



Data-driven and Dynamic Space and Assets for Physical Internet-led Urban Logistics and Planning



Funded by
the European Union

Rg s gx c ettlc kffle sg Cttf xk Sk k! k Cttf x g xkc kk xs k fflx
ttlc fflxks xffk ks xkc k k c x g sg esg xttfg - k xkc
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ER	S R	R	c kxs		R	ER
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x	R					C
RC	R	R	x C C			C
EJ	R	C				C
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E	C R R S R	S R	x R C		R	R
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Version	Date	Organisation	Main area of changes	Comments
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		S	J ttf	c c xes
		C R ER	J ttf	! e c x
		S C R ER	E kx g	E kx k cttf c



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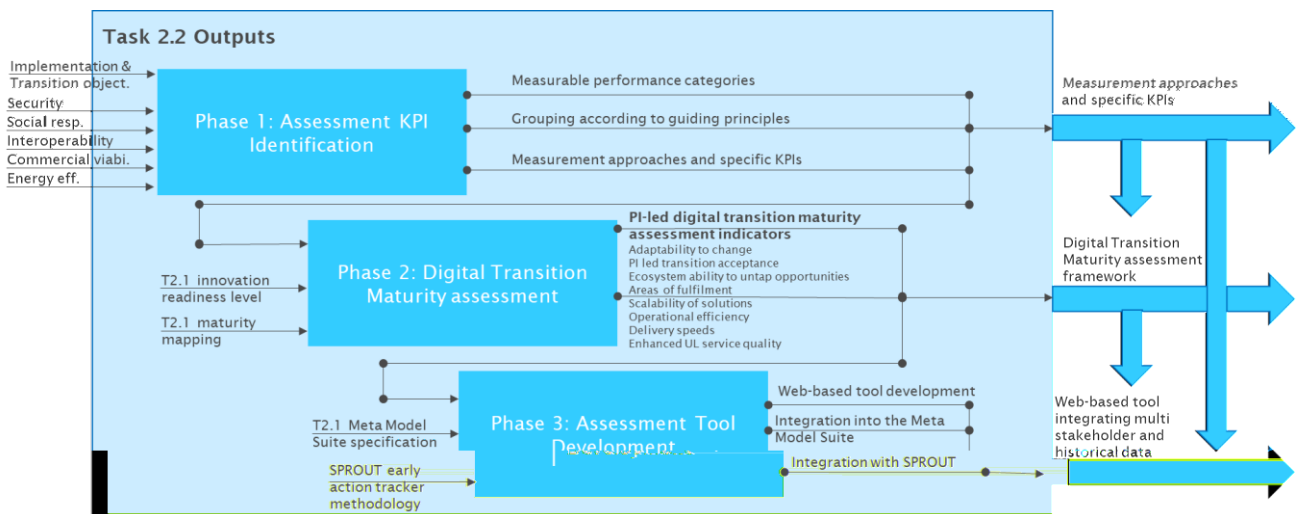
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Loading/Unloading parking spaces	What is the percentage of business establishments that have access to a loading/unloading parking zone within a distance of 10-15m.	%		0-25%	26-50%	51-75%	76-100%
Parking violations	How much money, do the city collects for double parking violations? Or How many incidents of parking violations are reported per day?	-					
Digitalization of parking	To what extent are the parking services digitalized?	Likert	Can not be answered	None of the required services for parking management are digitalized; there is no digital interface or platform in place.	Specifications for a digitalized user interface for booking/interaction have been outlined, but they are not currently operational.	Initial interactions with the services are digitalized, but there is no overarching platform; functionalities may be fragmented.	Monitoring, booking, and other interactions can be seamlessly conducted on an interactive overarching platform with an easily accessible user interface, providing comprehensive digital integration.
Loading/Unloading Operations	How does the current loading/unloading operations take place in the city?	Likert	Can not be answered	There is dedicated loading/unloading space. The parking spaces are limited and multiple violations (parking not for L/U) are observed.	There is dedicated loading/unloading space with very limited regulations to support them. There is no smart booking system for reservation.	There are multiple loading/unloading parking spaces. City supports them with regulations (zones, bays, restrictions). There is smart booking system or other smart ways.	The city is managing dynamically and effectively the loading and unloading (sufficient for all operations), either with a Smart Curbside Management System or other smart ways of managing these parking zones for logistics operations.
Available curbside infrastructure	Which of the following digital and physical infrastructure assets are installed in your city?	Select					
	Curbside signs informing drivers about the characteristics of each zone, parking spot, bay etc.	<input type="checkbox"/>	if no, vote if you are planning to install it in a scale from 1 to 5.				
	Dynamic (and fair) pricing system for the movement of vehicles through the city center	<input type="checkbox"/>	if no, vote if you are planning to install it in a scale from 1 to 5.				
	Security systems (e.g. cameras) to monitor the curb side	<input type="checkbox"/>	if no, vote if you are planning to install it in a scale from 1 to 5.				
	Sensor-based curbside infrastructure	<input type="checkbox"/>	if no, vote if you are planning to install it in a scale from 1 to 5.				
	Charging stations for electric vehicles	<input type="checkbox"/>	if no, vote if you are planning to install it in a scale from 1 to 5.				

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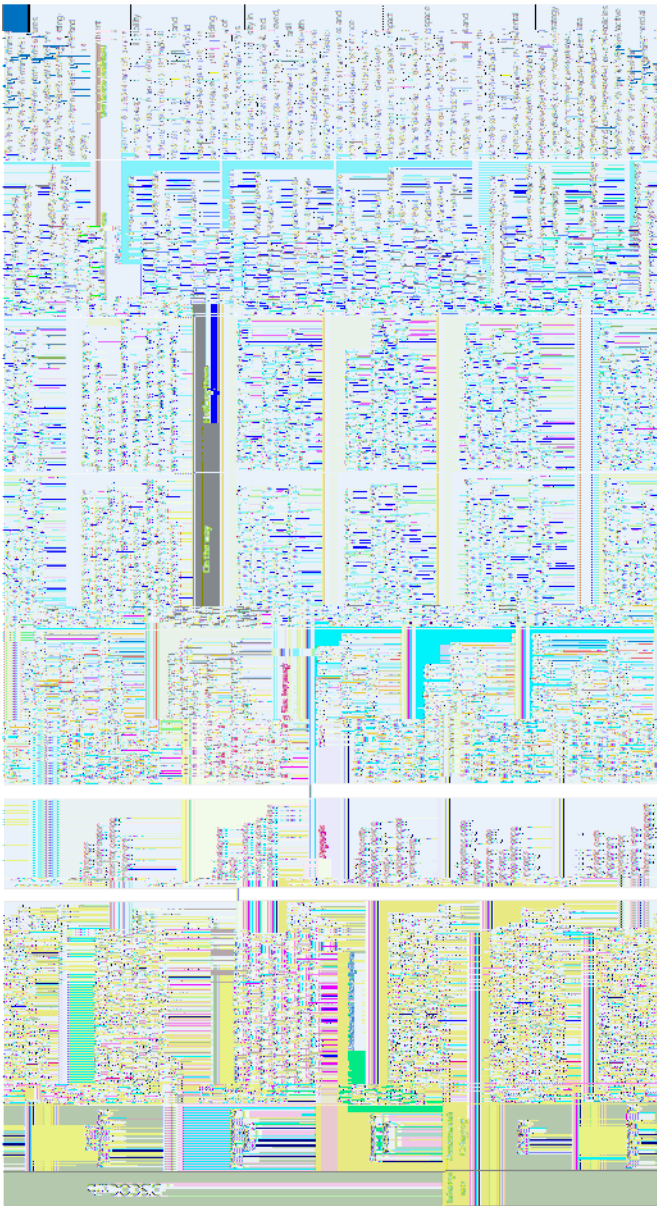
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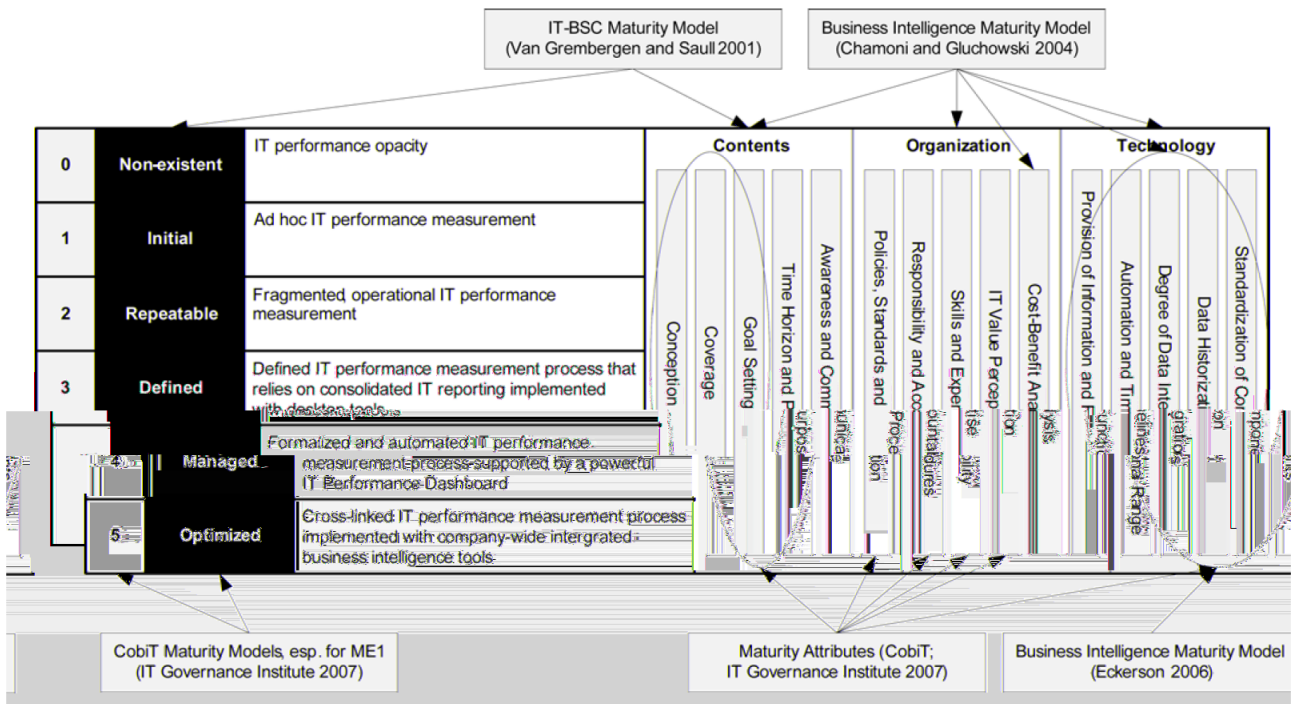
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sgxs sg x x x ec ffs xsttfs k sg s xs xs sg ss ttf xk
ffks xs k Rg ttf g c kc xs sgxs sg s x ks s c k kk xs
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xc k s kk xs g c k s xk sgxs x s c fflsx xsttf ks sttf
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 ttf ks e x g sg ex s k s c s xcc c k sg * SR s s c
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 J c ttf es k s sek g c k sg x gs sttf xkc ttf ks ex x x
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tfs ?

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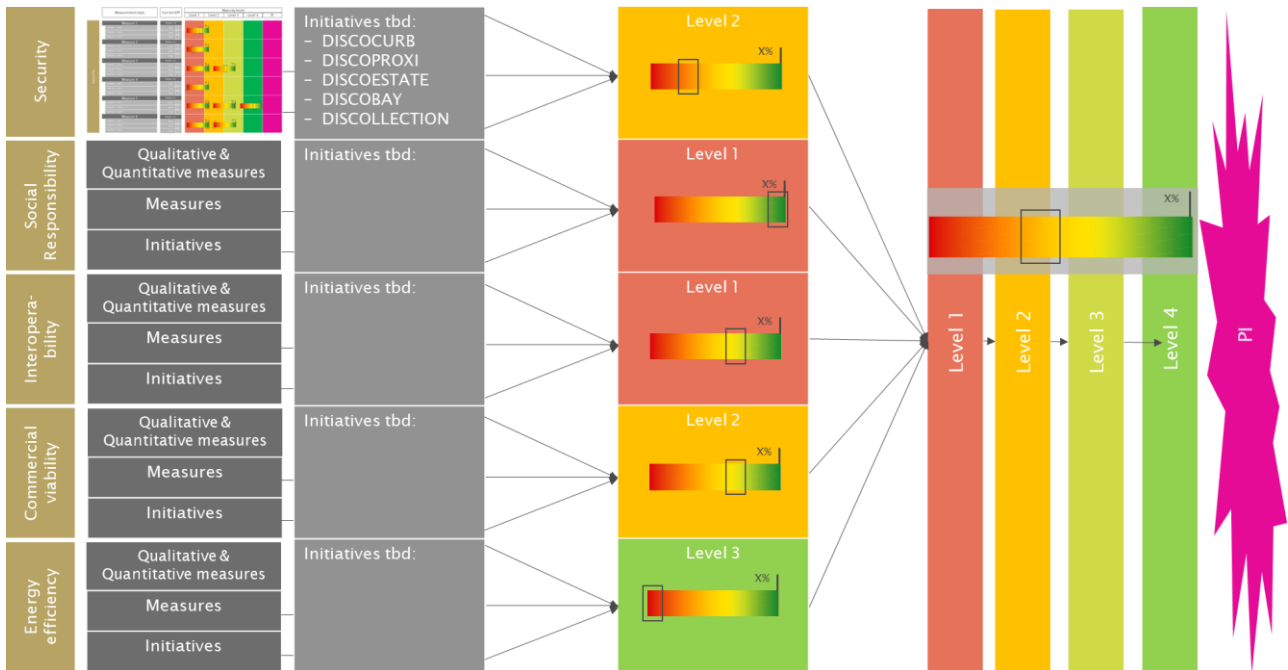
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$$\sum_{i,j=1}^{n,m} \alpha_i(\text{SPROUT Factors}) + \beta_j(\text{Digital maturity factors}) + (\text{DISCO} - X \text{ dummies}) = P$$

Rg ttfk k kc xs sg ffxk x e esg ffxk x c sgxs ttf c s kc s
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g sg k k s gx ss ettf c c c fflk gx kc cx s g sg ttf
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	Measurement topic	Current KPI	Maturity levels					
			Level 1	Level 2	Level 3	Level 4	PI	
Security	Measure 1	Measure: xxx						
	Initiative 1 - Level 1	Done: <input checked="" type="checkbox"/>						
	Initiative 2 - Level 1	Done: <input checked="" type="checkbox"/>						
	Measure 2	Measure: xxx						
	Initiative 3 - Level 1	Done: <input type="checkbox"/>						
	Measure 3	Measure: xxx						
	Initiative 2 - Level 2	Done: <input checked="" type="checkbox"/>						
	Measure 4	Measure: xxx						
	Initiative 3 - Level 1	Done: <input type="checkbox"/>						
	Measure 5	Measure: xxx						
	Initiative 2 - Level 3	Done: <input checked="" type="checkbox"/>						
	Measure 6	Measure: xxx						
	Initiative 3 - Level 2	Done: <input checked="" type="checkbox"/>						

fflk esg k ttf k e sg cxsx sgxs x sttf c s cx k sg k k e e sg
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 J c e xsx ks x s k x? ks kxs kx fflk xs ke sxkcxc xs k

xkffk kffk S xkc gttk S xk xkc s sxke ffls xk sxs k?x ttf e skffk
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kcg J xkc g kc gx kffk k ttf xk e ffs xk s xkk kffk k sg xs x ffk k
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J ks ttf R x c x *g x ks k s? s kffk g ffk x ffs ttf s x k x s ffk k c g x kffk ffs
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 xkc ttf k J xk x ffk ks -

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DISCO PI-led Digital Transition and Maturity Questionnaire

This form is part of the DISCO project WP2 Meta Model Suite. Its purpose is to collect data on your organization's current level of digital maturity. It can be used to track how your organization is progressing along a pathway to building a trustworthy and collaborative environment for all community stakeholders. It can also be used, as it is filled in by other organizations, as a tool to compare your organization's level maturity to other communities. The questionnaire is broken down into six sections. The first section collects general data on you and your organization. This information allows the maturity assessment to position your organization with peer organizations for comparison purposes. The next five sections focus on digital maturity in the areas of security, interoperability, energy efficiency (environmental impacts), social responsibility, and commercial viability. Questions for each section have been limited to no more than 20 questions. Once you have completed the questionnaire you should be able to obtain a graphical overview of your answers and a score for each of the five categories covered in the questionnaire. Depending on how many other organizations have completed the questionnaire, you will also be able to see how your scores compare against these peer organizations. Thank you for taking the time to fill out this questionnaire.

* Required

Organization Questions

This section of the questionnaire focuses on general questions concerning you and your organization.

1. For which city are you filling out this questionnaire? *

2. What is your role in your organization? *

3. How long have you been in your role with this organization? *

- 0 - 1 year
- 1 - 5 years
- 5 - 10 years
- Over 10 years



4. How large a population does your city have? *

- 0 - 25,000 people
- 25,000 - 100,000 people
- 100,000 - 500,000 people
- 500,000 - 1,000,000 people
- 1,000,000 - 5,000,000 people
- Over 5,000,000 people

5. How large is your city's information technology budget? Please include budget figures for control systems, network and communication infrastructure, infrastructure (traffic cameras, IoT devices, etc.) if possible. Note that this is not a required question to answer, but it provides guidance for positioning your responses with respect to other city responses.

- €0 - €1,000,000
- €1,000,000 - €10,000,000
- €10,000,000 - €25,000,000
- €25,000,000 - €50,000,000
- Over €50,000,000



Security

This section of the questionnaire addresses the maturity of your city's security approach to its digital systems, data, and infrastructure. Questions ask you to score the maturity of your city according to a 5 level scale ranging from least mature (beginning or starting or not at all started) to very mature (have been doing this a long time, a key strength, etc.).

6. Data Security *

	Not Available	Have just implemented this	Have implemented and continue to refine	Have had for some time	Have had for some time and is fully implemented in all functions
Does your city have a formal data security plan?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city have access controls for accessing data?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city have a formal data backup and recovery plan for all community data?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city manage data access on a "zero trust" basis?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city's formal plans for data security cover all IoT devices, infrastructure control systems, and other systems where data is generated and stored?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



7. Network Security *

	Not Available	Have just implemented this	Have implemented and continue to refine	Have had for some time	Have had for some time and is fully implemented
Does your city have a formal network security plan?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city have network access controls?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city have redundant network services in case of failures?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city utilize cloud based access services?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city implement security controls on all devices access its networks directly or via the cloud?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



8. Systems Security *

	Not Available	Have just implemented this	Have implemented and continue to refine	Have had for some time	Have had for some time and is fully implemented in all functions
Does your city have a formal information systems and software security policy?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city have formal software access controls and policies?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city perform regular software supply chain analyses to ensure internal and external code is secure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city have internal standards for software development, testing, and security control?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city monitor ongoing software instances to ensure that anomalies are isolated and addressed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



9. Infrastructure Security (Infrastructure systems are the control and data collection systems used by the city for operating water systems, sewer systems, traffic management systems, etc.) *

	Not Available	Have just implemented this	Have implemented and continue to refine	Have had for some time	Have had for some time and is fully implemented in all functions	
Does your city have a formal security policy for all infrastructure systems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Does your city centrally monitor its infrastructure systems or are they monitored locally?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Does your city select infrastructure systems using a security evaluation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Does your city have access control policies for all infrastructure systems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Does your city have formal disaster recovery programs for all infrastructure systems?		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



10. Security Organization *

	Not Available	Have just implemented this	Have implemented and continue to refine	Have had for some time	Have had for some time and is fully implemented in all functions
Does your city have a separate digital security office responsible for digital security?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you regularly conduct digital security audits of your network, systems, data, and infrastructure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city have a threat response plan for its digital environment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city enforce security updates for all internal systems, network attached systems, and any entity that attaches to your network?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city have a formal digital security plan based on "zero trust" principles?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Interoperability

This section of the questionnaire addresses whether digital systems and assets are purchased, implemented, and managed through a formal architecture that encourages interoperability, data exchange, and controlled access. Questions ask you to score the maturity of your city according to a 5 level scale ranging from least mature (beginning or starting or not at all started) to very mature (have been doing this a long time, a key strength, etc.).

11. Standards and Interoperability *

1	2	3	4	5	
Not started or barely started or functions	Have started	Have implemented	Have implemented and continue to refine	Have had for a long time	
<input type="radio"/>	Does your city have a formal systems architecture for all city managed systems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	Does your city require that all systems conform to international or industry standards for data and communications?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	For infrastructure control systems and data collection tools (IoT devices, sensors, etc.) does the city require adherence to industry standards and its architecture?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	Does the city employ a "data pool" or "data lake" or "data swamp" approach to collecting key data for decision making?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	Does the city have the ability to integrate systems using internal resources?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Energy Efficiency and Environmental Impact

This section of the questionnaire addresses the maturity of the city's approach to controlling the energy usage of its digital assets and their impact on the environment. Issues associated with using the systems to lower environmental impacts of external factors such as traffic are included in the next Section on Social Responsibility. Questions ask you to score the maturity of your city according to a 5 level scale ranging from least mature (beginning or starting or not at all started) to very mature (have been doing this a long time, a key strength, etc.).

12. Energy Use and Environmental Impacts *

	Not Available	Have just implemented this	Have implemented and continue to refine	Have had for a long time	Have had for a long time and is fully implemented in all functions
Does your city use energy efficiency as a factor in selecting digital hardware and/or software?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city regularly report on the use of energy in its systems and data centers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city use its systems to control the use of energy in its facilities and operational networks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city use "green" energy to power its operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city employ "green" backup power systems to address energy outages?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Social Responsibility

This section of the questionnaire addresses the maturity of your city's approach to using its digital tools to improve the lives of its citizens. Questions ask you to score the maturity of your city according to a 5 level scale ranging from least mature (beginning or starting or not at all started) to very mature (have been doing this a long time, a key strength, etc.).

13. Digital Services *

	Not Available	Have just implemented this	Have implemented and continue to refine	Have had for a long time	Have had for a long time and is fully implemented in all functions
How accessible to community members are your city's services through online digital tools?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city employ digital surveys, complaint registers, etc. to understand community sentiments and improve services?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city provide online forums for different citizen and business groups to discuss issues with one another and the city?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city's online services integrate key city functions to streamline access and improve customer journeys?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city use its online presence to proactively engage with its citizens and businesses providing timely and relevant information?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



14. Infrastructure Services *

	Not Available	Have just implemented this	Have implemented and continue to refine	Have had for a long time	Have had for long time and is fully implemented in all functions
Does your city provide citizens and businesses with online access to usage data, payment services, etc. for infrastructure services?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city provide citizens and businesses with real-time information on activities related to the city infrastructure (outages, traffic, schedules, etc.)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city have online reservation services for parking, facility use, etc.?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city provider infrastructure users with intelligence driven suggestions as to how they might lower their costs, improve their service, etc.?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city use its online services to improve the security of its citizens and businesses?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



15. Environmental Impacts *

	Not Available	Have just implemented this	Have implemented and continue to refine	Have had for a long time	Have had for a long time and is fully implemented in all functions
Does your city regularly collect and report on the environmental impact of the various activities conducted within the city (e.g., personal travel, logistics, waste, home energy use, industrial energy use, etc.)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city promote processes through its digital tools that allow its citizens and businesses to reduce their environmental footprint?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city use data to target high impact areas and codevelop with citizens and businesses in these areas improvements?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city use traffic management systems to smooth traffic flows during high use periods to lower emissions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city employ asset management systems to optimize use by citizens and businesses while lower overall emissions (e.g., parking management, city center access, energy use, etc.)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Commercial Viability

This section of the questionnaire addresses the approach your city takes to using its digital infrastructure to support the economic and commercial viability of the city. Questions ask you to score the maturity of your city according to a 5 level scale ranging from least mature (beginning or starting or not at all started) to very mature (have been doing this a long time, a key strength, etc.).



16. Commercial Viability *

	Not Available	Have just implemented this	Have implemented and continue to refine	Have had for a long time	Have had for long time and is fully implemented in all functions
Does your city provide tools for setting up collaborative marketplaces, tracking service levels, and making real-time decisions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city proactively work with businesses and citizens to improve commercial services in communities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city provide businesses with access to data to help in improving their business operations (e.g., visitor volumes, traffic data, etc.)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city encourage innovation and entrepreneurship by providing transparent and easy to use services to establish and operate a business within the city?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city provide access to under utilized city assets that businesses might use to improve their operations and create revenue for the city?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Does your city encourage business collaboration through incentives, training, regulations, etc. to increase efficiency and scale?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>