D1.3 GAP ANALYSIS

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INTRODUCTION

Over the last two decades, digital government has made significant progress, but it has yet to fulfil the promised benefits to citizens: only one out of every three persons used an online public service in 2018.[1] The cause is widely known: public services are not designed with users' needs in mind. This is why thirty-two European Union and European Free Trade Association countries signed the Tallinn Declaration on Digital Government and its annex, the User-Centricity Principles in 2017.[2] These principles (see appendix) demonstrate that user-centricity entails not only creating more usable interfaces, but also revamping government services to meet the demands of users.

The user-centricity principles have already begun to be converted into operational measurements, most notably in the metrics used to track European success. Benchmarking is a critical tool in European policymaking, particularly in the area of digital governance, where it has successfully changed member state behaviour during the previous 20 years.[3] However, all these developments seem to overlook the local dimension.

For this reason, the UserCentriCities (UCCs) project sets out to build a measurement and benchmarking tool for user-centric public services in European cities. To do that, it started off from two questions:

1. What needs to be measured?
2. And what is measured already?

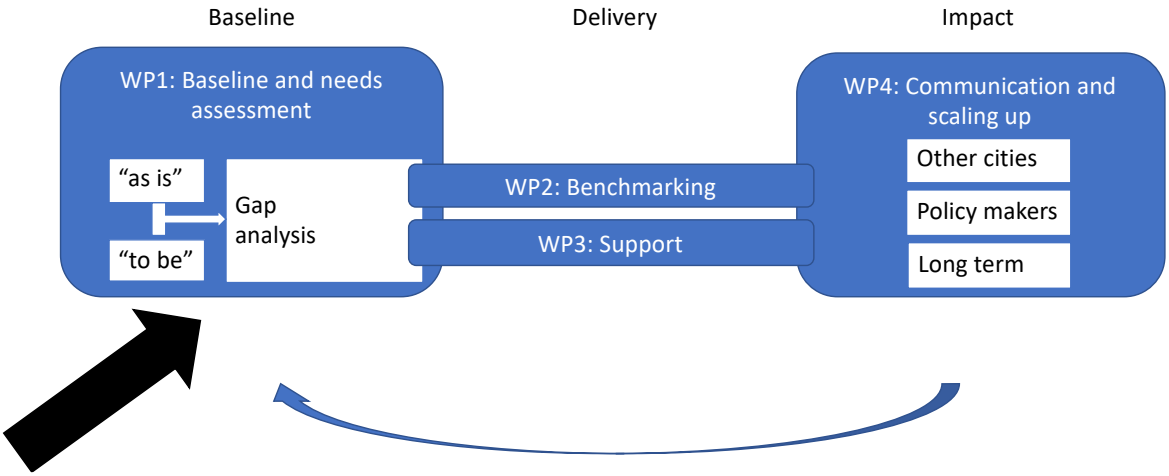

Figure 1: Logical architecture of the UserCentriCities project

The first question ("to be") was answered through an adapted and operational version of the Tallinn Declaration according to local authorities. The localised Tallinn declaration principles provide a shared

[1] Eurostat, "Individuals Using the Internet for Interaction with Public Authorities by Type of Interaction," 2020.
[2] *Tallinn Declaration on eGovernment*, 2017.
[3] Frank Bannister, "The curse of the benchmark: an assessment of the validity and value of e-government comparisons," 2007.

vision that adapted the user-centricity principles of the Tallinn declaration to the needs of European cities and citizens.[4]

The second question ("as is") was addressed through an extensive baseline survey. The baseline survey report contains a thorough analysis of how digital services are measured in the literature and in the practice of European cities.[5]

The present gap analysis provides the comparison between the two, by analysing each user-centricity principle in detail and identifying clearly what needs to be but is not yet measured.

The result is a set of clear "measurement gaps" that need to be addressed by the upcoming dashboard. As depicted below, these gaps are classified into three categories: Enablers, user-centricity performance and outcomes. Over the following months, the project will work to transform such gaps into indicators and data collection methods. Those will be used in the dashboard.

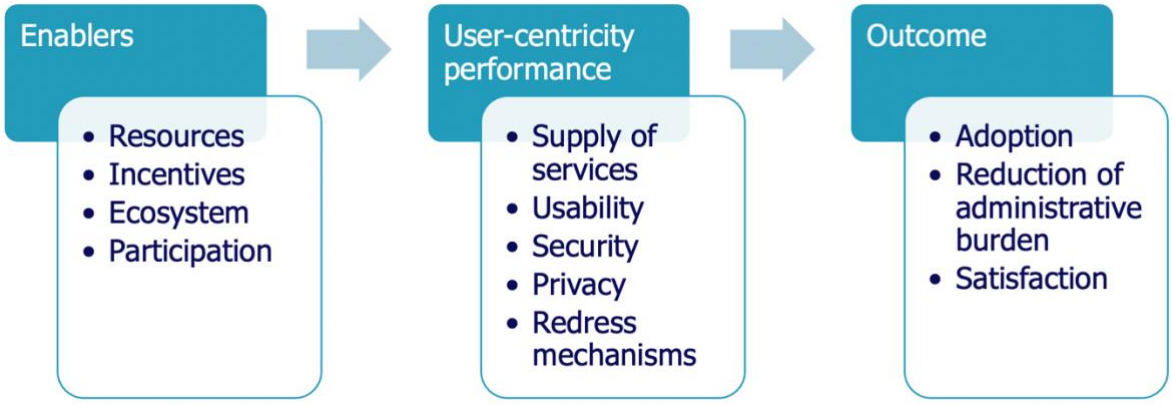

Figure 2: Overview of the measurement gaps identified in the report

The measurement gaps identified in the present document are not written in stone. They will be continuously revised based on the feedback from partners and stakeholders, as well as new insight from research.

This introduction is followed by a description of the methodology applied to perform this gap analysis. Afterwards, the identified gaps and areas for adjusting and developing new measurements are described for all eight user-centricity principles. The cross-analysis is followed by the application of the intervention logic approach. Finally, the report closes with a concluding chapter.

[4] UserCentriCities, "Adapted user-centricity principles," 2021.
[5] UserCentriCities, "Baseline survey report," 2021.

METHODOLOGY

The analytical effort to identify the measurement gaps is structured in two steps: First, the input from UCCs "as is" and "to be" analysis is cross-analysed to identify the existing gaps and design the key requirements to be met through a dashboard containing user-centricity KPIs. Second, the identified gaps are mapped against an intervention logic approach. Both steps are explained in the chapters below.

STEP 1: CROSS-ANALYSIS

As for the first step, the framework used to cross-analyse the content of UCCs baseline survey report and the localised user-centricity principles is depicted in table 1. Columns one and two are used to classify the specific needs that have to be measured from every user-centricity principle. In columns three and four the respective indicators found in both existing international benchmarks and partner cities are listed. Column five indicates how many of the seven participating cities[6] have any existing measures for the specific needs listed in column two.

Table 1: Framework used to cross-analyse D1.1 and D1.2

D1.2		**D1.1**			**D1.3**	
Principle Tallinn +	**Specific need**	**Possible indicators**	**Existing indicators (general)**	**Existing measurement in partner cities**	**Gap**	**Solution**

Based on the nature of the gap, and the existence of general or other possible indicators one of the following options is suggested as a solution:

a) needs for developing new measures according to (sets of) Tallinn Declaration's principles,

b) needs for adjusting existing inputs into measures of user-centricity,

c) needs for integrating existing measures into the dashboard.

In some cases, the specific needs from the Tallinn Declaration were not directly captured by the baseline survey.[7] In that case, it is indicated that the respective needs should be discussed with cities during the development of the indicators and checklist. Depending on the result of the discussion, new measures can be developed. This development process will take place in fall 2021 and is open for any European municipality to join.

STEP 2: INTERVENTION LOGIC APPROACH

Building on the results of the cross-analysis, the identified measurement gaps are classified using the intervention logic approach. The intervention logic approach is about comparing the drivers and the impacts of user-centricity. This approach is consistent with the "intervention logic" approach in policy analysis as described in the better regulation approach.[8] In order to generate change, public policies need to understand and act on the underlying factors and to fully understand the ultimate implications

[6] A total of seven cities and regions participated in the baseline survey: Barcelona, Milan, Espoo, Emilia Romagna region, Lisbon, Rotterdam and Tallinn.
[7] UserCentriCities, "Baseline survey report," 2021.
[8] European Commission, *Better Regulation Guidelines*, COM 2015 215 (Brussels: European Commission, 2015).

of the action. Otherwise, the risk is that measurement becomes a target that drives policy rather than supporting it – the so called Goodhart's law. This has been too often the case for existing measurement frameworks of digital government.[9]

To avoid this risk, UCCs complements the cross-analysis described in step 1 with a holistic analysis of enablers and outcomes, as illustrated in the figure below.

Figure 3: Intervention logic approach on user-centricity

Enablers can typically include financial resources, human resources, dedicated policies, and citizens' involvement. Outcomes can cover, among others, quality of services, adoption of services, and citizens' satisfaction.

[9] Frank Bannister, "The curse of the benchmark: an assessment of the validity and value of e-government comparisons," 2007.

IDENTIFIED GAPS AND AREAS FOR ADJUSTING AND DEVELOPING NEW MEASUREMENTS

DIGITAL INTERACTION

The first user-centricity principle, *digital interaction*, asks for citizens to have the option to interact with their administrations digitally.[10] Results from UCCs' baseline survey show that all participating cities measure, to some extent, the level of digital interaction with their citizens. Amongst the indicators mentioned in the survey questionnaires are the number of connections on the city website, the number of different users, the time spent browsing the website or specific page, the number of contacts via digital channels, the number of interactive services offered, and the digital versus analogic service utilization.

With all cities having measurements in place to monitor digital interaction, there is no need to develop new measures for this principle. However, most cities work with slightly different indicators. Therefore, there is the need to adjust the existing measures and develop a harmonized indicator that can be adopted by the cities.

Therefore, there is the need to adjust the existing measures and develop a harmonized indicator that can be adopted by the cities.

Table 2: Gap analysis - digital interaction

D1.2		D1.1			D1.3	
Principle Tallinn +	**Specific need**	**Possible indicators**	**Existing indicators (general)**	**Existing measurement in partner cities**	**Gap**	**Solution**
Digital interaction	Option to digitally interact with local administrations	• Yes/No • Number of connections/sessions on city website • Number of different users • Time spent browsing webpages[11] • Time spent in each page • Number of contacts via digital channels (email, social media, etc.) • Number of interactive services offered • Digital vs. analogic services utilization[12]	No	(7/7)	Small: inhomogeneous	Adjust existing inputs into harmonized measure

ACCESSIBILITY, SECURITY, AVAILABILITY AND USABILITY

[10] *Tallinn Declaration on eGovernment*, 2017.
[11] If this indicator was to be adopted into the dashboard, cities highlighted the need to define what the time spent browsing webpages indicates (low time good as the website is simple to use or high time good as the citizens finds value in using it).
[12] Cities stressed that there has to be a differentiation between services that are analogic but can be digitised and services that are analogic and cannot be digitalised by their nature.

According to the Tallinn Declaration, digital public services should be made more accessible (including findable) and secure. Additionally, they should be recognisable in a clear and consistent manner. The Tallinn Declaration mentions that it should be possible for all to use the public services in a non-discriminatory manner, with appropriate assistance upon need.[13] UCCs' partner cities added the need to pay specific attention to the usage of clear language (including icons and images) that is adapted to and understood by the users.[14]

Possible indicators that were identified through the baseline survey to measure the availability and accessibility of services are the number of public services digitally available versus the total number of public services, and the Web Content Accessibility Guidelines (WCAG) criteria[15]. All participating cities indicated that they are measuring the availability and accessibility of their services. Therefore, there is no need to develop new indicators to measure availability and accessibility of public services for the dashboard. The existing measures can be integrated into the dashboard.

With regards to secure authentication, almost all cities mention the use of key enablers such as an electronic identification card in their survey answers. In addition to a simple yes/no indicator, the eGovernment benchmark report already measures the adoption of key enablers. This measure can be integrated into the UCCs dashboard.

Five out of seven cities mentioned the WCAG-criteria for designing non-discriminatory services that use plain language. This does not necessarily indicate the need for the development of a new indicator for UCCs' dashboard. The inhomogeneity of measuring this specific need among partner cities simply requires an adjustment of existing inputs.

Finally, there was no mention of any existing measures on the availability of assistance for citizens to use digital public services. This might be due to the fact that this topic was not directly addressed in the baseline survey. Therefore, this topic shall be discussed with partner cities during the development of the dashboard indicators in form of a webinar and if necessary, a new measure for available assistance in using digital public services shall be developed.

There was no mention of any existing measures on the availability of assistance for citizens to use digital public services.

Table 3: Gap analysis - accessibility, security, availability, and usability

D1.2		D1.1			D1.3	
Principle Tallinn +	**Specific need**	**Possible indicators**	**Existing indicators (general)**	**Existing measurement in partner cities**	**Gap**	**Solution**
Accessibility, security, availability and usability	Availability and accessibility	• Yes/No • Number of public services[16] digitally available	Yes	(7/7)	Small	Integrate existing measures into the dashboard

[13] *Tallinn Declaration on eGovernment*, 2017.
[14] UserCentriCities, "Adapted user-centricity principles," 2021.
[15] For enterprises, organizations, and other entities that want to make their digital material accessible to everyone, the Web Content Accessibility Guidelines (WCAG) are a valuable resource. It is a set of technical guidelines that explains how to make your website, app, or other digital resources accessible to persons with various types of disabilities.
[16] Services that can be digitalised.

		vs. the total number of public services • WCAG-criteria				
	Secure authentication	• Yes/No • Adoption of key enablers (eID)	Yes	(6/7)	Small	Integrate existing measures into the dashboard
	No discrimination and usage of plain language	• Compliance with WCAG-criteria	Yes	(5/7)	Small, inhomogeneous	Adjust existing inputs into harmonized measure
	Assistance available upon request	N/A	No	N/A	Not explicitly assessed through baseline survey	Discuss with cities; if necessary, develop new measure according to Tallinn principle

REDUCTION OF ADMINISTRATIVE BURDEN

The Tallinn Declaration's principle *reduction of administrative burden* calls for public administrations to make efforts to reduce the administrative burden on citizens and businesses, namely by optimizing and/or crating digital processes and services. Where relevant and possible, personalised and pro-active services should be offered. Additionally, it highlights the importance of the once-only-principle by mentioning that citizens should not be asked to provide the same information to public services more than once.[17] For UCCs partner cities it is also important to reduce the entry points to local digital services for the users through e.g., a single point of access.[18]

Four out of seven cities state that they measure the optimization of their digital processes. Possible indicators are the number of digital services that are rebuilt under the once-only-principle[19] and the number of prefilled forms. On national level, the implementation of the once-only-principle is measured by the number of pre-filled forms (eGovernment Benchmark, Digital Economy and Society Index (DESI)). This measure could be integrated into the user-centricity dashboard.

Currently none of the cities participating is offering pro-active or personalised services. For this reason, there are also no existing indicators related to measuring the pro-activity or personalisation of services. Based on the baseline survey results there is the need to develop a new indicator related to the pro-activity of public services.

[17] *Tallinn Declaration on eGovernment*, 2017.
[18] UserCentriCities, "Adapted user-centricity principles," 2021.
[19] The once-only principle is an e-government concept that aims to ensure that citizens, institutions, and companies only have to provide certain standard information to the authorities and administrations once.

In addition to the previously mentioned WCAG-criteria, a possible indicator here could be the number of websites leading to digital services.

The reduction of administrative burden is also achieved by reducing the entry points to local digital services for the users. While this topic was not directly addressed through the baseline survey, four cities indicated that they are working on the implementation of a single-point of access. In addition to the previously mentioned WCAG-criteria, a possible indicator here could be the number of websites leading to digital services.

Table 4: Gap analysis – reduction of administrative burden

D1.2		**D1.1**			**D1.3**	
Principle Tallinn +	**Specific need**	**Possible indicators**	**Existing indicators (general)**	**Existing measurement in partner cities**	**Gap**	**Solution**
Reduction of administrative burden	Optimise and create digital processes	• Yes/No • Number of digital services that are rebuilt under the once-only-principle • Number of prefilled forms	Yes	(4/7)	Medium, inhomogeneous	Discuss with cities; integrate existing measure into dashboard
	Pro-active services	• N/A	No	(0/7)	Non-existing	Need to develop a new indicator
Reduction of administrative burden/ Accessibility, security, availability and usability	Single-point of access	• Number of websites leading to digital services[20] • WCAG-criteria	No	(4/7)	Medium, inhomogeneous	Discuss with cities; integrate existing measure into dashboard

DIGITAL DELIVERY OF PUBLIC SERVICES

According to the Tallinn Declaration, public services should as much as possible and appropriate, especially upon request of the user, be fully online, including the provision of any evidence required to obtain a right or fulfil obligations.[21] Additionally, it should be possible to check the status of service delivery online.[22]

The baseline survey assessed whether cities measure the percentage and number of services that are available online and offline versus online service usage. Five out of seven cities indicated that they have existing measures to monitor the digital delivery of public services. The existing indicators, i.e., the number of digitally available public services versus the total number of public services, and offline

[20] Cities pointed out the need to discuss whether a low value is a sign for a high-level of user-centricity because a single-point of access is easy to use or whether a high value is desirable as there are several touch-points available for citizens.
[21] *Tallinn Declaration on eGovernment*, 2017.
[22] UserCentriCities, "Adapted user-centricity principles," 2021.

versus online use, will have to be adjusted into a harmonised measure that can be adopted into the dashboard.

Whether it is possible for citizens to check the status of service delivery online was not assessed through the baseline survey. No general existing indicator could be identified. Therefore, the measurement of this specific need should be discussed with cities to develop a new measure.

Table 5: Gap analysis - delivery of public services

D1.2		D1.1			D1.3	
Principle Tallinn +	**Specific need**	**Possible indicators**	**Existing indicators (general)**	**Existing measurement in partner cities**	**Gap**	**Solution**
Digital delivery of public services	Handle services fully online	• Number of digitally available public services vs total number of public services[23] • Offline versus online service use	Yes	(5/7)	Small, inhomogeneous	Adjust existing inputs into harmonized measure
	Possibility to check status of service delivery	N/A	No	N/A	Not captured by survey	Discuss with cities; if necessary, develop new measure according to Tallinn principle

CITIZEN ENGAGEMENT

The Tallinn Declaration's principle *citizen engagement* states that digital means should be used to empower 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. The specific needs that need to be measured according to this principle are the availability of digital participation channels and the level of co-creation of public services.[24] Cities stressed the importance of translating their ambitions and goals to the users and vice-versa to better understand what the users desire.

In UCCs baseline and survey, five out of seven cities state that they measure citizen engagement through the number of different users of their participation channels, the time users spend using the tools, and the number of interactions per user. As the existing measurements in partner cities are inhomogeneous and no general existing indicator could be identified, the existing inputs have to be adjusted into a harmonized indicator that can be fed into the dashboard.

The baseline survey assessed the use of co-creation methods in the development of digital public services through a yes/no indicator. As all participating cities indicated that they co-create services with

[23] Services that can be digitalised.
[24] *Tallinn Declaration on eGovernment*, 2017.

their citizens and delivered detailed explanations of their co-creation processes, the yes/no indicator from the baseline survey could added into the dashboard as a new indicator.

Table 6: Gap analysis - citizen engagement

D1.2		D1.1			D1.3	
Principle Tallinn +	**Specific need**	**Possible indicators**	**Existing indicators (general)**	**Existing measurement in partner cities**	**Gap**	**Solution**
Citizen engagement	Digital participation channels	• Number of different users • Time spent using digital participation channels • Number of interactions per user	No	(5/7)	Small, inhomogeneous	Adjust existing inputs into harmonized measure
	Co-creation of digital public services	• Yes/No + description	No	(7/7)	Small	Adopt yes/no indicator from baseline survey as new indicator

INCENTIVES FOR DIGITAL SERVICE USE

According to the Tallinn Declaration, 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.[25] In the localised version of the Tallinn principles, cities added that investments should be made in the onboarding of citizens.[26]

In addition to a yes/no indicator that was used in the baseline survey, another possible indicator that was identified in relation to promoting the benefits of digital public service use is the effectiveness of the incentives. As the yes/no indicator was answered positively by six out of seven cities, it should be included to the dashboard as a new indicator.

Whether cities invest into the onboarding of citizens was not directly covered through the baseline survey. However, some cities mentioned some investments: providing equipment for citizens to use digital services and courses on digital tools and programs, among others. This gap shows the need for the development of a new indicator for the dashboard.

Table 7: Gap analysis - incentives for digital service use

D1.2		D1.1			D1.3	
Principle Tallinn +	**Specific need**	**Possible indicators**	**Existing indicators (general)**	**Existing measurement in partner cities**	**Gap**	**Solution**
Incentives for digital service use	Promoting benefits of digital public service use	• Yes/No + description • Effectiveness of incentives	No	(6/7)	small	Adopt yes/no indicator from baseline survey as new indicator

[25] *Tallinn Declaration on eGovernment*, 2017.
[26] UserCentriCities, "Adapted user-centricity principles," 2021.

	Investments in onboarding of citizens	N/A	No	N/A	Not captured by survey	Discuss with cities, need to develop new indicator for dashboard

PROTECTION OF PERSONAL DATA AND PRIVACY

A public service that protects the personal data and privacy of its user should respect the general data protection regulation and privacy requirements at the EU and national levels, when applicable inform citizens about the use and storage of their personal data, and allow citizens to access and ask for the correction and deletion of personal data, where appropriate.[27]

GDPR compliance and transparency about the use and storage of personal data is assessed through the eGovernment benchmark. The baseline survey used a yes/no indicator to gather information about the protection of personal data and privacy. After a discussion with participating cities, the yes/no indicator used in the baseline survey and the existing indicators from the eGovernment benchmark could be adjusted and harmonized to fit the dashboard.

A yes/no indicator was also used to explore whether it is possible for citizens to correct and delete their personal data, where appropriate. For this specific need, no existing indicator could be identified. Therefore, the yes/no indicator from the baseline survey could be adopted as a new indicator.

Table 8: Gap analysis - protection of personal data and privacy

D1.2		**D1.1**			**D1.3**	
Principle Tallinn +	**Specific need**	**Possible indicators**	**Existing indicators (general)**	**Existing measurement in partner cities**	**Gap**	**Solution**
Protection of personal data and privacy	GDPR compliance	• Yes/No	Yes	(7/7)	Small	Discuss with cities, adjust and harmonize yes/no indicator and existing indicators
	Transparency about use and data storage	• Yes/No	Yes	(7/7)	Small	Discuss with cities, adjust and harmonize yes/no indicator and existing indicators
	Possibility to correct and delete personal data, where appropriate	• Yes/No	No	(7/7)	Small	Adopt yes/no indicator from baseline survey as new indicator

REDRESS AND COMPLAINT MECHANISMS

The last of the eight user-centricity principles states that redress mechanisms should be available online and that citizens and businesses should have access to complaint procedures online, while also in other available channel(s) of their choice.

[27] *Tallinn Declaration on eGovernment*, 2017.

While the baseline survey addressed this specific need with a yes/no question, one city mentioned that they also measure the number of claims made through their redress and complaint mechanisms. Additionally, the availability of online redress and complaint mechanisms is also captured by the eGovernment benchmark report. Therefore, a discussion about the measurement of this specific need could result in an adjustment and harmonisation of the yes/no indicator and the existing indicators from the eGovernment benchmark.

Table 9: Gap analysis - redress and complaint mechanisms

D1.2		**D1.1**			**D1.3**	
Principle Tallinn +	**Specific need**	**Possible indicators**	**Existing indicators (general)**	**Existing measurement in partner cities**	**Gap**	**Solution**
Redress and complaint mechanisms	Availability of online and offline redress mechanisms	• Yes/No • Number of claims	Yes	(7/7)	Small	Discuss with cities, adjust and harmonize yes/no indicator and existing indicators

SUMMARY OF THE CROSS-ANALYSIS

The above-performed gap analysis shows that all participating cities measure the performance of their digital services. Such measures seem to also capture angels of user-centricity, as defined in the Tallinn declaration's user-centricity principles.

The following table summarises the identified gaps and areas for adjusting and developing new measurements for a dashboard aiming to measure user-centricity.

The above-performed gap analysis shows that all participating cities measure the performance of their digital services. Such measures seem to also capture angels of user-centricity, as defined in the Tallinn declaration's user-centricity principles.

Table 10: Identified gaps and areas for adjusting and developing new measurements

Tallinn Principle	Specific need	Need for developing new measures according to (sets of) Tallinn Declaration's principles	Needs for adjusting/harmonizing existing inputs into measures of user-centricity	Needs for integrating existing measured into the dashboard
Digital interaction	Option to digitally interact with local administrations		x	
Accessibility, security, availability and usability	Availability and accessibility			x
	Secure authentication			x
	No discrimination and usage of plain language		x	
	Assistance available upon request	x		
Reduction of administrative burden Reduction of administrative burden	Optimise and create digital processes			x
	Pro-active services	x		
Reduction of administrative burden/ Accessibility, security, availability and usability	Single-point of access			x
Digital delivery of public services	Handle services fully online		x	
	Possibility to check status of service delivery	x		
Citizen engagement	Digital participation channels	x		
	Co-creation of digital public services	x		
Incentives for digital service use	Promoting benefits of digital public service use	x		
	Investments in onboarding of citizens	x		
	GDPR compliance		x	

Protection of personal data and privacy	Transparency about use and data storage		x	
	Possibility to correct and delete personal data, where appropriate	x		
Redress and complaint mechanisms	Availability of online redress mechanisms		x	

INTERVENTION LOCIG APPROACH

The cross-analysis of previous reports [28] of the UCCs project identified a clear set of gaps. Such gaps are now mapped against the intervention logic structure to identify enablers, user-centricity performance and outcomes, as summarised in the figure below.

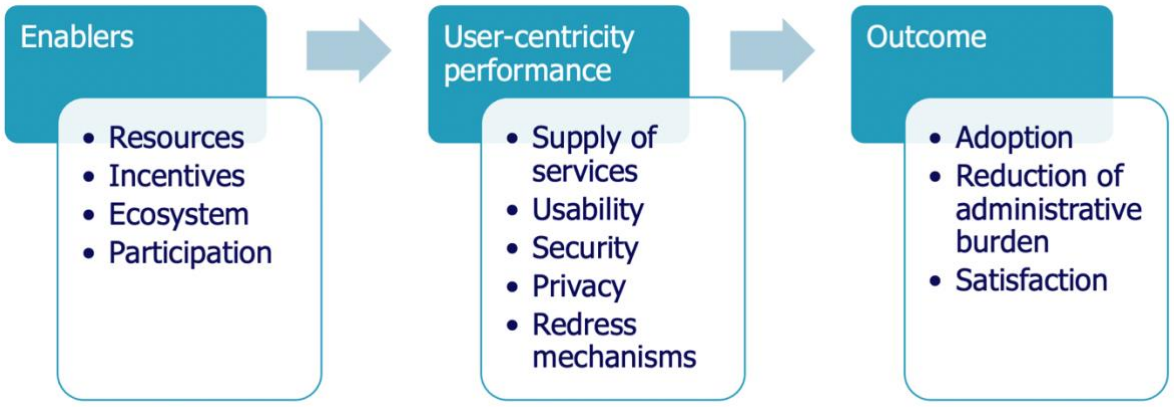

Figure 4: Overview of the measurement gaps identified in the report

The full list of measurement gaps is described below. Most probably, it will not be possible to identify suitable indicators and data sources for all gaps. Even when not measurable, the gaps will be used for other project activities such as peer-to-peer workshops.

ENABLERS

A number of factors are relevant to make user-centric services a reality. These factors are referred to as enablers. The measurable enablers that were identified through the cross-analysis are the following: Resources, incentives, ecosystem support and participation.

RESOURCES

In order to create user-centric digital public services cities need specific resources. Based on the specific needs extracted from the localised Tallinn principles, these resources needed to create user-centric digital public services are qualified internal teams consisting of professionals with user experience skills. No specific indicator measuring the existence of such teams was identified through UCCs baseline survey. Cities added, that also the skills of users should be considered as an important resource. Cities

[28] UserCentriCities, "Adapted user-centricity principles," 2021; UserCentriCities, "Baseline survey report," 2021.

have the need to understand their citizens' degree of digital literacy to provide the right incentives in onboarding.

INCENTIVES

With regards to incentives that motivate citizens to use digital public services two possible indicators were identified through the cross-analysis:

1. existence of incentives for citizens to use digital services,
2. investments in onboarding of citizens in digital services.

ECOSYSTEM SUPPORT

In order for cities to offer user-centric services, they need a functioning ecosystem. The level of ecosystem support could be measured through:

1. availability of Application Programming Interfaces (API) for private sector,
2. adoption levels of such API,
3. adoption of national infrastructural services such as identification and payment services.

PARTICIPATION

Finally, an important enabler for user-centricity is citizen participation. Based on the results of the above performed cross-analysis this can be measured through:

1. adoption of service co-design practices,
2. adoption of policy co-creation, eParticipation and citizens' engagement.

PERFORMANCE

A number of different factors play a role in measuring a cities' actual performance with regards to user-centricity: Supply of services, usability, security, privacy and redress mechanisms. The possible indicators to measure these factors are introduced in the following five sub-chapters.

SUPPLY OF SERVICES

The supply of digital public services be assessed through the following indicators:

1. possibility to interact digitally and availability of online services (similar to DESI),
2. alignment with requirements of Single Digital Gateway,
3. possibility to check the status of the service online.

USABILITY

Usability can potentially be measured through:

1. standard usability of services or alignment with User Experience guidelines,
2. usability for specific target groups,
3. adoption of plain language in service description,
4. accessibility based on web accessibility standards.

SECURITY

The following two indicators have been identified as important in order to evaluate the security of digital public services:

1. possibility for users to authenticate through eID recognized under eIDAS directive,
2. availability of "digital wallet" solutions.

PRIVACY

With regards to privacy, an indicator assessing the possibility for citizens to have control over own data, how it is used, and by whom should be available.

REDRESS MECHANISMS

Finally, the Tallinn declaration calls for redress mechanisms. An indicator could measure their availability. As explained above, redress mechanisms exist in most participating cities.

OUTCOME

The following factors are crucial in the evaluation of cities' efforts towards user-centricity: Adoption, reduction of administrative burden and citizen satisfaction.

ADOPTION

Adoption refers to the uptake of digital public services by citizens. This can be measured through:

1. share of transactions executed online,
2. share of population using online services,
3. share of population by specific segment.

REDUCTION OF ADMINISTRATIVE BURDEN

Another outcome of a high level of user-centricity should be reduced administrative burden for citizens. This can be assessed through:

1. availability of pre-filled forms,
2. availability of pro-active services,
3. reduction of administrative burden such as time saved,
4. monetary savings for public administration.

SATISFACTION

Finally, cities' efforts towards user-centricity should result in an increased level of satisfaction when using public services. This can be assessed though:

1. Satisfaction levels of citizens,
2. Share of online transactions that are completed over total attempts (completion rate).

SUMMARY AND CONCLUSION

The above performed gap analysis identified a total of eighteen specific needs that should be considered in the development of indicators measuring user-centricity of digital public services.

For eight of these needs there is the need for developing new measures according to the (localized) Tallinn declaration's principles. These are: assistance available upon request, pro-active services, possibility to check status of service delivery, digital participation channels, co-creation of digital public services, promoting benefits of digital public service use, investments of onboarding of citizens and the possibility to correct and delete personal data, where appropriate.

For a total of six needs identified through the gap analysis, there is the need for adjusting or harmonizing existing inputs into measures of user-centricity. This is the case for the following needs: digital interaction, no discrimination and usage of plain language, handle services fully online, GDPR compliance, transparency about use and data storage and availability of online redress mechanisms.

Finally, there is a number of needs that are already measured by cities. In these four cases, existing measures can be integrated into UCCs dashboard: availability and accessibility, secure authentication, optimise and create digital processes and single-point of access.

These specific needs were categorized, using an intervention logic approach. This categorisation resulted in the definition of four measurable enablers for user-centricity (resources, incentives, ecosystem and participation), five factors that define user-centricity performance (supply of services, usability, security, privacy and redress mechanisms) and three measurable outcomes (adoption, reduction of administrative burden and satisfaction).

In the next phase of the UCCs project this list of gaps will be validated with partners and then operationalised in indicators. Such indicators will be further reviewed by partners to deliver the first version of the online dashboard by the end of 2021.

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APPENDIX

USER-CENTRICITY PRINCIPLES FOR DESIGN AND DELIVERY OF DIGITAL PUBLIC SERVICES

This annex presents the eight user-centricity principles that are defined in the Tallinn declaration:

"We, the ministers in charge of policy and coordination of digital public services in the countries of the European Union (EU) and the European Free Trade Area (EFTA), recognise the needs and expectations of our citizens and businesses as they interact with public administrations. We commit that the design and delivery of our services will be guided by the following principles of user-centricity.

When interacting with public administrations and using digital public services, citizens and businesses should expect:

Digital Interaction

- To have the option to digitally interact with their administrations

Accessibility, security, availability and usability

- 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 and 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

- 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

- 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

- 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

- 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

- 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

- 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"[29]

[29] *Tallinn Declaration on eGovernment*, 2017.