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BASELINE SURVEY REPORT

IDENTIFYING CURRENT APPROACHES TO USER-CENTRICITY ASSESSMENT OF DIGITAL PUBLIC SERVICES

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EXECUTIVE SUMMARY

Over the last twenty years, digital government has made substantial progress. However, there is still a gap between the needs of citizens and the services offered to them. This been addressed by the thirty two ministers of the European Union and European Free Trade Agreement countries who jointly committed to the 2017 Tallinn Declaration on Digital Government and, in annex, to its user-centricity principles for the design and delivery of digital public services.

What still pends is the adaptation of the user-centricity principles by all levels of governance and especially by those that are in direct contact with citizens: The local authorities.

The baseline survey report is first step toward understanding the status and needs of local authorities regarding user-centricity. More specifically, the report provides insights on the instruments that are currently used for assessing the user-centricity of digital public services and how local authorities are currently assessing their services.

With respect to existing user-centricity assessments it was found that:

- Currently, there is no instrument that has been specifically designed for assessing the user-centricity of *locally offered* digital public services.
- Dedicated user-centricity assessments have some touchpoints with the Tallinn Declaration's user-centricity principles. However, such principles are partially covered by existing measures.
- The eGovernment Benchmark is the only instrument that has performed a cross-country assessment of digital public services according to a clearly defined user-centricity dimension.

With respect to local user-centricity definitions and measurements it was found that:

- User-centricity is very important to all the cities despite the lack of a common definitions and the multiple interpretations that the notion currently receives.
- Various methods and tools are employed by cities for measuring aspects of user-centricity. However, measuring and deploying user-centric services vary quite a lot between the cities.
- Website analytics are widely used by cities for assessing performance of digital services. Related measurements help cities to track accessibility, usability, and digital interaction.
- Many data that are relevant to user-centricity measurement are already automatically collected by cities. However, not every organisation has a clear overview of the collected data.
- Particular social groups seem to be neglected from citizen engagement. More specifically, young people, immigrants or people who do not speak the local language are more difficult to engage.

1. INTRODUCTION

Governments at all levels (national, regional and local) are increasingly interacting with their citizens and businesses through digital public services. While the digital transformation pace varies considerably for digital public services, their reach is broad, touching several areas and activities of everyday life: health, education, culture, sports, mobility, business and so on and so forth. Their impact in people's lives is already notable and their effectiveness is already a matter of monitoring and assessment. The broad and continuous implementation of digital services has led governments at all levels to develop various measures as well as monitoring and assessment instruments and frameworks. Until now, cross-country comparisons regarding the efficiency of digital services within Europe has been performed with a focus on services offered by national governments, and only partially covering the needs of citizens and businesses (e.g. the yearly digital service assessment by the eGovernment Benchmark).

The Tallinn Declaration and its user-centricity principles for digital public services, signed by the European Union (EU) and European Free Trade Association (EFTA) ministers in charge of policy and coordination of digital public services, provides a chance for governments (at all levels) to thoroughly address the needs and expectations of their digital services' users, be citizens, businesses and people in general. Understanding people's needs and expectations is a crucial aspect for all contemporary approaches to the design and delivery of digital services, including Design thinking, Service co-creation, and universal design principles.

In light of the Tallinn Declaration's aim for the design and delivery of user-centric services, local governments, should they be regions or municipalities, can be understood as having a user-centric nature, almost by default: They are in direct contact with citizens and they are one of the first places where citizens experience digital services. Moreover, it is expected that local governments' role in digital service delivery will become even more crucial alongside the greater adoption of the 'once only' principle.

Therefore, it is crucial to understand what digital services local governments design and deliver to citizens and businesses and, most crucially, how they manage to *always be* user-centric, that is to continuously address and respond to the needs and expectations of their citizens regarding digital services. A step toward understanding what the status of local governments is in designing and delivering user-centric digital services is to capture what user-centricity means to them and how they assess the user-centricity of their digital services.

However, with respect to the particular user-centricity principles provided by the Tallinn Declaration (Annex 1) local governments face a number of challenges. These have been addressed by UserCentriCities (UCCs) and are outlined in table 1.

The focus of the study reported here is on existing user-centricity assessments. More specifically:

- a) a desktop research was undertaken to identify existing instruments and frameworks that assess the user-centricity of digital public services
- b) a questionnaire was designed and distributed to UCCs' partners for identifying their needs and existing user-centricity oriented measurements for their digital services.

The findings from both study aspects are the first step¹ toward an operationalized version of the Tallinn Declaration’s user-centricity principles where the status and needs of local authorities are adequately addressed.

Table 1. Challenges related to the adoption of user-centricity principles at the local level, objectives and outputs of UCCs

Challenge	UCCs Objective	UCCs Output
Local authorities not sufficiently involved in defining the Tallinn Declaration	Involve local authorities in digital government policy debate at European level	Operationalization of Tallinn Declaration by local authorities High level policy summits with local/European decision makers.
Impossibility to compare performance of local authorities in digital government	Provide a measurement tool to support local decision makers and incentivize progress	Benchmarking dashboard
Lack of support on how to become more user-centric	Providing advice and facilitate peer to peer learning between cities	Support toolkit and mutual learning service
Involving and communicating with thousands of local authorities	Outreach and community building to cities and regions through existing networks and social media	Scalable tools for benchmarking, service, and outreach

The rest of this report is structured as follows: Chapter 2 presents how user-centricity of digital public services is measured at an international level by bringing focus on instruments and frameworks applied in EU. Chapter 3 presents how local authorities currently define and measure user-centricity aspects of their services. Drawing on the findings from the previous chapters, Chapter 4 provides a set of directions that can support the design of key requirements for user-centricity indicators that are relevant for locally offered digital public services.

¹ In connection to findings from Task 1.2 of UCCs project.

2. HOW USER-CENTRICITY IS MEASURED AT AN INTERNATIONAL LEVEL

This chapter presents existing instruments and frameworks that explicitly address the user-centricity assessment of digital public services in Europe.

Section 2.1 reports the main findings of the study and provides an overview of instruments and frameworks that were identified and further examined.² Each section from 2.2-2.6 provides a more detailed description of an instrument/framework. Emphasis is put on user-centricity assessments and touchpoints to the Tallinn Declaration's user-centricity principles. Section 2.7 provides a summary of the study's outcomes.

2.1 MAIN FINDINGS AND OVERVIEW OF RELEVANT INSTRUMENTS AND FRAMEWORKS

The main finding is that currently no instrument or framework includes a user-centricity assessment that is specific to *locally offered* digital public services. Findings also suggest that the user-centricity monitoring and assessment of public services is part of a) existing instruments applied at the national government level and b) recently developed frameworks that could be potentially used as the basis for defining an assessment for locally offered digital services. In addition, it seems that user-centricity of digital public services is a topic of recent academic research on user-centric eGovernment (see, for example, the book on user centric e-government, edited by Saeed et al., 2018³).

Currently, no instrument or framework includes a user-centricity assessment that is specific to locally offered digital public services.

The instruments and frameworks that were chosen for further examination are the following: a) the 2020 eGovernment benchmark, b) the 2020 Digital Economy and Society Index (DESI), c) the Multi-dimensional Framework to Evaluate the Innovation Potential of Digital Public Services, d) the Indicators of Citizen-Centric Public Service Delivery and e) the Serving Citizens Framework. An overview of these instruments can be found in Table 2.

² See Annex 2, section 2.1 for the main methodological considerations regarding the identification of instruments and frameworks.

³ The book is fully accessible from here: <https://link.springer.com/book/10.1007/978-3-319-59442-2>

Table 2. Overview of instruments and frameworks including user-centricity assessments for digital public services

Instrument/ Framework	Commissioning institution, authoring body, Year	Assessment side of user- centricity (service delivery, service demand)	Scope (national- regional- local level)	Validity status	User-centricity assessment
eGovernment benchmark	European Commission DG Communications Networks, Content & Technology, 2020	Service delivery	National government level. Comparison between countries within Europe is possible	Applied instrument	Top-level benchmark on user-centricity of digital public services
Digital Economy and Society Index	European Commission, conducted by Digital Economy, Recovery Plan and Skills Unit F.4, 2020	Service delivery & service demand	National government level. Comparison between countries within Europe is possible	Applied instrument	Inherited top-level benchmark on user-centricity of digital public services from the eGovernment benchmark
Multi- dimensional framework to evaluate the innovation potential of digital public services	European Commission, conducted by Joint Research Centre (JRC), the European Commission's science and knowledge service, 2020	Service delivery	National government level	Developed and partially validated framework	User-centricity as a key-assessment area of emerging and mature technologies that enable innovative (digital) public services
Indicators of Citizen- Centric Public Service Delivery	Economic Analysis Unit of the European Commission's Directorate-General for Regional and Urban Policy (DG REGIO), conducted by World Bank, 2017	Service delivery and service use	N/A	Developed framework	User-Centeredness and Responsiveness as a key assessment area for digital public service delivery
Serving Citizens Framework	OECD, 2019	Service delivery	National government level	Developed and applied framework, partially validated	Citizen-centric evaluation framework for public services

2.2 EGOVERNMENT BENCHMARK

The eGovernment benchmark⁴ is conducted annually, with the overall aim to monitor and evaluate, at the national government level, the performance of online public services against the top-level benchmarks of User-centricity, Transparency, Key Enablers and Cross-Border Mobility. Such evaluation is performed from the service delivery side (i.e. government perspective).

The performance of countries for all key-benchmarks is measured against a set of eight “life events” or “user journeys” with each of them consisting of common digital services that an average citizen or business is likely to require. The life events under evaluation are: Regular Business Operations, Moving, Owning and Driving a Car, Starting a Small Claims Procedure, Business Start-Up, Family life, Losing and finding a job and Studying.

The user-centricity top-level benchmark is of particular interest to this study because its aim is close to that of UCCs, that is to assess the user-centricity of digital public services. However, the indicators for the benchmark (but also its results) refer to services that are offered by national governments rather than regional and local ones. Despite such inconsistency, the eGovernment benchmark remains a relevant instrument to UCCs due to the angle of its indicators to user-centricity (see right below).

The user-centricity top-level benchmark is comprised by three sub-indicators: Online Availability, Usability and Mobile Friendliness (Table 3). Altogether, they measure different aspects of digital service provision. With respect to the Tallinn Declaration’s user-centricity principles, the user-centricity benchmark covers, to some extent, some of these principles. Online availability and usability sub-indicators partially cover some aspects mentioned in the principle of Accessibility, security, availability, and usability. Mobile friendliness partially covers some aspects mentioned in the principle of digital delivery of public services.

Table 3. User-centricity sub-indicators used in eGovernment benchmark.

User-centricity top-level benchmark	
Sub-indicators of user-centricity	Description
Online availability	the extent to which users can complete public services digitally.
Usability	whether there are support options available within the services, such as the possibility to have a live chat, and whether the websites of the services are available for use via portable devices.
Mobile Friendliness	whether the websites under evaluation are compatible with mobile devices.

Source: eGovernment benchmark 2020, Insights Report.

⁴ The latest reports related to the eGovernment benchmark can be found here: <https://op.europa.eu/en/publication-detail/-/publication/c896937b-f554-11e9-8c1f-01aa75ed71a1>

While the user-centricity top-level benchmark is the most relevant to the topic of this study, there are some metrics from the rest of the top-level benchmarks that partially cover some of the Tallinn Declaration’s user-centricity principles. For example, the described compound indicators for the Transparency top-level benchmark partially cover the principles of protection of personal data and privacy as well as the digital service delivery of public services. The described compound indicators for the Key enablers top-level benchmark partially cover the online availability aspect of the principle of Accessibility, security, availability, and usability, but only for the following enablers: eID, eDocuments, Single Sign On, Authentic Sources, and eSafe.

2.3 DIGITAL ECONOMY AND SOCIETY INDEX (DESI)

The 2020 Digital Economy and Society Index (DESI) monitors Europe’s overall digital performance and tracks the progress of EU countries in digital competitiveness⁵. DESI is based on indicators developed by several instruments, including the aforementioned eGovernment benchmark. All the indicators used in the DESI are arranged as five key indicators: 1) Connectivity, 2) Human Capital, 3) Use of Internet, 4) Integration of Digital Technology and 5) Digital Services.

User-centricity indicators (Online Availability, Usability and Mobile Friendliness) as well as the rest from the eGovernment benchmark (Transparency, Key Enablers and Cross-Border Mobility) are included in the DESI’s key indicator of Digital Services (Table 4).

Table 4. DESI’s five key indicators, (mentioned also as dimensions of DESI).

DESI’S FIVE KEY INDICATORS	
Connectivity	Fixed broadband take-up, fixed broadband coverage, mobile broadband, and broadband prices
Human Capital	Internet user skills and advanced skills
Use of Internet	Citizens' use of internet services and online transactions
Integration of Digital Technology	Business digitisation and e-commerce
Digital Services	eGovernment

Source: Digital Economy and Society Index (DESI) 2020 – Thematic Chapters Report.

The Digital Services key indicator provides a summarized score of the supply and demand of eGovernment services and open data policies and implementation. It does so by combining data collected across the EU through the following indicators: eGovernment users, Pre-filled forms, Online service completion, Digital public services for businesses (including the cross-border dimension), Open data, User-centricity, Key enablers, and Cross-border mobility (for detailed descriptions see Annex 3).

⁵ Digital Economy and Society Index 2020 reports can be found here: <https://ec.europa.eu/digital-single-market/en/digital-economy-and-society-index-desi>

The Tallinn Declaration's user-centricity principles are partially addressed by the indicators inherited from the eGovernment benchmark (see section 2.3) but also by some more employed in the Digital Services key indicator. The most relevant indicators are presented here.

The indicator of eGovernment users addresses, from the user perspective, the percentage of forms submitted through online means vs. the general need for form submission. Thus, it touches upon the principle of digital delivery of public services from the demand side.

The indicator of Pre-filled forms measures the extent to which data that is already known to the public administration is pre-filled in forms presented to the user and, therefore, it touches upon the principle of reduction of administrative burden from the service delivery side.

The indicator of online service completion refers to the extent to which the various steps needed for dealing with the public administration can be done completely online. Thus, this indicator touches upon the digital delivery of public services from the service delivery side.

2.4 MULTI-DIMENSIONAL FRAMEWORK TO EVALUATE THE INNOVATION POTENTIAL OF DIGITAL PUBLIC SERVICES

The multi-dimensional framework⁶ evaluates the digital readiness, interoperability, and user-centricity of innovative public services. Its aim is to support European Public Administrations to embrace new digital technologies and to deliver innovative public services according to the European Interoperability Framework's (EIF) four layers and in alignment with the Tallinn Declaration's user-centricity principles.

While the scope of the framework covers innovative public services, the dimensions of user-centricity and interoperability it employs concern emerging and mature technologies that *enable* the provision of innovative public services.

The user-centricity assessment is based on an adaptation⁷ of the Tallinn Declaration's user-centricity principles towards the rating of mature and emerging technologies (see Annex 4). Briefly put, the adaptation concerns the supply side (i.e. the service provider), brings focus on the technological aspects of service provision and suggests a four-level rating scale (Table 5) that is based on a highly normalizing evaluation approach (see below).

⁶ The full report can be found here: <https://publications.jrc.ec.europa.eu/repository/handle/JRC121672>

⁷ The notion of adaptation is used here, in this report, to bring attention to a small, yet significant, change in the wording of Tallinn Declaration's user-centricity principles that has taken place in the multi-dimensional framework. This change concerns the focus of each principle on technologies that support public service provision rather on digital public services delivered to citizens. The potential implications that such change may generate for the user-centricity assessment of digital public services are not discussed in the multi-dimensional framework (see above note).

Table 5. Four-level scale for rating the user-centricity of emerging and mature technologies that enable the provision of innovative public services. In the multi-dimensional framework, the same rating scale is used for all (eight) user-centricity principles mentioned in the Tallinn Declaration.

Scale	Description
1 – Not At All	No evidence that this specific dimension (aka principle) of user-centricity is active or meaningful in the technology at hand.
2 – To Some Extent	Some evidence exists that such dimension (principle) is present, but there are clear and evident limits – which can be of technological or even non-technological nature – preventing a more intense or extensive occurrence of that character in the supported or facilitated public services.
3 – To a Great Extent	Significant evidence shows that this dimension (principle) of user-centricity is active, though not reaching its full potential, as far as the associated public services are concerned.
4 – Quite Likely So	We can safely state that the corresponding dimension is fully operational and effective in the direction of promoting user-centricity in the public services enabled by that technology area.

Source: JRC. A multi-dimensional framework to evaluate the innovation potential of digital public services (2020), Technical Report.

The rating scale is the same for all user-centricity principles and it was applied to eight technology areas (each including several technology categories) that were considered relevant for the design and implementation of digital public service provision: Artificial Intelligence, Communication Technologies, Computing Infrastructures, Distributed Ledger Technologies, Digital Identity and Security, Immersive Technologies, Internet of Things and Smart Devices and Software and Service Technologies.

With respect to the scope of this desktop study (i.e. user-centricity assessments for digital public services), the multi-dimensional framework’s approach on user-centricity assessment does not fit. This is because the focus is on enabling technologies and because the framework’s adaptation provides a rating scale but not any indicators or other metrics that could be relevant for assessing the user-centricity of local digital public services. However, it is presented here as an inspiration to local administrations.

Local administrations could, for example, explicitly draw on the user-centricity principles, as the framework in question does, to develop local assessment models for services they provide to their citizens and local businesses. This could be possible in single local government organisations under the assumption that there is an alignment and agreement on fundamental aspects around local service provision, such the meaning and content of a service, its beneficiaries and the like. However, when considering the focus and aims of UCCs, an assessment that is based on the adaptation of each principle without putting the actual content of the principle in question among partners and other interested parties may limit the scope of the assessment’s application and relevance. For instance, definitions of what a local digital public service is and means as well as the boundaries between several of the Tallinn Declaration’s dimensions are currently under consideration.

2.5 INDICATORS OF CITIZEN-CENTRIC PUBLIC SERVICE DELIVERY

A recent World Bank study entitled as “Indicators of Citizen-Centric Public Service Delivery”⁸ is to support public administrations at national, regional and local levels to assess their performance and the quality of their public services by taking into account the perspectives of European Union citizens and their own organisation. The study proposes four key assessment areas: Access, User-Centeredness and Responsiveness, Quality and Reliability of Service Delivery, and Public Sector Integrity.

The User-Centeredness and Responsiveness assessment refers to the recognition, adaptation, and responsiveness of public administrations according to the various needs of their citizens. From the citizen perspective, the measurement of recognition and adaptation is about the perception of citizens on receiving personalised services and whether these fit their needs. From the public administration perspective, recognition and adaptation examine whether citizens are involved in the design of services and whether the administration is occasionally in contact with citizens.

The measurement of responsiveness is approached as a matter of timeliness. From the citizen perspective, responsiveness measures are about the time it takes for citizens to get answers to their requests, whether time frames are clearly communicated and about the ideas of acceptable standards for time-bound service delivery. From the perspective of the public administration, responsiveness measures concern current service delivery standards, the extent that delivery standards are respected, whether there is a systematic communication to citizens regarding time frames of service delivery and whether the expectations of citizens about timely service delivery have been taken into account.

The perspectives of the citizen and the administration for the User-Centeredness and Responsiveness (as well as for the rest of the key assessment areas) are studied through two complementary tools: A demand-side citizen survey that captures the experience and perceptions of citizens in their respective constituencies and a supply-side self-assessment checklist that captures efforts made by public administrations to provide outstanding service delivery (Table 6). The objective of examining the supply and demand side is to offer a more holistic view and to allow the examination of any discrepancies between the two.

⁸ Information about the study and the final report are accessible from here: <https://openknowledge.worldbank.org/handle/10986/30030>

Table 6. The key-assessment area of User-centered service delivery and responsiveness. User-centeredness is examined through a survey that covers the demand side (i.e. the citizens' views) and a checklist that covers the public administration's views. Both instruments cover the aspects of personalization, timely service delivery/receipt and standards in service delivery.

Key assessment area of User-centered service delivery and responsiveness	
User-Centeredness and Responsiveness issues covered in the demand-side citizen survey	User-Centeredness and Responsiveness issues covered in the supply-side self-assessment checklist for public administrations
<ul style="list-style-type: none"> • Receiving personalised service • Receiving timely service • Service delivery standards in line with expectations 	<ul style="list-style-type: none"> • Providing a personalised service • Providing timely service • Setting service delivery standards

Source: World Bank. Indicators of Citizen-Centric Public Service Delivery – Final Report.

According to the study, both tools can be customized to fit a public administration's particular mandate and characteristics relating to service delivery.

Some of the Tallinn Declaration's user-centricity principles are partially addressed by the key assessment area of User-Centeredness and Responsiveness. More specifically, service provision concerns the principles of citizen engagement (from the demand side) and reduction of the administrative burden (from the supply side). Responsiveness concerns the principle of digital delivery of public services (from the demand and the supply sides).

Additional touchpoints were identified between each of the remaining key assessment areas and the Tallinn Declaration's user-centricity principles. More specifically, the key assessment area of Access touches upon the accessibility aspect of the principle of accessibility, security, availability, and usability (from both the supply and demand sides). The key assessment of Quality and Reliability of Service Delivery touches upon the usability aspect of the principle of accessibility, security, availability, and usability as well as the optimisation aspect included in the principle of reduction of administrative burden (from both the supply and demand sides). The key assessment area of Public Sector Integrity refers explicitly to the content addressed by the principle on redress and complaint mechanisms (supply side) and touches upon the public participation aspect of the principle of citizen engagement.

2.6 SERVING CITIZENS FRAMEWORK

The serving citizens framework is included in the 2019 Government at a Glance (OECD, 2019) report and its aim is to provide a comprehensive structure for evaluating public service performance.⁹

⁹ As mentioned in section 2.1, the framework does not specify (but does not exclude either) whether its dimensions can be considered for evaluating digital public services.

The framework covers the service delivery side¹⁰ and covers the dimensions of access, responsiveness, and quality (Table 7). Indicators for each dimension are proposed to be specific to the service areas under examination¹¹ and more detailed descriptions of each dimension are missing. However, the brief description of the framework's dimensions points to inclusiveness; a common characteristic for all dimensions. For example, access refers to the inclusiveness of all segments of people, including vulnerable ones. Responsiveness refers to the inclusiveness of people who need support to benefit from a service and of others who prefer to use self-service channels. Dimension-specific scorecards have been applied to the service areas of education, health and judiciary systems and allow for a rough public service performance comparison across countries (at the national government level). The 2019 Governance at a Glance publication includes scorecards on Access and Quality (but not on responsiveness), developed for health, education and justice services. It is suggested that the framework could be applied to other services and to other governance levels as well.

Table 7. Key dimensions for the evaluation of public service performance, included in the Service Citizens Framework.

Dimensions of Serving Citizens Framework		
Access	Responsiveness	Quality
<ul style="list-style-type: none"> Affordability Geographic proximity Access to information 	<ul style="list-style-type: none"> Courtesy and treatment Match of services to special needs Timeliness 	<ul style="list-style-type: none"> Effective delivery of services and outcomes Consistency in service delivery and outcome Security/safety

Source: OECD, Government at a Glance 2019

While the Serving Citizens Framework does not explicitly address digital public services, there are some affinities between its dimensions and the Tallinn Declaration's principles that can be speculated. For instance, the access dimension (and its defining aspects) could partially relate to the principle of accessibility, security, availability, and usability. The responsiveness dimension could partially relate to the principle of digital delivery of public services (courtesy and treatment aspect), to the principle of accessibility, security, availability, and usability (match of services to special needs aspect) and to the reduction of administrative burden (timeliness aspect). The quality dimension could partially relate to the principle of digital delivery of public services (effective delivery of services and outcomes), to the reduction of administrative burden (consistency in service delivery and outcome) as well as to the principles of accessibility, security, availability and usability and protection of personal data and privacy (security/safety).

¹⁰ The perspectives of people about (the use of) public services are covered by an additional, yet distinct from the framework, dimension of citizen satisfaction.

¹¹ The demonstrated application of the framework describes metrics that seem to be far from those that this study focuses on. For example, indicators for the access dimension in education refer to: private expenditure on education, enrolment at age 4 and first-time tertiary entry rates while the access dimension in judiciary system refer to: a) people's ability to access and afford civil justice and b) the accessibility, impartiality and effectiveness of alternative dispute resolution mechanisms.

2.7 SUMMARY OF FINDINGS

This presents the reach of the most relevant instruments from into Tallinn Declaration’s user-centricity principles and provides a summary of findings.

Table 8. Reach of relevant instruments into Tallinn Declaration’s user-centricity principles.

Instrument/ Framework	Tallinn Declaration’s user-centricity principles							
	Digital interaction	Accessibility, security, availability and usability	Reduction of the administrative burden	Digital delivery of public services	Citizen engagement	Incentives for digital service use	Protection of personal data and privacy	Redress and complaint Mechanisms
eGovernment Benchmark		X		X			X	
Digital Economy and Society Index		X	X	X				
Indicators of citizen-centric public service delivery		X	X	X	X			X

- Currently, there is no instrument that has been specifically designed for assessing the user-centricity of *locally offered* digital public services.
- User-centricity assessments are currently included in instruments and tools that assess e-governance and cover much broader assessment areas.
- Dedicated user-centricity assessments of each instrument and framework have some touchpoints with the Tallinn Declaration’s user-centricity principles. However, such principles are partially covered by existing measures.
- The eGovernment Benchmark is the only instrument, among those identified and examined, that has performed a cross-country assessment of digital public services according to a clearly defined user-centricity dimension (i.e. the user-centricity top-level benchmark).
- The key-assessment area of Digital Services in the DESI incorporates the indicators developed in the eGovernment Benchmark. It also includes other indicators (e.g. Pre-filled forms and online service completion indicators) that touch upon additional aspects of user-centricity covered by the Tallinn Declaration (e.g. reduction of administrative burden).
- Most of the examined instruments and frameworks assess the user-centricity of digital public services from the supply side (service provision) rather than from the users’ or the service design side. The framework proposed by the World Bank is an exception. However, the framework is not tested with real data and is not validated.

- The multi-dimensional framework to evaluate the innovation potential of digital public services is the only one that explicitly refers to the Tallinn Declaration's user-centricity principles. However, it draws on such principles only to rate the user-centricity level of technologies that potentially support digital public services. Therefore, it does not assess actual digital public services.
- The Serving Citizens Framework includes dimensions for public service evaluation that could be used as departure points for building a user-centricity assessment for locally offered digital public services. However, the current version of the framework does not provide generic definitions of its key dimensions (Access, Responsiveness and Quality) and their constituting elements. Therefore, it is difficult to consider its potential and applicability in the context of a user-centricity assessment of locally offered digital public services.

3. USER-CENTRICITY IN PRACTICE: HOW CITIES DEFINE AND MEASURE USER-CENTRICITY

This chapter presents local user-centricity definitions and assessments of digital services. The findings presented in this chapter were gathered through a questionnaire that was designed for and distributed to UCCs partners (see Annex 2).

Sections 3.1-3.10 report the findings gathered through the questionnaire. Section 3.11 provides a summary of findings and conclusions.

3.1 DEFINING AND MEASURING USER-CENTRICITY AT LOCAL LEVEL

3.1.1 LOCAL DEFINITIONS OF USER-CENTRICITY

While the importance of user-centricity was widely recognised by the respondents of the survey, and often had a central role when developing new public services, most of the responding organisations did not have a comprehensive definition of what the term entails. Also, it is not clear whether there is a shared understanding about user-centricity within an organisation. Developing a user-centricity understanding around services seems to be a work in progress and is often an important part when developing new services. However, a structured, common understanding is either lacking or still under development, at least in some cities.

Despite the lack of official definitions, it seems that cities feel that they have a good idea of what user-centricity entails. This is evident in, for example, currently used surveys, official feedback channels, testing and audits, website analytics and a public service evaluation model.

The lack of official definitions might justify the reason that cities have not developed specific user-centricity reports that encompass all services. Instead, user-centricity is a topic included in separate reports for individual services.

3.1.2 IMPORTANCE AND IMPACT OF LOCAL USER-CENTRICITY MEASUREMENTS

As measurements and data in general have an important role in decision-making, it is valuable to know what is measured and how. In some cases, data not initially designed to provide insights about users can be used for that purpose. One of the main concerns regarding existing data seems to be that it might be scattered in different systems, which might make using its full potential in local decision-making more difficult. Services are made for users, otherwise they are unnecessary. The

importance of measuring user-centric factors in the use of services is recognised and these measurements do have an impact on local decision-making.

3.1.3 MEASURING THE USER-CENTRICITY OF LOCAL DIGITAL SERVICES

At a general level, it seems that participants' measurements of different performance aspects of their offered digital services cover, at least partially, the Tallinn Declaration's user-centricity principles. Participants' responses about user-centricity measurements, in general, show that there are differences in approaches, methods and scopes. Table 9 shows the answers given by the cities to illustrate whether they employ a measurement related to that principle. The full set of questions is available in Annex 2. In the case of the Reduction of administrative burden principle, the answers were left out, as there were two questions about measuring and neither received straightforward yes/no answers.

Table 9. Respondents' measurements related to the Tallinn Declaration's user-centricity principles.

City/Region	Measurements related to the Tallinn Declaration's user-centricity principles							
	Digital interaction	Accessibility, security, availability, and usability	Reduction of the administrative burden	Digital delivery of public services ¹²	Citizen engagement	Incentives for digital service use	Protection of personal data and privacy	Redress and complaint mechanisms
Barcelona	x	x	N/A	x	x	x	x	x
Emilia-Romagna	x	x	N/A	x	-	x	x	-
Espoo	x	x	N/A	x	o	x	x	x
Lisbon	x	x	N/A	-	x	-	x	x
Milan	x	x	N/A	x	o	x	x	x
Rotterdam	x	x	N/A	x	x	x	x	x
Tallinn	x	x	N/A	x	-	x	x	-

Legend:

- x is measured
- is not measured
- o is measured in relation to a specific activity, not generally
- N/A The topic had two separate questions (about both optimisation and personalisation). In most cases there were no clear yes/no answers.

¹² As the percentage of digitalised services was difficult to estimate for many of the cities, this measurement relates to the answers given to the question 4.2 on the questionnaire (See Annex 2): "Do you measure offline versus online service use? If yes, how?"

3.2 DIGITAL INTERACTION

Digital interaction between citizens and businesses and public services is measured by all the responding organisations. For the most part, information about digital interaction is gathered through website analytics: the number of connections and sessions, number of different users, time spent on page and the most popular pages. It is also typical to measure the number of transactions performed in each digital service. There might be different levels of measuring digital interaction based on the maturity level of the service that is being measured: in some cases, the service is only about providing information to citizens (although that does not strictly contain interaction), in others users might have to perform some kind of transaction.

Many cities and organisations compare the amount of offline vs. online transaction. There might be specific services that require their own set of metrics to be able to evaluate their use: e.g. libraries, health services and museums have very different usage situations, use frequencies and transactions.

Interaction is also measured outside website analytics, as digital interaction occurs also e.g. through email, social media, and chatbots. Measurements can also include categorisation of the contact reason. The quality or reason of the feedback is logged as well as the response time. On the other hand, some organisations do not measure for example social media contacts, as they are not considered to be coming through an official city communications channel.

Customer surveys are used to measure the service quality from the citizen perspective. While analytics may offer some insight about the user-centricity through numbers, surveys offer a way for users to voice their opinions. In some cases, CRM systems can be used to measure progress within services.

Reporting can be up to individual service managers and in some cases, reports are compiled manually. This means there can be a lot of variance in the reports from different services. There would seem to be a demand for a general overview across all digital services and a more unified way of reporting the interaction data.

3.3 ACCESSIBILITY AND AVAILABILITY

All the organisations that participated in the survey measure accessibility and availability. EU accessibility directives require a certain compliance from public service websites. Tools and methods mentioned for evaluating accessibility include audits, measuring compliance according to the WCAG 2.0 (Web Content Accessibility Guidelines) rules, Achecker and SiteImprove. Audits and evaluations of the site's compliance are typically done before its deployment, but audits are also performed.

Availability data is gathered largely through website statistics and reports. Availability can be understood as the uptime and reachability of the services, but also as a measure of the percentage of all public services that are available online. The questionnaire itself did not specify a definition apart from the description included in the Tallinn Declaration. Website analytics provide a good picture of the reachability aspect. They can also provide insight about specific bottlenecks or problem areas, because these would show e.g. as failed or incomplete transactions in the reports. Because users can opt out of tracking and cookies, some problem situations might not be recognised because not all users can be followed.

Website analytics also provide an opportunity to enhance the findability aspects of websites. Many cities have grouped services thematically to make them more findable. Service menus and search engines also help citizens in finding what they need.

A concern that was voiced by many was accessible language. Language proficiency levels were used by some to evaluate the accessibility of the service, but this was an area that was recognised as needing improvement. No city is entirely monolingual, and while there might be a legal obligation to provide public services only in the official languages of the country, cities face problems with a large part of the population who might not be proficient in the official language(s).

Lisbon makes text vocalizers available on every page, allowing people to listen to the content instead of reading.

3.4 USABILITY

In the Tallinn Declaration principles, usability is combined with accessibility and availability. For the purposes of this survey, we wanted to separate it into its own entity, as it has a very central role in the way user-centricity is generally understood.

Usability is measured across all organisations that responded. Yet again, no specific definition for usability was provided aside from the description in the Tallinn Declaration that “principles of universal design have been applied to the setting up of the services and that the websites are simple to read and easy to understand”.

Usability experts were sometimes used to evaluate services before deployment. For the most part, however, usability evaluations were an on-going process that was being conducted while the services were in use.

The City of Rotterdam has set up a dedicated UX lab that utilizes a wide range of user experience and user testing tools and methods.

Most common ways of evaluating and measuring usability were through web analytics to recognise potentially problematic pages and services as well as direct user feedback and surveys. While some cities had specific surveys on the usability of their digital services, others relied on more comprehensive surveys on public services in general. Feedback on a smaller scale can be gathered for example right after a user has completed a process or transaction. On the other hand, that might mean that people who have experienced serious usability problems and are unable to complete their transaction might not even get prompted for feedback. Feedback is also collected through customer service channels, where problems concerning service usability can be reported.

An important aspect to consider is also what the feedback given (e.g. at the end of a successfully completed transaction) actually measures, and this can be down to how the questions are formulated. Are the measurements gauging user satisfaction with the page they were using or the actual service usage?

3.5 DIGITAL DELIVERY OF PUBLIC SERVICES

The questions about digital delivery of public services focused on the difference between online and offline – the percentage of services offered online as well as the comparison of usage data from different service channels.

While some cities measure the percentage of services they offer online, it is not an official metric in other places. The data about services is available but might not be used for any decision-making. To some extent this might be due to the difficulty of defining what constitutes a service.

As cities are using several channels to provide services to their citizens and businesses, contact numbers through these different channels – face to face, regular mail, telephone, email and online – are measured on a daily basis. The cost per contact can also be measured for these interactions. Collecting and evaluating these measurements is not always done in a uniform or automated manner, which might lead to some inconsistencies. Also, there are obviously many instances within the city service realm where a single transaction requires the use of several of these contact points or channels, with varying degrees of digitalisation, to be fully completed or resolved.

At least Emilia-Romagna, Rotterdam and Tallinn use an index or maturity indicator to describe the level of digitalisation of their services. This categorisation enables the organisations to get a quick view on the status of their service digitalisation. While a service might be categorised at the highest maturity level as being a fully automated digital process, it often still also has a lower-level interaction option.

Most of the cities use historical data to follow the growth and development of their digital services. The information is also used to see whether there is need to create campaigns to encourage people to use them. In some cases, data is compared only to the previous year, but it seems to be more common to follow a longer trend in the development.

Emilia-Romagna has defined a list of 140 municipal administrative proceedings. For each service, there are three levels of interactivity:

0%: the online service is not available

50%: it is possible to start the administrative procedure

100%: it is possible to finish the administrative procedure (payment included)

These figures are used to calculate the Regional index, with 100% being the ideal situation where all municipalities have all the 140 online services available for all the three levels of interactivity.

3.6 PROTECTION OF PERSONAL DATA AND PRIVACY & SECURITY

The European Data Protection Regulation, commonly known as GDPR, has been applicable since May 25th, 2018. The introduction of the regulation was meant to harmonise European data privacy laws and make sure citizens' personal data is protected. As expected, all respondents are up to date regarding their responsibilities and are fully GDPR compliant. This includes the possibility for citizens to correct and/or delete their personal information and be informed of the purposes for which it is used. However, cities have legal obligations to provide certain services, and in some of these cases personal data cannot be erased.

It is typical to provide links to the city privacy policy, as well as contact information to the local Data Protection Officer (DPO), wherever digital services are accessed. To rectify or delete their data, the user often can contact the city through the online service or visit a city service point in person.

To make sure personal data stays protected, secure authentication is necessary for sensitive services. The secure authentication methods and levels are sometimes controlled by national legislation or nation-wide secure systems are used. This is the case at least in Italy, with the use of SPID (Public Digital Identity System), the Italian SSO system for public administrations, becoming obligatory starting in October 2021. In Finland, the use of the Suomi.fi national e-identification service is mandatory for new services with older ones still having some time for transitioning. Typical identification methods include bank codes, mobile certificates, or smart ID cards. National systems also consider compatibility with the eIDAS (electronic IDentification, Authentication and trust Services) tokens.

One of the issues with authentication systems is that in order to be secure, they are sometimes slightly difficult to use or might cause compatibility problems with the users' equipment, because people might be using older operating systems or browsers for instance. Lower digital skills may be a barrier for obtaining and using an advanced, secure authentication method. In addition to this, many of the secure authentication methods rely on things that are only accessible to citizens, leaving other groups using face-to-face services.

Estonia offers a national ID card, usable also for secure authentication, that even non-residents can apply for.

Cities also offer services that do not handle sensitive information and where using the most secure authentication methods would maybe be a bit excessive. There are systems that can be used with a traditional login and password combination that users themselves can choose.

Secure authentication has often been developed for individuals and are typically tied to the person and their codes or IDs. This may be a problem for businesses, who do not have similar identification methods.

3.7 INCENTIVES FOR DIGITAL SERVICE USE

All but one of the cities provide incentives for citizens to use digital services. The incentive often comes in the form of encouragement: cities organise campaigns and distribute information about the digital services they offer. The results of these campaigns are typically monitored through online service use statistics. Cities also use their general surveys to evaluate the effectiveness of their actions regarding incentivization.

Encouragement is one thing, but in some cases, citizens can be offered direct benefits if they use digital services. Obviously, they are often offered much more flexibility regarding their service use: online services are typically on at every hour of the day, whereas customer service representatives are reachable only during certain hours. Cost savings that are directly due to the transaction being carried out digitally, such as printing and postage fees, can be transferred directly to the customer for their benefit. In some cases, administration fees have been waived for digital services.

A big factor in using digital services is being able to do so. Some people lack the equipment or the skills to be able to use digital services and be sure that everything was done correctly. A way to increase the use of digital services is then to provide equipment and guidance. For

Barcelona has a team of "digital agents" that help people with low skills to use digital services. There are active in neighbourhoods where the digital divide is more pronounced.

example, city libraries and service points in Espoo provide public access computers and free Wi-Fi as well as guidance in the use of the city's digital services. Inexpensive adult education courses on digital skills are also offered.

Milan has been developing a model to calculate the impact of digital transformation from the point of view of the citizens around the time, money and CO₂ emissions saved every time a citizen requests an online service rather than at a municipal office. The plan is to communicate this information to users. This approach offers the possibility to also consider the environmental impact of the chosen delivery method.

Part of giving people incentives to use digital services is making them better: if digital services save time and are easy and pleasant to use, that in itself can encourage people to use them. The goal is to provide both citizens and administrators with a more convenient way of handling their interaction.

Milan has developed an internal, real-time dashboard that tracks the ratio between analogue and digital requests for specific services.

During the last year, a new and unexpected factor influenced digital service use in a substantial way: the COVID-19 pandemic has increased the use of remote services as people are more reluctant to visit in person and there have been lockdowns and closures across the world. It is likely that many people who had to take the leap and started using digital services because of the pandemic, will continue to do so also in the future.

3.8 REDUCTION OF ADMINISTRATIVE BURDEN

The questions related to the reduction of administrative burden were about the optimisation of digital processes and the personalisation of public services. While individual cities have varying approaches, starting from not measuring either of these at all, optimisation is done in most of the cities. Personalisation is another matter altogether, as there are either very few personalised services offered. The focus has been more on digitalisation and the organisations seem to recognise that not many services can be personalised. There are, however, some proactive alerts and reminders e.g. related to health check-ups.

Some organisations are gradually working on big re-engineering processes with their digital services, but in some cases, bigger changes may require updates in the legal framework.

Sometimes, the reduction of administrative burden is evaluated when digitalising a new service: the time and money saved both for the city and its citizens is estimated and the effects can be compared to data from previous years. In many cases, optimisation is part of the information garnered from a variety of tools including background monitoring and website analytics: the data collected is not earmarked for a specific purpose, but a thorough analysis will reveal aspects of the services that could possibly be improved. Many cities are also employing Lean methodology for optimisation.

Another approach to service optimisation is to look at it not from the cost or time savings viewpoint, but from a service integration perspective – how well and

In Tallinn, the optimization of digital services is measured by service integration and whether services in the public service database are integrated to other systems.

extensively are services integrated to other systems? Integration reduces the need to use or look for information in other systems, thus eliminating a lot of unnecessary back and forth movement.

There seems to be room for improvement when it comes to personalisation and proactive services. In many cases, privacy concerns and the sporadic use of public services may deter some of these changes.

3.9 CITIZEN ENGAGEMENT

All the organisations who responded engage their citizens or businesses in the creation and improvement of digital services. Citizen engagement, however, is not measured to a large extent – more specifically, the percentage of people who have participated in some sort of activity is difficult to estimate. Privacy laws and separate events organised by various people inside the organisation might limit the information gained about the engagement percentage. When there is a clear activity, participation in that is measured, but not overall as a general metric.

Despite not using the percentage of population that has been activated as a metric, cities have been successful in identifying the groups that are typically participating – and those that, in turn, are left out of different activities. Many of the cities recognised that they have a harder time reaching and engaging especially young people and immigrants as well as language minorities. In some cases, the city organisation itself does not value citizen engagement very much, so it may come down to individual service owners to employ user-engagement methods if and when they want.

Figure 1 shows (out of the four options given) the types of engagement activities used. The methods for doing these things include e.g. events, surveys, using collaboration platforms and arranging co-creation workshops.

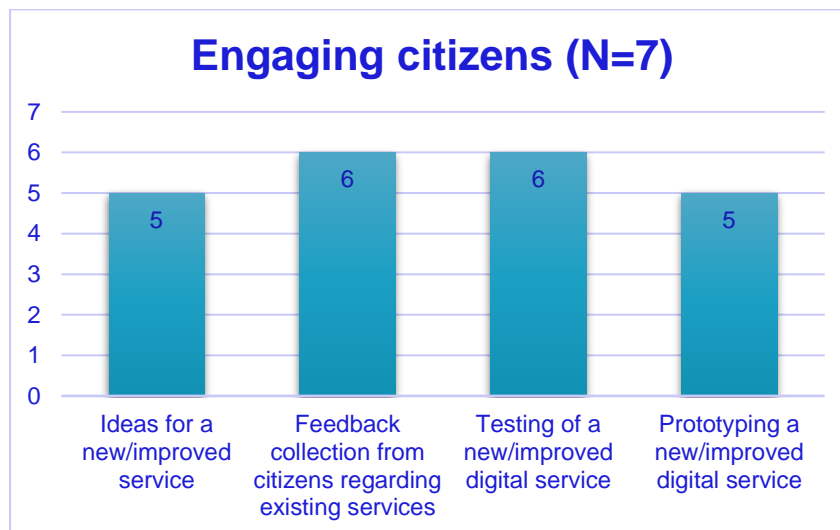


Figure 1. Engaging citizens.

Digital participation seems to attract a different group of people to participate than traditional “live” events. The pandemic has increased remote participation more than expected for some events. Once the situation is back to normal, a combination of both in-person and remote activities could reach a wider group of people.

3.10 REDRESS AND COMPLAINT MECHANISMS

The complaint process is measured and monitored in most of the cities. Typical measurements include the number of claims and their type and the time needed to complete the process. In some cases, the target time for processing complaints may be dependent on their type.

In Espoo, the city needs to respond within five days of receiving feedback.

Tracking and/or ticket numbers are used to some extent to enable citizens to follow the processing of their complaint. In case an online system is not available to follow the process, citizens are typically contacted when their input is needed.

While a written form – either on paper or online/email – is in some cases required to file a formal complaint, many cities receive and accept feedback through a variety of other channels as well, including phone calls, mobile app, face-to-face appointments and social media. As the nature of e.g. face-to-face feedback can be quite different from an official written complaint, there might not be any follow-up that can be communicated back to the citizen.

3.11 SUMMARY AND CONCLUSIONS

Overall, user-centricity is very important to all the cities, but their approaches to measuring and deploying user-centric services vary quite a lot. As most of the organisations do not have a specific definition of user-centricity, the term can mean very different things to different people, and that was also apparent in the responses received for this survey.

Cities use a wide selection of methods and tools to measure aspects of user-centricity related to the Tallinn Declaration principles. While website analytics can be used to see whether the site itself is performing well, the data offers an overview also of the most popular pages as well as services with which users might have problems. The results from these measurements can help in tracking accessibility, usability, and digital interaction. Other common approaches of evaluating user-centric aspects of public services include feedback channels and surveys, but even co-creation workshops, external specialists and specific UX testing methods are used.

As expected, cities handle their legal responsibilities well, although some regulations may occasionally make even measuring user-centricity slightly more cumbersome or inaccurate. For example, people can opt out of tracking their web browsing, thus blocking the service provider from seeing from their reports if problems are encountered.

A lot of data is collected automatically from different processes and services, but not every organisation has a clear overview of everything. Some responsibilities are handled by individual service owners and reporting can be done in as many ways as there are reporters. This might lead to lack of consistency in reporting. Building more comprehensive dashboards and unified reporting templates might help in some cases to get a quick overview of the situation.

One issue that was noted by most respondents was that certain groups are easily left out from citizen engagement endeavours, development and even use of public services. Especially young people and immigrants or people who do not speak the local language are more difficult to engage. The most active people are usually the same ones and reaching the others is hard. Cities have noted, however,

that the pandemic has both increased the use of online services as well as participation in remote events.

4. DIRECTIONS

The following directions are based on the findings reported in the previous two chapters (2 and 3). Their primary aim is to support the design of key requirements for user-centricity indicators that are relevant for locally offered digital public services. In addition, they suggest areas of concern with respect to a common approach to user-centric design and delivery of digital services within and across local government organisations.

- Current user-centricity assessments identified in relevant instruments and frameworks can be used, at best, as starting points for defining localised user-centricity measurements. The development of such measurements should have a basis on an agreed set of commonly agreed key areas for benchmarking among local governments.
- None of the reviewed instruments and frameworks include measurements that cover exactly the scope of Tallinn Declaration's user-centricity principles. In addition, some principles cover various topics, such as the principle entitled as "Accessibility, security, availability and usability". The adequate measurement of each user-centricity principle, at a local government level, may require the development of several metrics.
- The sides of supply and demand need to be covered by localised user-centricity measurements. Measurements regarding user satisfaction and the monitoring of feedback channels are just two ways to address the demand side. However, the various ways that citizens interact with local governments hint that there can be more ways for measuring user-centricity from the demand side.
- While there are no instruments and frameworks dedicated to the user-centricity measurements of locally offered services, there might be relevant ongoing projects. Their identification and the mapping of their activities may support UCCs' development of localised user-centricity measurements and potentially broaden UCCs' reach. Such scanning could be done in relation to the Task of sustainability strategy development (Task 4.6).
- Localised user-centricity measurements may require the involvement of various organisational departments and employees involved in service design, delivery and procurement. This, in turn, raises the issue of alignment toward a common vision of locally offered user-centric services and about the value of measuring user-centricity from various angles\perspectives, including those of citizens and local businesses.
- The adaptation of localised user-centricity measurements according to the Tallinn Declaration's user-centricity principles requires a focus on each principle. The measurement of some user-centricity dimensions (i.e. principles) may be partially based on automatically generated data while another the measurement of another dimension may require dedicated efforts to collect relevant data.
- Inclusiveness of different social groups in the design and use of locally offered digital services may have an impact on the measurements. The non-use and the limited use of digital

services by particular social groups should also be taken into consideration by localized user-centricity measurements.

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ANNEXES

ANNEX 1. TALLIN DECLARATION'S USER-CENTRICITY PRINCIPLES ON EGOVERNMENT

User-centricity principle	Description
Digital Interaction	<p>When interacting with public administrations and using digital public services, citizens and businesses should expect:</p> <ul style="list-style-type: none"> To have the option to digitally interact with their administrations.
Accessibility, security, availability, and usability	<ul style="list-style-type: none"> That the services are made more accessible (including findable) and secure and can be used by all in a non-discriminatory manner, with appropriate assistance available upon need. That the principles of universal design have been applied to the setting up of the services. That the websites are simple to read and easy to understand. That the authenticity of digital public services is secured and can be recognised in a clear and consistent manner.
Reduction of the administrative burden	<ul style="list-style-type: none"> That public administrations make efforts to reduce the administrative burden on citizens and businesses, namely by optimizing and/or creating digital processes and services where relevant and possible, and by offering personalised and pro-active services. Not to be asked to provide the same information to public services more than once, in due respect of data protection rules and regulations.
Digital delivery of public services	<ul style="list-style-type: none"> That public services can as much as possible and appropriate, especially upon request of the user, be fully handled online, including the provision of any evidence required to obtain a right or fulfil obligations. That the status of service delivery can be checked online where relevant.
Citizen engagement	<ul style="list-style-type: none"> That digital means are used to empower citizens and businesses to voice the views, allowing policy makers to collect new ideas, involve citizens more in the creation of public services and provide better digital public services.
Incentives for digital service use	<ul style="list-style-type: none"> The barriers to use digital public services should be effectively removed, including by extending and promoting the benefits of, for example, higher confidence, speed, effectivity and reduced costs to individuals who are able to use them.
Protection of personal data and privacy	<ul style="list-style-type: none"> That the handling of personal data respects the general data protection regulation and privacy requirements in the EU and national levels, when applicable informing citizens about the use and storage of their personal data and allowing citizens to access and ask for the correction and deletion of personal data, where appropriate.
Redress and complaint mechanisms	<ul style="list-style-type: none"> That redress mechanisms are available online and that citizens and business have access to complaint procedures online, while also in other available channel(s) of their choice.

DESKTOP STUDY APPROACH

An online topic-specific search was conducted for identifying tools and frameworks that have been used in performing user-centricity assessments of digital public services in Europe. Keyword search including topic-specific terms such as “user-centricity”, “citizens”, “assessment”, “digital services”, “digital public services”, “local government”, “cities”, “European Union”, “Europe” was mainly performed through search engines, including EU’s publication office (<https://op.europa.eu/en/home>), OECD’s library (<https://www.oecd-ilibrary.org/>) but also Google and Google Scholar.

The search results were initially refined according to their relevance to the topic in focus. For this refinement step, general descriptions of studies were considered. However, the considerations for excluding or including a result were not always straightforward.¹³

An interesting case was the identified Serving Citizens Framework. Included in the 2019 Government at a Glance report¹⁴, the framework evaluates public services, but does not specifically consider digital public services (without excluding them either). While it acknowledges the user-centric perspective in the evaluation, it finally employs the notion of people-centricity; a choice explained as an emphasis to inclusiveness in terms of an individual’s multiple roles, such as those of citizenship, the user and the work force member. Due to the affinities with the topic of the desktop study, the Serving Citizens Framework was considered as relevant for further study.

From the remaining results, only those studies referring to *applied* instruments and *developed* frameworks were considered. From these, were further excluded some frameworks that: a) only considered specific service areas (e.g. education, health, transportation) and b) were assessing only specific aspects of user-centricity, such as that of quality (see, for example the study of Singh and Singh, 2018¹⁵).

Finally, when search results yielded several versions of the same instrument, only the latest one was further examined. For example, many of the results obtained by the search engine of EU’s publication office referred to the eGovernment Benchmark. In this case only the most recent eGovernment benchmark reports referring to the user-centricity assessment were considered. However, it should be noted that older versions of the eGovernment Benchmark have emphasized the importance of user-centricity in digital public services.

¹³ For example, the following two studies : a) “Recommendations for organising and governing integrated public services” (accessible from here : <https://op.europa.eu/en/publication-detail/-/publication/717f26a7-722b-11ea-a07e-01aa75ed71a1/language-en>) and b) “Core skills for public sector innovation” (accessible from here : <https://oecd-opsi.org/projects/innovation-skills/>) seemed relevant due to their appearance as results of a search which included the keyword of user-centricity assessment. However, a keyword search within the actual reports of each study revealed that user-centricity was treated at the level of general recommendation for designing rather than assessing user-centric public services. Nevertheless, such studies were noted and their reports were collected and stored with the purpose to receive further consideration in other parts of UCCs project, such as the UCCs online service design toolkit (currently under development).

¹⁴ Full report accessible from here: <https://www.oecd.org/gov/government-at-a-glance-22214399.htm>

¹⁵ See, for example the study of Singh & Singh (2018) entitled as: Citizen centric assessment framework for e-governance services quality (Accessible from here: <https://www.inderscienceonline.com/doi/abs/10.1504/IJBIS.2018.088568>)

QUESTIONNAIRE DESIGN

Participants were asked to answer a questionnaire on user-centricity definitions and measurements by considering the overall offering of digital services of their organisation to citizens and businesses. The actual questionnaire can be found in the next section of this Annex.

The questionnaire consists of two main parts: The Digital Services part and the Background Questions part. The Digital Services part was based on the Tallinn Declaration's user-centricity principles. The Background Questions part contains questions about the people involved in answering the questionnaire and inquires for any other relevant information and documentation that can be provided by the respondents.

The questionnaire was realised as a Word document to provide an opportunity for several people to collaborate on the answers and complete the questionnaire in a non-linear way. However, one person from each organisation was identified as responsible for collecting the answers and for submitting the completed questionnaire.

The questionnaire was distributed to all UCCs partners by e-mail. The survey was sent out on February 10, 2021, and participants were given three weeks of response time with the answers due on March 3, 2021. A reminder to answer the questionnaire was sent twice during the period of three weeks.

Seven UCCs partners and associate partners answered the questionnaire. The respondents were Barcelona, Emilia-Romagna, Espoo, Lisbon, Milan, Rotterdam, and Tallinn. For the ease of reading the findings of the questionnaire and to be more concise, only the term "cities" is used which, in this instance only, also includes the region of Emilia-Romagna.

All partners of UCCs were invited to a webinar for reviewing the findings of the questionnaire. The webinar was organised by VTT and took place on March 23, 2021. During the webinar, participants discussed about and commented on the preliminary findings that were acquired through the questionnaire. Thus, the report's findings regarding the current state of user-centricity assessments are the outcomes of a participatory process involving WP leaders, main and associate partners of UCCs.¹⁶

¹⁶ During the first months of UCCs, when Task 1.1 took place, the number of associated partners grew dynamically including, for example, Lisbon, Barcelona etc. – the exact cities have to be checked later. Owing to this dynamic situation, the questionnaire was distributed to associated partners (including Eurocities' working groups) that had officially expressed interest in participating to UCCs activities until the day of the questionnaire distribution (10.2.2021). Partners who joined in during later stages were, nevertheless, invited to partake in the results review webinars.

DIGITAL SERVICES

1. DIGITAL INTERACTION

The questions below aim to identify any measurements on the digital interaction between citizens and businesses with services.

According to the Tallinn declaration's principles: Digital interaction refers to the ability of citizens and businesses to interact digitally with their organisations.

1.1 Is the interaction of citizens and businesses with digital services measured?

Yes

No

1.2 If yes, how is digital interaction measured?

Click or tap here to enter text.

1.3 If no, are there specific reasons for not doing so?

Click or tap here to enter text.

2. ACCESSIBILITY AND AVAILABILITY

The following questions aim to identify any measurements on the availability of services to citizens and businesses and of their accessibility.

According to the Tallinn declaration's principles: Services shall be made more accessible (including findable) and secure and can be used by all in a non-discriminatory manner, with appropriate assistance available upon need. Also, principles of universal design have been applied to the setting up of the services and that the websites are simple to read and easy to understand.

2.1 Do you measure the accessibility and availability of the digital services offered to citizens and to businesses?

Yes

No

2.2 If yes, how is the accessibility and availability of your digital services measured?

Click or tap here to enter text.

2.3 Are there specific metrics and/or methods applied in order to measure the accessibility of digital services by all social groups regardless of their specific needs (e.g. visual impairment, low digital skills, etc.)? If yes, please provide examples of specific metrics:

Click or tap here to enter text.

3. USABILITY

The following questions aim to identify any measurements on the usability of services to citizens and businesses and of their accessibility.

3.1 Do you measure the usability of the digital services offered to citizens and businesses?

Yes

No

3.2 If yes, how do you measure the usability of the digital services offered to citizens and businesses?

Click or tap here to enter text.

4. DIGITAL DELIVERY OF PUBLIC SERVICES

The questions below aim to identify any measurements on the digital delivery (supply) of public services.

According to the Tallinn declaration's principles: Digital delivery refers to the possibility of digital services (when appropriate), and upon the request of the user, to be fully handled online, including the provision of any evidence required to obtain a right or fulfil obligations.

4.1 Do you measure the percentage and number of services that are available online? If yes, how?

Click or tap here to enter text.

4.2 Do you measure offline versus online service use? If yes, how?

Click or tap here to enter text.

4.3 Do you use historical data about the amount of online and offline interaction? If yes, how?

Click or tap here to enter text.

5. PROTECTION OF PERSONAL DATA AND PRIVACY & SECURITY

The aim of the below questions is to understand the **overall status** of the digital services offered locally with regards to protection of personal data and privacy issues and, security.

According to the Tallinn declaration's principles:

- handling of personal data respects the general data protection regulation and privacy requirements in the EU and national levels, when applicable informing citizens about the use and storage of their personal data and allowing citizens to access and ask for the correction and deletion.
- authenticity of digital public services is secured and can be recognised in a clear and consistent manner

5.1 Do the digital services offered by your organisation to citizens and businesses respect the General Data Protection Regulation (GDPR) and additional (if any) privacy requirements?

Yes

No

5.2 Are citizens informed about the use and storage of their personal data when using the digital services offered by your organisation?

Yes

No

5.3 Can citizens ask for the correction and the deletion of their personal data that concern the use of digital services?

Yes

No

5.4 If yes, please briefly describe the process from the citizen's point of view:

Click or tap here to enter text.

5.5 If no / not completely, please indicate any planned steps:

Click or tap here to enter text.

5.6 In your opinion, to what extent can the current authentication methods be successfully used by all citizens and businesses?

Click or tap here to enter text.

6. INCENTIVES FOR DIGITAL SERVICE USE

The questions below aim to identify any actions towards and measurements on incentives of using digital services.

According to the Tallinn declaration's principles: Incentives for digital service use concern the removal of barriers related to the use of digital services, including by extending and promoting the benefits of, for example, higher confidence, speed, effectivity and reduced costs to individuals who are able to use them.

6.1 Do you provide incentives for citizens and businesses to use digital services?

Yes

No

6.2 If yes, what actions do you take in order to encourage citizens and businesses to use digital services?

Click or tap here to enter text.

6.3 Do you evaluate the effectiveness of the incentives that are provided to citizens and businesses for using digital services? If yes, how?

Click or tap here to enter text.

7. REDUCTION OF ADMINISTRATIVE BURDEN

The questions below aim to identify any measurements on: a) the optimization of digital processes within the organisation and b) the personalization of services offered to citizens and businesses.

According to the Tallinn declaration's principles: The administrative burden on citizens and businesses should be reduced by a) optimizing and/or creating digital processes and services where relevant and b) offering personalized and proactive services.

7.1 Do you measure the optimization of your digital processes? If yes, how?

Click or tap here to enter text.

7.2 Do you measure the personalization of services offered to citizens and businesses? If yes, how?

Click or tap here to enter text.

8. CITIZEN ENGAGEMENT

The questions below aim to identify any measurements regarding citizen engagement, the level of citizen engagement through digital services and the types that citizen engagement is achieved in service creation or improvement.

According to the Tallinn declaration's principles: Citizen engagement refers to the use of digital means for the empowerment of citizens and businesses to voice their views, to collect new ideas, involve citizens more in the creation of public services and provide better digital services.

8.1 Do you measure citizen engagement?

Click or tap here to enter text.

8.2 What measures and methods do you use to measure citizen engagement?

Click or tap here to enter text.

8.3 Can you estimate the percentage of the population who are in some way engaged through your digital services? If yes, what is it?

Click or tap here to enter text.

8.4 Based on the information available to you, have you identified citizen groups you would like to be more active and more engaged through your digital services?

Click or tap here to enter text.

8.5 Do you engage citizens and/or businesses in the creation and improvement of digital services?

Yes

No

8.6 If yes, please indicate below types of engagement (you can indicate more than one types):

- Ideas for a new/improved digital service
- Prototyping of a new/improved digital service
- Testing of a new/improved digital service
- Feedback collection from citizens regarding existing services
- Other, please specify:

Click or tap here to enter text.

9. REDRESS AND COMPLAINT MECHANISMS

The questions below aim to address complaint and redress mechanisms that citizens can use and follow up as well as any related measurements.

According to the Tallinn declaration's principles: Redress mechanisms should be available online and that citizens and business have access to complaint procedures online, while also in other available channel(s) of their choice.

9.1 Do you offer the chance to your citizens and businesses to submit complaints and redressal requests online? If yes, please explain how these can be followed up.

Click or tap here to enter text.

9.2 What other ways do citizens and businesses have to provide feedback and complaints and how can these be followed up?

Click or tap here to enter text.

9.3 Do you measure the complaint process? If yes, how?

Click or tap here to enter text.

10. MEASURING USER-CENTRICITY

The questions below aim to collect existing definitions of user-centricity and information on measurements, tools, and actions regarding the organisation's approach to user-centricity. Please note that some questions include an inquiry for additional material that can be provided.

The following questions shall be answered by the person who is responsible for the completion and the final submission of this questionnaire.

10.1 Does your organisation provide a definition of user-centricity of (digital) services? If yes, what is it?

Click or tap here to enter text.

10.2 For which digital services do you measure user-centricity?

Click or tap here to enter text.

10.3 Is the measurement of user-centricity of digital services important to your organisation? If yes, why?

Click or tap here to enter text.

10.4 Do any of the user-centricity measurements mentioned in this questionnaire have any influence on decisions taken by your organisation? If yes, please provide some examples:

Click or tap here to enter text.

10.5.a What tools do you use in order to **measure** the user-centricity of digital services (e.g. dashboards, internal guidelines and protocols)?

Click or tap here to enter text.

10.5.b Please provide link(s) to relevant material or include them as an attachment when returning the completed questionnaire.

Click or tap here to enter text.

10.6.a What tools/guidelines/support do you use in order to **deliver** user-centric services?

Click or tap here to enter text.

10.6.b Please provide link(s) to relevant material or include them as an attachment when returning the completed questionnaire.

Click or tap here to enter text.

10.7 In an ideal world, what other metrics or tools for measuring user-centricity (that you do not currently have) would you need?

Click or tap here to enter text.

BACKGROUND QUESTIONS

1. Please indicate the person responsible for submitting the filled questionnaire and those involved in answering (parts of) the questionnaire by name and by department/role.

Example: Name of responsible person & Department/role, + name and department/role of additional people involved in answering the questionnaire

2. In case that additional data regarding the information given in the questionnaire is needed, who should we contact?

Click or tap here to enter text.

3. Please add any information that you think might be relevant for understanding the current status of user-centricity in local level that might not have been captured by this questionnaire.

Click or tap here to enter text.

When returning the completed questionnaire, please remember to include any attachments mentioned in section 10!

Thank you for your participation!

ANNEX 3. DESI'S KEY INDICATOR OF DIGITAL SERVICES AND INCLUDED INDICATORS

KEY INDICATOR OF DIGITAL SERVICES	
INDICATORS	DESCRIPTION
User-centricity	<p>This indicator includes the following three key elements of online service provision.</p> <ol style="list-style-type: none"> 1. Online availability: this illustrates how services are made available (there are four possibilities: the service is automated; the service is available online through a portal or directly; information on the service is available either through a portal or online; the service or any information about the service is not online available). 2. Usability: this measures the availability of support channels and feedback mechanisms, such as online chats. 3. Mobile friendliness: this captures the extent to which government services are available through mobile devices, providing a seamless and convenient mobile experience to the public and businesses.
eGovernment Users	<p>This indicator considers out of all internet users who needed to submit forms to the public administration - the percentage who submitted the forms through online means.</p>
Pre-filled forms	<p>This indicator measures the extent to which data that is already known to the public administration is pre-filled in forms presented to the user, awarding a maximum overall score of 100. The use of inter-connected registers is key to ensuring that users do not have to resubmit the same data to the public administration.</p>
Online service completion	<p>Online service completion refers to the extent to which the various steps needed for dealing with the public administration can be done completely online.</p>
Digital public services for businesses	<p>The indicator measures the degree to which public services for businesses are interoperable and work cross-border. It is calculated as the average of the national and cross-border online availability for basic services.</p> <p>The indicator assesses to what extent basic public services for businesses, when starting a business and conducting regular business operations, are available online and across borders in other EU Member States. Services provided through a portal receive a higher score, while services that only provide information online, but which require operations to be carried out offline receive a lower score.</p>
Open data	<p>This indicator measures the government's commitment to open data.</p> <p>Since 2018, the level of maturity of open data has been based on the four following indicators.</p> <ol style="list-style-type: none"> 1. Open data policy: <ul style="list-style-type: none"> (i) the presence at national level of specific policies on open data and licensing norms; and (ii) the extent of coordination at national level to: (a) provide guidelines to national, local, and regional administrations; and (b) set up coordinated approaches towards data publication. 2. Open data portals: the development of national portals and their level of sophistication in featuring available open data. 3. Open data impact: the impact of open data at country level on four dimensions: political, social, environmental, and economic. 4. Open data quality:

	<p>(i) the extent to which national portals have a systematic and automated approach to harvesting metadata from sources across the country; and</p> <p>(ii) the extent to which national portals comply with the metadata standard DCAT-AP (specification for metadata records).</p>
Key enablers	<p>The key enabler indicator includes the following four elements of online service provision and availability.</p> <ol style="list-style-type: none"> 1. Electronic Identification (eID) a government-issued document for online identification and authentication. 2. eDocuments: a document that has been authenticated by its issuer using any means recognised under applicable national law, specifically through the use of electronic signatures, i.e. not a regular PDF or Word document. 3. Authentic sources (named as pre-filled forms in DESI): base registries used by governments to automatically validate or retrieve data related to individuals or businesses. 4. Digital post: assesses whether public authorities allow people to receive communications digitally only, hence reducing paper mailings. Digital post refers to the possibility for governments to communicate with people or entrepreneurs by electronic means only, such as through personal electronic mailboxes.
Cross-border mobility	<p>Cross-border mobility indicates the extent to which users of public services from another EU country can use the online services of the EU country being assessed.</p> <p>Cross-border mobility includes four indicators, assessed in a cross-border scenario: online availability, usability, eID and eDocuments. These indicators measure whether services are available online, whether they are usable and whether key enablers like eID and eDocuments work for people from abroad.</p>

ANNEX 4. TALLINN DECLARATION'S USER-CENTRICITY PRINCIPLES AND THEIR ADAPTATION FOR THE EVALUATION OF TECHNOLOGIES THAT ENABLE INNOVATIVE PUBLIC SERVICES

User-centricity principle	Original description (Source: Tallinn Declaration, 2017)	Adaptation (Source: JRC. A multi-dimensional framework to evaluate the innovation potential of digital public services, Technical Report, 2020)
	<p>When interacting with public administrations and using digital public services, citizens and businesses should expect:</p>	
Digital Interaction	<ul style="list-style-type: none"> To have the option to digitally interact with their administrations. 	<ul style="list-style-type: none"> Technology gives to citizens and businesses the option to digitally interact with administrations.
Accessibility, security, availability, and usability	<ul style="list-style-type: none"> That the services are made more accessible (including findable) and secure and can be used by all in a non-discriminatory manner, with appropriate assistance available upon need. That the principles of universal design have been applied to the setting up of the services. That the websites are simple to read and easy to understand. That the authenticity of digital public services is secured and can be recognised in a clear and consistent manner. 	<ul style="list-style-type: none"> Technology makes digital public services more accessible (including findable) and secure and can be used by all in a non-discriminatory manner, with appropriate assistance available upon need. Technology makes it so that the principles of universal design are applied to the setting up of the services and that the websites are simple to read and easy to understand. Technology makes it so that the authenticity of digital public services is secured and can be recognised in a clear and consistent manner
Reduction of the administrative burden	<ul style="list-style-type: none"> That public administrations make efforts to reduce the administrative burden on citizens and businesses, namely by optimizing and/or creating digital processes and services where relevant and possible, and by offering personalised and pro-active services. Not to be asked to provide the same information to public services more than once, in due respect of data protection rules and regulations. 	<ul style="list-style-type: none"> Technology supports Public Administrations' efforts to reduce the administrative burden on citizens and businesses, namely by optimizing and/or creating digital processes and services where relevant and possible, and by offering personalised and pro-active services. Technology facilitates citizens and businesses not to be asked to provide the same information to public services more than once, in due respect of data protection rules and regulations.
Digital delivery of public services	<ul style="list-style-type: none"> That public services can as much as possible and appropriate, especially upon request of the user, be fully handled online, including the provision of any evidence required to obtain a right or fulfil obligations. That the status of service delivery can be checked online where relevant. 	<ul style="list-style-type: none"> Technology procures that public services can as much as possible and appropriate, especially upon request of the user, be fully handled online, including the provision of any evidence required to obtain a right or fulfil obligations. Technology ensures that the status of service delivery can be checked online where relevant.
Citizen engagement	<ul style="list-style-type: none"> That digital means are used to empower citizens and businesses to voice the views, allowing policy makers to collect new ideas, 	<ul style="list-style-type: none"> Technology empowers citizens and businesses to voice their views, allowing policy makers to collect new ideas,

	involve citizens more in the creation of public services and provide better digital public services.	involving citizens more in the creation of public services and ultimately providing better digital public services.
Incentives for digital service use	<ul style="list-style-type: none"> The barriers to use digital public services should be effectively removed, including by extending and promoting the benefits of, for example, higher confidence, speed, effectivity and reduced costs to individuals who are able to use them. 	<ul style="list-style-type: none"> Technology helps remove barriers to use digital public services effectively, including by extending and promoting the benefits of, for example, higher confidence, speed, effectivity and reduced costs to individuals who are able to use them.
Protection of personal data and privacy	<ul style="list-style-type: none"> That the handling of personal data respects the general data protection regulation and privacy requirements in the EU and national levels, when applicable informing citizens about the use and storage of their personal data and allowing citizens to access and ask for the correction and deletion of personal data, where appropriate. 	<ul style="list-style-type: none"> Technology allows the handling of personal data in compliance with the GDPR and privacy requirements in the EU and at national levels, when applicable through informing citizens about the use and storage of their personal data and allowing citizens to access and ask for the correction and deletion of personal data, where appropriate.
Redress and complaint mechanisms	<ul style="list-style-type: none"> That redress mechanisms are available online and that citizens and business have access to complaint procedures online, while also in other available channel(s) of their choice. 	<ul style="list-style-type: none"> This technology procures that redress mechanisms are available online and that citizens and businesses have access to complaint procedures online, while also in other available channel(s) of their choice.