summit on Knowledge Society. 2010: Organizational, Business, and Technological Aspects of the Knowledge Society pp 435-442. DOI: 10.1007/978-3-642-16324-1_52

when businesses are not performing well and work is irregular and insecure. Responsive tax and benefits system for self-employed persons could greatly alleviate these dips in income.

Need for digital skills (SMEs & Self-employed)

In order to reap the full benefits of open eGovernment services, SMEs, especially those who are non-technical, will need education and training for the digital skills needed to access said services. This is also true of self-employed persons which operate in non-technical sectors and may lack technical skills to be able to use the open eGovernment services aimed at assisting them, such as tax information and reporting mechanisms, as well as funding and any benefits they may have rights to.

Access to public procurement (SMEs)

According to the SBA "SMEs face obstacles when participating in public procurement markets, often simply because smaller businesses are not aware of opportunities and/or are discouraged by procedures and because public authorities may find it more comfortable to award certain contracts to large enterprises with a track record rather than to young innovative companies."[77] SMEs need greater information on public procurement opportunities, simplified and responsive application procedures and access to advice on how to partake in public procurement opportunities. As is presented above, SMEs may have less specialised man-power and effort to dedicate to extensive application procedures so a simplification of the process would greatly assist in meeting this need.

Access to open data

The economic and social potential of open data is widely acknowledged and open Government data (usually a free resource) can a strong opportunity for SMEs to build and monetise on open-data-driven services. There is thus a strong need for open and good quality government data sources, to help SMEs to realise this. Governments should focus on making their data accessible and open at no or low cost so its financial benefits can be realised[78]. Barriers to SMEs and Self-employed people using open data to create business opportunities and growth include lack of available open data or cost barriers to using data sources. These barriers came very clear in our interviews with experts in open government data within a city council, and an owner of an SME which specialises in creating transport apps specifically aimed at assisting disabled people. Currently there is a lot of work going on within many national and local public authorities to make their data open and available. There is a strong awareness of the value hidden in open data and how it could benefit businesses such as SMEs. This work however takes time, specialised skillset and resources, some of which many councils have not got in abundance.

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[77] European Commission, Communication from The Commission To The Council, The European Parliament, The European Economic And Social Committee And The Committee Of The Regions. "Think Small First" A "Small Business Act" for Europe. Brussels, 25.6.2008, p. 10. COM(2008) 394 final. http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52008DC0394&from=EN

[78] GovLab (2015) Open Data: A 21st Century Asset for Small and Medium-Sized Enterprises. (Online) http://thegovlab.org/open-data-a-21st-century-asset-for-small-and-medium-sized-enterprises/

In the cases where data is available the most significant challenges SMEs face include those concerning data quality and consistency, insufficient financial and human resources, and issues surrounding privacy when dealing with personal data. Our respondent also flagged up costs to subscribing to data sets such as transport data which had proved a barrier in the development of his accessibility app and expanding its development to cover different countries.

4.3.3   Barriers

Barriers to the up-take of open eGovernment services within the area of SMEs and Self-employed persons were found to be mostly related to lack of awareness of services and information and lack of digital skills and low internal admin capacity.

Lack of awareness of available services and information

SMEs and self-employed persons may lack awareness of available services and information that is directed at them. This may be the result of low technical skills, different languages, and/or lack of access to ICT enabled technology. Communication from public authorities here needs to take this into account and more channels may need to be employed to deliver information and advice to those who need it.

Low technical skills

Non-technical SMEs may suffer with low digital skills needed to make use of open eGovernment services and thus risk losing out on the efficiency, access to finance and information that can come with using ICTs in their operation.[79] The digital divide in terms of capability to access open eGovernment services due to lack of skill, knowledge and connected and up-to-date equipment must be taken into consideration when designing services for SMEs.

Cost of infrastructure

Setting up infrastructure that allows for full access to all available open eGovernment services can be costly for small enterprises, especially when it comes to buying IT systems. For SMEs that wish to provide data driven and/or high-tech services, this can be a difficult barrier to cross. For lower-tech SMEs smartphone solutions and mobile access would greatly assist as these are low cost solutions. However, currently only 1 in 4 public service websites in European countries is mobile-friendly[80] which is a barrier for SMEs and Self-employed people to access information and services designed to meet their needs.

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[79] Ibid.
[80] Future-proofing eGovernment for a Digital Single Market: final insight report / D. Tinholt et al., European Commission, 2015, p. 8.

4.4   DRIVERS, NEEDS AND BARRIERS WITHIN DISABILITY SERVICES

This section will focus on outlining the key drivers, needs and barriers within the provision and take-up of open eGovernment services within Disability services, which cover public services to citizens with physical, intellectual and mental issues. The literature review includes a strong focus on assistive technologies and assistive ICT, some of which are provided as part of public services and some may be purchased by the users themselves. Assistive Technology (AT) is a generic term for any technology used to assist disabled people to learn, make the environment more accessible, enable them to compete in the workplace, enhance their independence, or otherwise improve their quality of life. As such it may include anything ranging from mobility devices such as walkers and wheelchairs, to hardware, software, and peripherals that assist people, and are referred to as assistive ICT.

Disability services, as we found, cross over significantly with health, education and social care, and in our literature review and interviews we found many of the same, or similar, drivers, needs and barriers present, when it comes to the design, development and provision of open eGovernment services within these two CLARITY focus areas. Furthermore, the literature (especially policy literature) on both focus areas includes a strong focus on responses to an aging population, whose care and assistance is seen to fall within care services to the disabled, social care and health services.

4.4.1   Drivers

A common ground for current developments in disability services in Europe is the UN Convention for the Rights of Persons with Disability. As of March 2017, the convention has been signed by 160 countries and ratified by 172 countries.[81] Its article 9 provides the first universal framework for addressing the accessibility of Information and Communication Technologies and assistive technologies.

The review of literature and interviews with experts working within this area revealed the following drivers:

Policy	Equality of opportunity	Poverty reduction	Independent living
	Standards of living	Accessibility	Inclusion
Technological	IoT	GPS	Sensors
	Speech recognition	AI	Big data
	Assistive ICTs	Open source software	Apps
Social	Ageing population	Care to dependency ratio	Shift from institutional care to family/community

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81 United Nations, Convention on the Rights of Persons with Disabilities (CRPD), no date.
   https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html

			care or assisted living[82].
Economic	Efficiency in service provision	Cost savings	

Table 7 Drivers in the development of eGovernment services for disabled citizens

The drivers mentioned here differ from health in that there is a greater number and variety of technological drivers that are mentioned in the literature and in our interviews with experts in the development of ICT enabled accessibility services. These technological advancements are seen to have great potential for developing more sophisticated solutions for disabled people and offer assistance in many aspects of everyday life. App technology was specifically mentioned as a strong driver as these are offer the ability for low-cost solutions for disabled people as well as disability service providers.

4.4.2   Needs

Needs of public authorities and service providers

Efficiency needs

As with health and local government services, the needs of service providers are broadly to be able to offer better services to a growing user group at a preferably lower cost by using ICTs. This is due to pressures from the drivers above e.g., demographic trend of an ageing population, shift in care-models from institutional care to community care, and a shift in the care to dependency ratio, all of which are seen to put increasing pressures on already stressed budgets. ICT enabled disability services have the potential to offer efficiency in providing care as well as increasing accessibility and independence, but may have high costs associated with them, especially in terms of high tech and sophisticated solutions. Such technologies may involve specialised equipment for use by disabled people or mainstream technologies bundled together or configured to serve the needs of disabled people.[83]

It is worth mentioning here that assistive technologies (AT) that support care and participation of people with disabilities form part of, and are deployed through, service delivery systems (SDS)[84] and are part of government's social care system. Each part of an individual care solution may be funded and handled through different departments, which can complicate service delivery for any one disabled person.

Education and training needs

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[82] European Expert Group on the Transition from Institutional to Community-based Care (2012), The Common European Guidelines on the Transi on from Institutional to Community-based Care, (Online) www.deinstitutioonalisaonguide.eu

[83] European Union (2014) Health and social services from an employment and economic perspective, EU Employment and Social Situation, Quarterly Review, December 2014 (Online) http://ec.europa.eu/social/BlobServlet?docId=13356&langId=en.

[84] AAATE & EASTIN (2012) Service Delivery Systems for Assistive Technology in Europe Position Paper (Online) http://aaate.net/wp-content/uploads/sites/12/2016/02/ATServiceDelivery_PositionPaper.pdf

As with the other focus areas presented in this report there is a clear need within accessibility services for education and training with regard to using ICT and assistive ICT to better serve people with disabilities. The social care sector tends to suffer from a technological skill gap, as is identified in a 2014 in-depth study in the UK of digital capabilities in social care.[85] Managers and staff expressed need for further education and training in how to better use ICTs in their work, as well as more frequent and up-to date presentations on new assistive ICT solutions that were catered for a social care audience.

Need for ICT equipment and mobile internet connection

The social care sector has suffered from austerity measures throughout Europe, which results in a low spend on ICT equipment. There is a need for more mobile solutions (tablets and mobile phones), better network connections to allow staff to be connected while on home visits. Integration of systems was also mentioned as an issue, as many service users are serviced from more than one department (e.g., education, health and social care) and these systems are often not connected, so data sharing becomes a complicated and time-consuming task.

Service user needs

The needs of disabled people differ from person to person and range greatly in complexity. According to Eurostat data, disabled people needs for support also differ from country to country. In addition, the need for support increases with age and is inversely related to education level and financial status. People living alone, unemployed or economically inactive have greater support needs, though the statistics do not distinguish between people with various levels of disability or types of support.   On average, the need for assistance was quite similar for disabled persons aged 15–44 (31.5 %) and those aged 45–64 (31.8 %), but rose to 44.2% for those aged 65 and over and in some countries (Lithuania, Estonia, France, Portugal and Spain) even higher to 59.9 %. People with disabilities living alone are the most likely to report a need for assistance (43.7 %) in comparison to only (27.8 %) of people with disabilities living in households with others and even with children[86].
According to the European health and social integration (EHSIS) survey (2012), disability is defined by restriction in participation in any of the following life areas due to a basic activity difficulty or a long-standing health problem (LHPAD)[87]. Hence, individual needs with respect to disability have be defined in relation to these areas and are driving social service provision.

Leisure pursuits & social contact: Leisure pursuits (in other words, hobbies or interests that involve spending time with other people) is one of the two life areas where more than half of all EU-27 citizens with disabilities in the EU-27 reported that their disability restricted their

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[85] Sara Dunn Associates (2014) Digital Capabilities in social care. (Online) http://www.saradunn-associates.net/fileadmin/saradunn/downloads/clients/Skills_for_Care/Digital-Capabilities-Research-Report-300714-FINAL.pdf

[86] The Academic Network of European Disability Experts (ANED), DOTCOM: the Disability Online Tool of the Commission, no date. http://www.disability-europe.net/dotcom

[87] Eurostat, Statistics explained: Disability statistics-barriers to social integration. (no date) http://ec.europa.eu/eurostat/statistics-explained/index.php/Disability_statistics-barriers_to_social_integration#Life_areas_where_people_are_disabled

participation. An associated life area is social contact which 2% of all persons with disability state to experience limitations with[88].

Mobility, Transport and access to buildings: Mobility, defined here as the ability to leave one's own home, was the second most disabling factor with almost 53% of persons with disability expressing dissatisfaction. Mobility is not only linked to leisure pursuits, but also to people's ability to physically participate in employment and education. Availability of transport options for is also linked to mobility and was cited as a key barrier to independent living by 37.7% disabled EU citizens. Disabled women were more likely than disabled men to report barriers to mobility, transport and the accessibility of buildings

Education and training: Based on 2011 statistics, 30.7 % of people aged 15-34 having a basic activity difficulty were neither in employment nor in any education or training in the EU-28. This is 15% higher than non-disabled people. Education is fundamental for individuals' wellbeing and independence; hence EU has set a goal that at least 40% of disabled people should complete tertiary education with existing levels ranging between 20-25% depending on the type of disability[89].

Employment: While only 38.6% of disabled citizens mentioned employment as a source of dissatisfaction, the result is confounded by demographics as more than 50% of persons with disability are aged 65 and over and therefore have retired. While statistics vary considerably across countries (see **Error! Reference source not found.** below), 19% of all 15-64 year-olds i n the 28 EU Member States had some limitation at work, citing personal or environmental factors (41 %), longstanding health problems (i.e. one lasting at least 6 months and requiring monitoring, observation or care) or a basic activity difficulty only (38 %) or both (21 %) as key reasons for non- employment. Personal factors cover include family responsibilities, lack of qualifications, etc. while environmental factors included working hours, types of work, mobility issues to and from work, pointing to the importance of issues of mobility, transport and physical access to buildings. So far, employment has been facilitated primarily by special working arrangements, less so by special equipment and even less so by personal assistants.[90]

Financial independence: Paying for the essential things in life remained a key issue for 22.7 % of persons with disability, particularly in smaller, poor countries such as Latvia, Greece and Hungary, Romania and Bulgaria where such percent reaches 76.4 %. The combination of the overall poor economic climate, austerity measures in such countries has deterred or delayed investment in disability services, and has probably compromised the ability of family and friends to contribute[91].

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[88] The Academic Network of European Disability Experts (ANED), DOTCOM: the Disability Online Tool of the Commission, no date. http://www.disability-europe.net/dotcom
[89] The Academic Network of European Disability Experts (ANED), DOTCOM: the Disability Online Tool of the Commission, no date. http://www.disability-europe.net/dotcom
[90] Ibid.
[91] Ibid.

It is clear that ICT enabled accessibility services have the capacity to meet many of the above needs, at least partly. ICT for learning, employment, accessibility and leisure are all well developed. There are however barriers to their up-take which will be listed in the next section.

4.4.3   Barriers

For disability service providers

Technological access and skill levels

Like with other focus areas presented here, technical skill gap remains an issue within accessibility services. Research on digital capabilities in social care in the UK revealed that although staff across all levels have a positive attitude towards using ICT in their work, social care managers in reported a significant shortage of digital skills across all levels of the workforce and over a third said their workforce does not have sufficient basic online skills. The same survey revealed that "the most frequently cited digital capability shortage concerned insufficient basic understanding of digital assisted living technologies".[92] Furthermore, use of technologies such as smartphones and tablets is very underdeveloped in this sector, and while social care workers are working with users in their homes they are often not able to connect to the internet.

Data sharing and security

Accessibility services extend across the public service spectrum and many users are supported by a range of public services which may fall within different departments (e.g., education, social care and health). This may involve significant data sharing between departments, which may have different systems. The survey of digital capabilities revealed that organisations had concerns about digital data security and the reliability of their digital systems and would welcome guidance in this respect to enhance trust of both managers and staff.

Implementation of community-care or independent living for disabled people,

Despite Member State policies supporting independent living, several barriers are observed. First, not all countries have the same level of commitment to de-institutionalisation policies and in most member states there is continuing reliance on institutional care and informal family carers, sometimes without any support financial or otherwise. Only few countries have implemented their stated strategic commitments due to limitations of local resources and/or regional interpretation of strategic frameworks; the lack of a policy lead; policy being underdeveloped and bureaucratic assessments that focus on processes rather than meeting needs.

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[92]Sara Dunn Associates (2014) Digital Capabilities in social care. (Online) http://www.saradunn-associates.net/fileadmin/saradunn/downloads/clients/Skills_for_Care/Digital-Capabilities-Research-Report-300714-FINAL.pdf

With respect to self-determination regrading assistive technology, user choice was often over-ridden by a medical assessment of 'functional limitations', portability of systems between work and home, bureaucracy, and availability of funding for equipment. With respect to personal assistance, only in Sweden there was user-driven personal assistance. Twelve countries (Slovakia, Finland, Netherlands, Denmark, Austria, Germany, Ireland, United Kingdom, Spain, Belgium, Norway, France) provide a combination of services and self-directed personal assistance was the norm. Nine countries (Poland, Estonia, Italy, Bulgaria, Romania, Latvia, Lithuania, Portugal, Iceland) provide a combination of social services and personal (but not self-determined) assistance was the norm. In Malta and Greece, there was no support – service led or otherwise[93.]

Prioritisation of disability services

 According to a report, disability services are classified under the Social protection category which includes a number of social services related to sickness and disability, old age, survivors, family and children, unemployment, housing, social exclusion. These fall under the Individual, elective and opportunity-providing human services, providing for the general welfare and basic living requirements of individuals, families, and not under collective and mandatory public administration administrative services that citizens must use as they concern obligations legally enforced by the government (paying taxes, various registrations requirements, permits, personal identity, etc.). In their review of Open Government Services only 9% related social protection, while 62% related to compulsory general public services.[94]

Cost

This barrier applies to both service providers and users, due to different funding models available for accessibility services. Assistive technologies can be very costly, which hinders their uptake by public authorities as well as users themselves. Employing assistive technologies may also change the way in which services are delivered, which may require organisational change and a change to service delivery models, all of which require additional costs. Education and skill advancement may also be required, as well as additional support for care users[95].

Barriers for service users with disabilities

Digital access, skills and training

According to a short report on ICT for disabled people, from the Parliamentary Office of Science and Technology in the UK , "over 80% of the population as a whole access the internet

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[93] Townsley, R., Ward, L., Abbott, D and Williams, V. (2010) The Implementation of Policies Supporting Independent Living for Disabled People in Europe:Synthesis Report (Online) http://www.disability-europe.net/theme/independent-living
[94] Galasso, G., Garbasso, G. Farina, G., Osimo, D. Mureddu, F. andn Kalvet, T (2016), Study on "Analysis of the value of new generation of eGovernment services" (Online) https://ec.europa.eu/futurium/en/system/files/ged/final_report_ogs_web_v3.0_0.pdf
[95] Galasso, G., Garbasso, G. Farina, G., Osimo, D. Mureddu, F. andn Kalvet, T (2016), Study on "Analysis of the value of new generation of eGovernment services" (Online) https://ec.europa.eu/futurium/en/system/files/ged/final_report_ogs_web_v3.0_0.pdf

regularly but this figure drops to 55% for those with disabilities."[96] Furthermore, aaccording to the Office for National Statistics, in May 2015, 27% of disabled adults had never used the internet, compared to 11% of non-disabled adults. In the vast majority of cases there are technological solutions available to allow users to get online, so the disparity is not directly caused by any impairment but are recognised to result from barriers to take-up such as the cost of equipment, social exclusion and a lack of appropriate training which are often increased by disability. When it comes to learning how to use ICTs there are also other barriers that hinder uptake of technical skills training which are lack of social connections (e.g., friends, classmates, and work colleagues) through which ICT skills are often learned through, this is especially true for older disabled people who are more isolated than the younger generations. Access to teaching facilities might be difficult or impossible, teaching styles are likely not to accommodate specific needs.

Financial barriers

Households with a disabled member are more likely to experience material hardship. People with disabilities are more likely to be unemployed and generally earn less even when employed due to discrimination in employment, lack of access to transportation, physical barriers to accessibility of buildings and technologies. In addition, people with disabilities may have extra costs resulting from disability – such as costs associated with medical care or the need for personal support and assistance, and of course assistive technologies. Because of such inflexible higher costs, people with disabilities and their households are likely to be poorer[97]. Hence, assistive technology can be extremely expensive, meaning that ICT spending is not given high priority by individuals and in many poorer countries (such as Cyprus, Greece, Bulgaria, Croatia) falls outside the scope of social protection provisions[98]. The increase in "apps" and access through mobile technology is working to slowly mitigate this barrier, to some extent. Expanding markets beyond regional or national boundaries may generate the volume necessary to achieve economies of scale and to produce assistive devices at competitive prices. While, centralized, large-scale collective purchasing or consortium buying, reducing duty or import taxes on such products or subsidising such devices can keep their retail costs down.

Barriers to do with physical or mental ability

Physical and mental barriers to accessibility can vary widely from person to person and throughout the course of their lives and in different settings. Broadly, there are 5 categories of impairments that solutions need to cater for:
- Auditory impairments involve hearing difficulties of various degrees. While multimedia on the Web provides many opportunities for people with auditory disabilities, it also poses

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[96] House of Parliament, Parliamentary Office of Science & Technology, (2012) ICT for Disabled People, p. 2. Available at http://researchbriefings.files.parliament.uk/documents/POST-PN-411/POST-PN-411.pdf

[97] World Health Organization (2011) World Report on Disability. (Online) http://www.who.int/disabilities/world_report/2011/en/

[98] http://www.disability-europe.net/dotcom

challenges when content is not designed to be accessible. For instance, audio content needs to have alternatives, such as transcripts and captions, or sign language, so that it is accessible for people with auditory disabilities.

- Physical, involves weakness and limitations of muscular control, pain that impedes movement, or even missing limbs. These may require tailored ergonomic or specially designed or voice controlled hardware.
- Speech, include difficulty in speaking that can be understood by others or by software and may require text-based services to interact.
- Visual involves various degrees of blindness (even colour blindness) that depending on its severity could be addressed as easily as enlarging or reducing text size and images or requiring that page structures are properly coded so that they can cater text-to-speech synthesis or audio descriptions.
- Cognitive and neurological, may require different types of web browsing methods, and often (but not always) co-exist with other impairments, e.g. hearing, physical, speech, and visual disabilities. Depending on the individual's particular needs, some people may require text-to-speech software to hear the information while reading it visually or use captions to read the information while hearing it. Some people use tools that resize text and spacing or customize colors to assist reading. Others may use grammar and spelling tools to support writing

4.5   HORIZONTAL DRIVERS, NEEDS AND BARRIERS IN OPEN EGOVERNMENT

This section concludes Chapter 4 with an overview of the horizontal drivers, needs and barriers that were found to apply across the four focus areas. These will be discussed and analysed further in the subsequent CLARITY deliverables, such as the *Gap Analysis* and *Blueprint.*

Horizontal Drivers

The European Union has a strong policy driver for open eGovernment and has numerous initiatives and policy documents advocating for change and funding to implement changes within government. Increasingly national, regional and even local governments are following suit and setting up their own eGovernment policies. The key drivers named behind moving from the traditional offline public service model is **increasing efficiency, lowering cost of service provision and improving services to citizens.**

Europe is facing **demographic changes** in the form of an **ageing population and migration** which will result in more need for public services, especially within health, social care and disability services. This is pushing governments to re-think the ways in which services are delivered, and they are increasingly adapting a **citizen centred service models** and involving citizens in design, development and implementation of public services. This is to ensure that services are designed specifically to meet their needs, which increases likelihood of up-take and use.

Technological development also drives the development of open eGovernment services in that its potential for allowing for **seamless connection and communication** within

government and between government and citizens. Furthermore, the ability to gather, analyse and store **data** to help deliver better services and create value pushes governments to both make their data available openly, as well as use data to improve their services. The principles of **transparency and accountability** emerge here as strong drivers as well, within a larger discussion about the role of government and **eDemocracy** as a way to enhance **citizen participation** in government.

Horizontal Needs

Service providers

Need for **up-skilling, training and education in ICT** for staff within public services emerges as a strong need throughout the literature and in the interviews. One respondent remarked that this is imperative so that governments can become sites for innovation for the purpose to moving towards open eGovernment services. Governments are slowly moving towards a more technical workforce and in conjunction with policy making are setting up new departments and teams that focus on government data and the digitalisation of services. We interviewed several experts that work within such departments and they all agreed that there is a **strong need for up-skilling and specific ICT training** for staff (from managers and to frontline service staff) and this lack of ICT skills is slowing down progress. There was also a reference to how vacant positions and new positions that were being advertised within government were modernised and invited people with different skillsets to apply, e.g. advertising for **strong ICT skillsets** and experience with service development and data analytics in addition to experience with public service provision.

Service providers need the support of **strong eService policies** and experts remarked that this greatly assisted them in justifying having **earmarked budgets and focus areas** to design, develop and implement eGovernment services.

Service users

As with public sector staff, service users need **better ICT skills** to be able to make full use of open eGovernment services. These needs are found to be stronger within different demographics e.g., older citizens, less educated, poor, migrants as well as disabled persons. Three is a concern that moving towards an open eGovernment model without addressing this skill gap will maintain or amplify the exclusion of these groups. **Access to an internet connection** is also a concern as some regions are lacking in this concern as well as the same groups as mentioned above may often lack access due to the costs associated. Many citizens **prefer a face-to-face contact** to that of using electronic services and this can be due to a **lack of trust** in, or understanding of the technologies in question. Data collection, storage and security concerns many citizens and they do express a lack of trust in the abilities of governments to **keep their data safe**. With regard to sensitive information, e.g. health and

social care data, service users want to know how their data is kept safe, who has access to it and how it is used.

Horizontal Barriers

Service providers

Fragmentation and complexity of government and government service provision presents strong barriers to digitalisation and streamlining of services: Too often, **services are delivered in silos** and connecting departments to increase information and data sharing is proving difficult due to a variety of different **"legacy systems"** that are not integrated. A lack of long-term planning was also mentioned as a barrier, resulting in short term thinking and little or no focus on the foundational issues. Lack of ICT skills was also described as a barrier along with organisational barriers such as resistance to change, unwillingness to open and share data, and **lack of dedicated staff and earmarked budget** to work specifically on digitalisation efforts. Smaller towns, cities and municipalities were frequently mentioned as facing the difficult barriers of digitising and modernising services for smaller service units, which may involve the same amount of effort as for larger units at higher cost, due to **economies of scale**. In addition, remote and rural towns and municipalities may also suffer more from a skill shortage as they may face difficulty in attracting the highly skilled human resources needed to implement the change.

Service users

Lack of awareness and understanding of new and digitised services was mentioned as a barrier to the up-take of open eGovernment services from service users. Like service providers, service users have got accustomed to service models that rely on face-to-face contact and paper exchange, and many prefer this way of conducting communication with public authorities. **Trust** plays a strong role here as users don´t trust open eGovernment services, specifically when it comes to the **protection of their personal data**.

Disabled citizens, as well as older adults, migrants and economically disadvantaged persons face specific barriers in their use of open eGovernment services as they are more likely to lack the digital skills needed to understand and use the internet. The **digital divide** also remains a problem in that there are pockets within communities that are not connected to the internet and lack the means to become so.

On the basis of the horizontal and more specific needs, the next section presents a list of considerations for the up-take of open eGovernment service in Europe. This is a first step towards building the CLARITY Blueprint, which will provide more detailed view of the road ahead and what actions are needed to drive a stronger open eGovernment service sector in Europe.

5   CONSIDERATIONS FOR THE UP-TAKE OF OPEN EGOVERNMENT IN EUROPE

This section pulls together the findings of earlier sections and presents eight considerations that stakeholders need to take in to account to successfully drive implementation and up-take of eGovernment Services in Europe. As is evident there are considerable barriers to the on-going development of eGovernment services and these provide serve as a reminder list of issues that require attention in order to make these more successful. These are presented here in summary form but are evidently more complex and nuanced, and may take considerable effort and resources. The literature review and experts however agree that these steps must be taken to in order to successfully move towards open eGovernment.

Strong national policy will provide the necessary push and framework around open eGovernment efforts within member states. It will also provide a drive for regional and local governments to develop and implement their own policies that are tailored for their context. A strong national, regional and local policies also give push for dedication of resources, and prioritisation of this field that is needed to design, develop and implement open eGovernment and associated services across Europe.

Long term planning, which includes an in-depth and critical review of the foundations of current service delivery systems and governing structures. National, regional and local governments need to have the confidence to define future goals and draw up step-by-step plans on how to get to their desired future. If this phase is skipped, or if planning is short term the risk is that systems and service development is driven by technology vendors which results in new solutions that are ill-fitting, proprietary and ill-integrated with other systems. Governments and government units need to take ownership of the process from initiation to implementation as they are the most knowledgeable about their own needs and those of their citizens.

ICT systems that are open source, flexible and scalable should lie at the heart of open eGovernment service delivery. In procurement of new systems and applications, care should be taken to choose open systems (open API), that can be amended easily to fit different contexts of use and are easy to integrate with consequent systems. They will also allow smaller governmental units to adapt solutions, already tried and tested by larger units, to fit their smaller operational capacity. This will lower cost and allow for knowledge transfer and peer learning across the open eGovernment ecosystem in each county.

Building critical mass in the form of building collectives of service providers (whether they be General Practice, social care or municipalities) will help lower cost of equipment, training and open eGovernment solutions. These can also act as support networks and peer learning environments that can share maintenance contract costs. NHS England is working on this as part of the General Practice Forward View initiative, and this is also being carried out in Sweden as part of the drive for municipalities to become part of INERA AB, which brings together municipalities and regional authorities across Sweden with the aim of providing eGovernment services as well as eHealth services for citizens. This will assist smaller municipalities that may struggle to implement change due to a lack of resources.

Building strong government data practices and skills. Data is of key importance for opening eGovernment service delivery and provide citizen centric and personalised services. Governments and government departments hold considerable amounts of data that can be used to create value inside and outside governments. Data is vital to the design, development and implementation of open eGovernment services and the foundation to cutting down on administrative burdens associated with accessing and using public services. Governments should develop detailed and comprehensive data policies that cover openness, transparency, data collection, storage, analysis, formats and security. These should also include detailed planning on how to move towards data openness and use of data for purposes of service delivery. As is strongly indicated in the literature, staff data skills will also need considerable updating, to make the transition to data driven services and open data successful.

Financial incentives and support to increase implementation of eGovernment services within governmental units, e.g., provision of initial funds, financial sponsorships, reimbursements for adoption, pay-for-performance initiatives etc. Bearing in mind that costs and tight budgets are identified as considerable barrier to driving implementation of open eGovernment services this solution could be scalable and include different funding options.

An example of this would be the *NHS England General Practice Forward View*[99], which has committed £2.5bn a year from 2016-2020/2021 to support general practice services in England. One of the key areas for support is General practice infrastructure and improved ICT. This will include e.g.:

- Stimulation for uptake of online consultation systems
- Development of approved Apps library for patient and practitioner support
- Action to support general practices to offer patients more online self-care and self-management services.

ICT skills training needs to be a policy priority to mitigate the identified effects this is having on both the service delivery and service use sides. This is a complex issue that will need a multi-pronged approach and communication and collaboration with the education system in each member state. Local and regional governments should also put this on their policy agenda and ICT skills development should be a standing item within open eGovernment planning and policy. It is important that a variety of education and training options are available to citizens as one size does not fit all when it comes to ICT skills education and training. Being more knowledgeable, skilled and confident in ICT use will be a strong driver for government staff, as well as citizens to take-up open eGovernment services.

To increase citizen trust in open eGovernment services is necessary to increase up-take. The literature indicates that there is an overall distrust in governments, which will have an effect on how citizens perceive open eGovernment services. There is however an opportunity to increase citizen trust by highlighting the transparency and accountability that comes with conducting government affairs in a more open manner. Citizens are also increasingly invited to take part

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[99] NHS England (2016) General Practice Forward View. Available at: https://www.england.nhs.uk/wp-content/uploads/2016/04/gpfv.pdf

in practices that have until recently been entirely within government control such as policy making, budgeting and eDemocracy voting. With regard to distrust when it comes to the handling of personal data, privacy and data security, it is imperative that governments are transparent about their data practices and display clearly how data is used, stored and who has access to it. Anonymization methods, encryption and details of security measures, should also be made available to citizens.

Last, but not least, it is important that governments use clear feedback mechanisms on their service pages so that citizens can easily get in touch with government staff with complaints, general feedback and queries. These should also be responded to promptly to display to citizens that these are received and considered by government staff.

6   CONCLUSION

This deliverable finds that open eGovernment services is a busy and fast-moving field, driven in part by the need to save on rising costs of providing public services, but also a desire to build better and more citizen centric services. The European Union has a strong policy for open eGovernment and these are offering guidance on national, regional and even local government policies within this field.   There are however numerous and complex barriers that stand in the way of full take- up of open eGovernment services, both from service user and service provider sides. These include e.g., lack of ICT and data skills, lack of prioritization and policy guidance, insufficient technical infrastructure and old systems, as well as organizational barriers such as resistance to change.   We also found a variety of stakeholder needs such as needs for information and ICT training from both service providers and users, needs for new systems and need for assurances regarding safeguarding of personal data.

On the basis of our research and analysis we arrive at eight considerations for the take-up of open eGovernment services in Europe which are listed above in Chapter 5. These are not intended as a final list of considerations, as we see this list to be a living document that will take into account stakeholder views in the upcoming CLARITY validation efforts e.g., online assessment of CLARITY Blueprint and thea validation workshop intended for the same purpose. These considerations are thus a contribution to an on-going discussion around open eGovernment service design, development and delivery across European member states. These considerations will also be taken further in the CLARITY gap analysis and in the CLARITY Blueprint, that are intended, in combination, to present a plan for the future of open eGovernment services in Europe.

APPENDIX A: INTERVIEW QUESTIONS

Background

1. What is your current role? What does your day to day work involve? How do open eGovernment services feature in your work?

2. Which of these four fields do you see your expertise falling within? (can indicate more than one)

    a. General practice health
    b. Local government services
    c. Small business & self-employed
    d. Disability services

Current services

3. What open eGovernment services are currently under development within your field?
    a. What has been the key driver behind these?
    b. How do they fit within the services you already provide?
    c. What/whose needs are they meeting specifically?
    d. Are you facing any barriers in the development process? How are you mitigating these?

4. What services are currently available within your field?
    a. Which ones work particularly well? Why do you think that is?
    b. Which ones have not worked out or are struggling? Why do you think that is?
    c. To what extent are people using the services? If up-take is low, do you have an idea why that is? Are you taking specific steps to increase up-take?

5. Do you have any immediate concerns or ideas regarding the current open eGovernment provision within your field, that you have not discussed? If so, what are they?

Future plans

6. What is your vision for future open eGovernment services within your field? Think to the year 2030.

7. What will be the key drivers behind their development and provision?

8. Are there any barriers you can foresee? If so, how do you think these can be mitigated?

9. Who are the main stakeholders involved in the open eGovernment service development and provision in the future?

10. What can be done to increase the take-up of future eGovernment services?