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Cities Coalition for Digital Rights

MAINSTREAMING HUMAN RIGHTS IN THE DIGITAL TRANSFORMATION OF CITIES

A guide for local governments

Mainstreaming human rights in the digital transformation of cities -A guide for local governments

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Introduction:

Towards improved digital governance and human rights in the digital context of cities.

People living in cities around the world use a wide range of municipal services on a regular basis. Services provided to residents such as garbage collection, the provision of playgrounds, parking spaces, streetlights, affordable housing, social support and public transport all require a local government that is committed to facilitating good quality of life in the city. As city governments undergo digital transformation, the digital and physical aspects of the city become more closely connected with digital technologies being used to deliver services, manage urbanisation processes and communicate with residents. In some aspects it is becoming difficult to distinguish between offline and online services.

This online and offline connectedness is impacting public life in our cities and affects different groups across communities differently. The use of digital technologies, platforms and data by governments and the private sector affect urban residents, sometimes in unforeseen or unintended ways[i]. For example, young women may face cultural and gender-related barriers that prevent their access to the internet and technology[ii]. Ethnic minorities and people on low incomes have high demand for the internet, but often struggle with lack of affordability[iii]. Such groups lack not only access, they also experience lower quality of digital services. As groups do not equally access the digital services and systems that generate data, they do not produce the same kinds (or quantities) of data as the rest of the community[iv].

'Digital technologies have the potential to serve people, improve public services and working conditions. But persistent digital divides remain, and the digital revolution must be directed and governed in a democratic and inclusive way.' –Maimunah Mohd Sharif, UN Habitat Executive Director.

Robin Worral, Unsplash

As digital technologies become ubiquitous in our cities, access and use becomes increasingly important. What if you do not have the skills to access your banking services online, but it's the only way to manage financial services? What if you cannot access any information about the sensors in your streets and cannot know whether they monitor just air quality or collect more data about your community? What if your biking route is not represented in the datasets that predict travel patterns in the city, but decisions to expand traffic routes affect your neighbourhood directly? What if you need a digital identity to object to a planning decision that directly affects your neighbourhood? To find answers to these and more questions, we need new ways of governing digitalisation that empower residents in urban areas.

Digital governance is key if cities want to use digital technologies to empower residents, improve quality of life, deliver effective services and build people-centered smart cities. Deciding who collects, controls, accesses, and maintains data is fundamental and requires a strong commitment to human rights. In the New Urban Agenda, United Nations Member States commit to promoting citizen-centric digital governance in order to make digital technologies accessible to the public, including women and girls, children and youth, persons with disabilities, older persons and persons in vulnerable situations[v].

Various resolutions regarding human rights and digital technologies have been approved by the UN General Assembly and the Human Rights Council. The UN General Assembly resolution The Right to Privacy in the Digital Age draws attention to the risks of surveillance, interception and data collection by governments, companies and individuals, which can violate human rights and may affect all individuals, with particular effects on women, as well as children and those who are vulnerable and marginalised. In its 2021 report 'Possible impacts, opportunities and challenges of new and emerging digital technologies with regard to the promotion and protection of human rights', the Human Rights Council Advisory Committee recognizes the potential of technology to promote and protect human rights and fundamental freedoms, and to ensure no one is left behind in the achievement of the SDGs.

In response to Member States' commitments, UN-Habitat's People-Centered Smart Cities Flagship Programme supports national and local governments with their digital transition. It promotes a multi-level governance strategy to help build skills and capacity to develop, procure and effectively use digital technologies in an ethical, inclusive and sustainable way to make sure that no one is left behind[vi]. The Cities Coalition for Digital Rights, a network of cities, works to protect and uphold human rights on the internet at the local and global level.

This publication refers to human rights in the digital context as 'digital rights'. These are not new human rights. 'Digital' rights are interpreted as existing human rights which need to be protected in the context of digital technologies, as physical and digital spaces are increasingly intertwined. Digital rights assess how digital technology affects previously recognized rights – i.e., civil, political, economical, social and cultural rights. These rights form the basis of commitments described in this report and emphasise a culture for more inclusive and responsible use of technology.

'Cities need to expand their capacities so as to be prepared and equipped to lead digital transformation that is people-centered and to support sustainable urbanization towards the public good' – Cities Coalition for Digital Rights

Max Whitehead, Unsplash.

Readers guide

This Guide is structured around three pillars: **foundations, structures and tools**, each of which can be customised based on local needs and ambitions. **Section I** of this publication introduces the first pillar: *Foundations*. **Section II** outlines the *Sructures* to improve digital governance by embedding human rights through various mechanisms. **Section III** presents examples of *Tools* according to the areas that compose our definition of digital human rights.

The first pillar is **'Foundations'**, which outlines core values and six areas that compose what we refer to as 'digital rights', 'digital human rights' or 'human rights and digital technologies'. These areas include: (1) Equality, equity and inclusion; (2) Freedom, autonomy; (3) Privacy, safety, security and protection; (4) Community participation and public engagement; (5) Transparency and accountability; (6) Public goods, open infrastructure, and local public service provision. The second pillar is **Structures**, which are mechanisms that can be used by city governments to embed digital human rights in the structure of the city administration. The third pillar is a list of **Tools** that can be used to operationalise the previous pillars.

The publication includes **examples** of policies, guidelines and methods that illustrate how cities can operationalise human rights in digital contexts. From using open data to facilitating access to basic urban services, to mitigating the impact of algorithms or protecting vulnerable groups' privacy from surveillance technologies, these examples, methods and concepts showcase what cities can do to in practice to put in place human rights considerations related to digital technologies.

In **appendix 1**, an overview of pre-existing global and local guidelines and advocacy work provides more background information. This overview includes everything from governance principles and frameworks from the United Nations and other international and regional organisations, to examples of human rights and digital technologies governance at the local level. At the end, a list of terms and its definitions is provided.

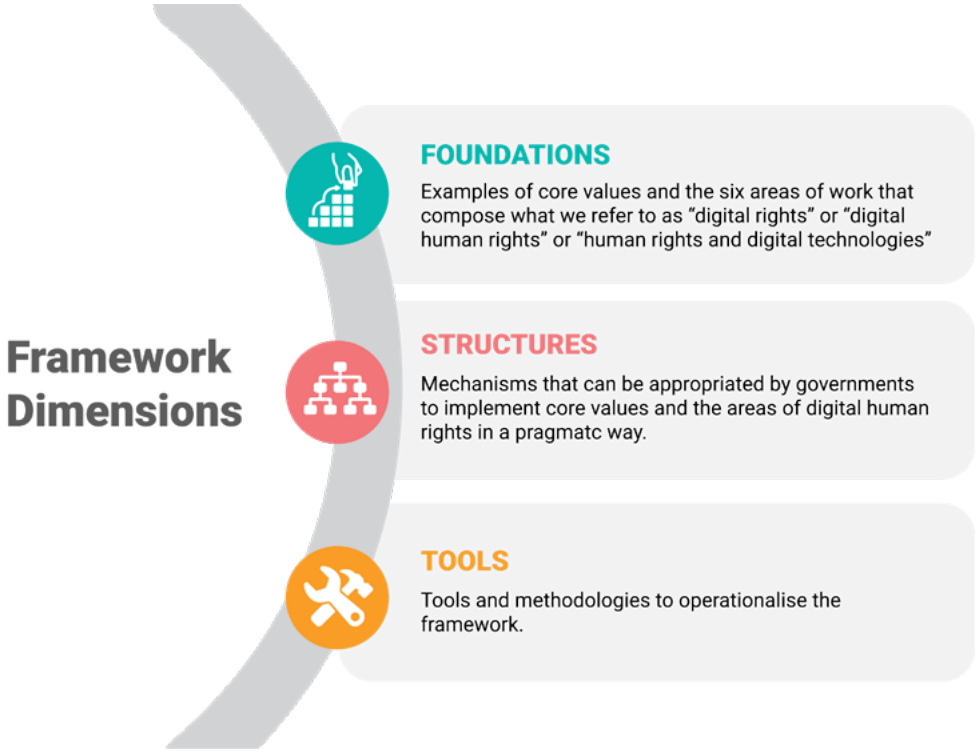
This Guide outlines how cities can uphold a human rights-based approach with regards to the digitalisation of their services' – Cities Coalition for Digital Rights

Andy Kelly, Unsplash

A model for improved digital governance

The governance model proposed in this report takes a multidisciplinary approach to cover the broader field of human rights and digital technologies while focusing on the structural elements of public administrations. This model provides pragmatic support in normative and technical aspects that are involved in mainstreaming human rights in digital strategies. This approach is made in a way that allows local cities to improve their digital governance based on human rights principles customised to their own needs and contexts.

The approach for digital governance to support human rights consists of three main pillars[1]: The first comprises the **Foundations** needed to formalise a city's commitment towards digital transformation centred around people, and to comply with the full range of human rights. The second are the **Structures**, which consist of mechanisms and bodies to integrate commitments into the city's normative/regulatory and operational work. Such structures may include the creation of a digital human rights officer role, external advisory councils, and community engagement processes. The third are **Tools** that include methods and resources aimed at the implementation and mainstreaming of human rights in various aspects and areas of a city's digitalization strategy, and by raising awareness on human rights in the digital landscape.



1 This guide was inspired by the European Union Agency for Fundamental Rights (FRA) Framework. By offering these three main spheres we follow their example in adopting the three levels as found in the OHCHR "conceptual and methodological framework of indicators". European Union Agency for Fundamental Rights , 2021, *Human rights cities in the EU: a framework for reinforcing rights locally,* available at Human rights cities in the EU: a framework for reinforcing rights locally | European Union Agency for Fundamental Rights (europa.eu)

Foundations

Commitment to human rights in the use of digital technologies

Foundations
Commitment to human rights in the use of digital technologies

The core values and themes outlined in this chapter can be used to secure commitment from city officials and create a shared set of guiding values. The core-values should be formalised and published by the local government in the form of a bill of digital rights, charter or code of ethics. These should be developed through a process of engaging with local stakeholders and communities, but can be informed by existing international human rights frameworks. When the commitment to human rights related to digital technologies has been established and published, Section 1 'foundations' is finalised and can be reviewed periodically.

1. Determine core values

Establish the core values of the city and affirm them at the political level.

Provide a formal declaration of the city's commitment to human rights in digital spaces at the highest political level, e.g. mayor, vice-mayor and/or other governing body. The declaration can make links between human rights, the rule of law and democracy, as well as principles of good administration. Some examples of how governments can present, reaffirm, recognize and promote these ambitions with linkages to existing international frameworks can be found below.

'In the last decades, governance frameworks for the internet were developed to raise awareness that human rights exist virtually as well' – Cities Coalition for Digital Rights

Xiaojie, Unsplash

Examples of core values	Framework
All human beings are born **free** and **equal** in **dignity** and **rights.**	Universal Declaration of Human Rights
Cooperation and consultation **open to all**, using information and communications technologies (ICT) and **accessible** data solutions" (para. 92).	New Urban Agenda
Make ICTs **accessible to the public, including women and girls, children and youth, persons with disabilities, elder and vulnerable groups**.(para. 156).	
The creation, promotion and enhancement of **open, user-friendly and participatory data platforms** to **enhance effective urban planning** and management, **efficiency and transparency** through e-governance (para. 160).	
4 - lifelong learning, 5 - gender equality, 5.b - enabling technology to promote the empowerment of women; 8 - sustainable and inclusive growth, 8.2 - through technology and innovation; 10 reduce inequality , 10.2 - social, economical, political inclusion for all, 10.3 - equal opportunities and equity, non-discrimination, 10.4 - social protection policies; 11; inclusive, resilient, safe cities, 16 justice by effective, accountable and inclusive institutions, 16.7 - responsive participation in decision-making at all levels; 16.10 - public access to information and protect fundamental freedoms.	Sustainable Development Goals
The promotion of and **respect** for the right to privacy are important to the prevention of violence, which can occur in digital spaces and includes **cyberbullying** and cyberstalking, to name some.	The right to privacy in the digital age
The right to privacy is important for the realisation of the right to **freedom of expression.**	
Protect: State duty to protect against human rights abuses by third parties, including business enterprises, through appropriate policies, regulation, and adjudication.	Guiding Principles on Business and Human rights - Protect, Respect, Remedy' Framework.
Respect: the corporate responsibility to respect human rights, which means that business enterprises should act with due diligence to avoid infringing on the rights of others and to address adverse impacts with which they are involved.	
Remedy: the need for greater access by victims to effective remedy, both judicial and non-judicial.	
Design with the **user**; Understand the existing ecosystem; Design for scale; Build for sustainability; Be data driven; Use open standards, open data, open source and open innovation; Reuse and improve; Address privacy & security; Be collaborative.	Principles for Digital Development
Respect, protection and promotion of human rights and fundamental freedoms and human **dignity**; **Environment** and ecosystem flourishing; Ensuring diversity and inclusiveness; Living in peaceful, just and interconnected societies.	Recommendation on the Ethics of Artificial Intelligence
Proportionality and do no harm; Safety and security; Fairness and non-discrimination; Sustainability; Right to privacy, and data protection; Human oversight and determination; Transparency and explainability; Responsibility and accountability; Awareness and literacy; multi-stakeholder and adaptive governance and collaboration.	

2. Define thematic areas

Translate core values into themes that are relevant for your city.

These thematic areas are composed of topics directly connected to human rights considerations in the digital context of cities. Setting thematic areas enables city governments to embed and reflect core values into the digital ecosystem of the internal governmental organisation and the use of emerging technologies.

Equality, equity and inclusion

Freedom, autonomy

Privacy, safety, security and protection

Community participation and public engagement

Transparency and accountability

Public goods, open infrastructures, and local public service provision

In general, this means a city can make its thematic work-streams explicit; e.g. transparency, autonomy, equity and participation, as seen below:

Themes	Explanation	Examples and use cases
Equality, equity and inclusion	**Equality rights** contribute to social **justice** in society and **fair** treatment to prevent arbitrary actions based on differentiations among persons or groups. Equity consideration should ensure **equal opportunity**, equal **access** and **non-discrimination** to support an **inclusive** society.	City of Portland- Digital Equity Action Plan City of San Antonio- SASpeakUp City of Bordeaux- Observatoire métropolitain de l'inclusion numérique Learn my way - Kenya City of São Paulo- Pátio Digital City of Long Beach - Digital Inclusion Initiative

Examples of core values		Framework
Freedom, autonomy	**Freedom rights** are again connected to dignity, autonomy, identity and integrity, but from an external perspective. They refer to the right to **express one's philosophy of life without external limitations**. People should be able to control what happens to the data generated by and about themselves, who gets to see and use it, and for what purposes.	City of Helsinki Data Strategy MyData principles Declaration of Principles on Freedom of Expression and Access to Information in Africa
Privacy, safety, security and protection	**Personal rights,** protection of self and personal relation in private and public sphere (no profiling)**.** It is respected that people can form their own life and identity, with the possibilities for **self-development and discovery**. This also includes social and economical conditions for a dignified life.	Mapping and Analysis of Privacy Laws and Policies in Africa COVID-19 and the Right to Privacy: an Analysis of South Korean Experiences City of Portland: Privacy and Information Protection Principles
Community participation and public engagement	Right to participate and shape the collective future of the city.	City of Berlin - Mein Berlin City of La Paz - Barrio Digital Irembo Portal City of Genoa - Lighthouse City Strategy Mexico City- Plaza Publica
Transparency and accountability	**Procedural rights** refer to the right to a fair trial and **impartial judgement**, as well as to **public accountability** of governmental tasks. They enable procedural justice and an equal information position between people and government.	City of Amsterdam- Algorithm register
Public goods, open infrastructure, and local public service provision	Collectively or publicly owned or accessible or part of local public service provision, for the public good, open to use for others. **Open standards. Safe and accessible. Shared benefits.**	City of São Paulo - Dados Abertos Singapur trusted data sharing framework Public London Charter

Examples

Commitments to human rights in relation to digital technologies can be set differently, at various levels of the public administration. Making these values explicit makes communities aware of what is at stake and what needs to be protected when digitising a city. Some governments have published **charters** to define rights and obligations, such as:

- London's (UK) Emerging Technology Charter, with four principles for technology implementation (be open, respect diversity, be trustworthy with people's data and be sustainable).
- The Spanish national government's Charter of Digital Rights which proposes an action framework for all levels of government and actors, to ensure public policy related to technology and the digital world take into account digital rights and are more equal.
- Another example would be the Uthics Value Framework from the City of Utrecht that includes values such as Health, Privacy, Autonomy, Balance of Power, Digital Inclusion, among others.

In other cases, **digital bill of rights** support the regulation of access, uses and data creation:

- At the local level, the City of Los Angeles (USA) has created a Digital Bill of Rights to promote trust while rolling out innovative solutions that must be also ethical, by setting eight provisions for digital services development.
- At the national level, the Brazilian government approved the Internet Bill of Rights as a foundation for the governance of the online space in the country.

A localised bill of digital human rights could also apply to third parties in the city stimulating corporate responsibility to respect human rights, as well as by empowering civil society and academia to access and contribute effective remedies, both judicial and non-judicial [2].

Policies, principles and declarations related to digital technologies are ways for governments to communicate commitments and priorities in different thematic areas. For example:

- The City of Portland (USA) published a Human Rights Declaration Proclamation (2018), a Privacy and Information Protection Principles and a policy on the regulation of face recognition in the chapter 34.10 Prohibit the use of Face Recognition Technologies by Private Entities in Places of Public Accommodation.
- The City of Barcelona (Spain) has adopted the Institutional Declaration on Technological Humanism, which expresses commitment to the promotion of a digital transformation that fosters equity and that protects the rights and liberties of the city's residents.
- The City of Toronto (Canada) developed a Digital Infrastructure Plan (DIP) to modernise and formalise the roles, functions and procedures within which digital infrastructure decisions are made. The Plan evolved from concerns raised by local residents, privacy advocates, City Council and City staff about the lack of an appropriate and comprehensive policy framework for the city. Such concerns were raised in anticipation of a significant private-sector "smart city" development proposal for Toronto's waterfront, "Sidewalk Toronto". The Sidewalk project did not proceed, but instead the DIP was developed based on six key principles: 1. equity and inclusion, 2. a well-run city, 3. social, economic and environmental benefits, 4. privacy and security, 5. democracy and transparency, 6. digital autonomy.

2 United Nations, Guiding principles on business and human rights, Implementing the United Nations "Protect, Respect and Remedy" Framework, 2011, available at https://www.ohchr.org/documents/publications/guidingprinciplesbusinesshr_en.pdf

Case-Study:
Digital inclusion as transversal government-wide topic, City of Barcelona (Spain)

Digital Inclusion must be understood and fostered as a transversal government-wide topic. Thus, it should not only be the CTO's responsibility to promote it, even though technology is involved. Rather, the challenge should be tackled as a whole. Coordination between involved city council departments is a must. It might include:

- **Social services:** They work on-site in neighbourhoods and are in close contact with citizens, and therefore they might detect needs more accurately
- **IT department:** They are in close contact with the private sector dealing with connectivity and digital device provision (e.g. telecom providers, digital device manufacturers, etc.). They might be a key piece in involving private stakeholders
- **Local Economic Growth Agencies:** They usually deal with citizen skills, promoting digital skills educational programmes. Training programmes related to IT might be implemented through these agencies.

Structures

Centralised mechanisms and bodies

Structures
Centralised mechanisms and bodies

Structures help to integrate the human rights commitments into the city's work and decision-making processes. They do not relate to only one thematic area, but include 'whole of government processes', relating to centralised governmental responsibilities. They aim to advance governmental mechanisms and set the whole-of-government conditions that enable social and procedural justice, brought about by all digital human rights thematic areas together. These structures will often require centralised implementation or a great degree of coordination and endorsement, in order to promote a 'whole-of-government' approach rather than seeing it as the responsibility of one department only.

'Civil society representatives, who may encounter examples of human rights violations or discrimination by technology on a daily basis, should have a fast track to communicate these issues to officials'
– Krzysztof Izdebski / ePanstwo foundation (Poland)

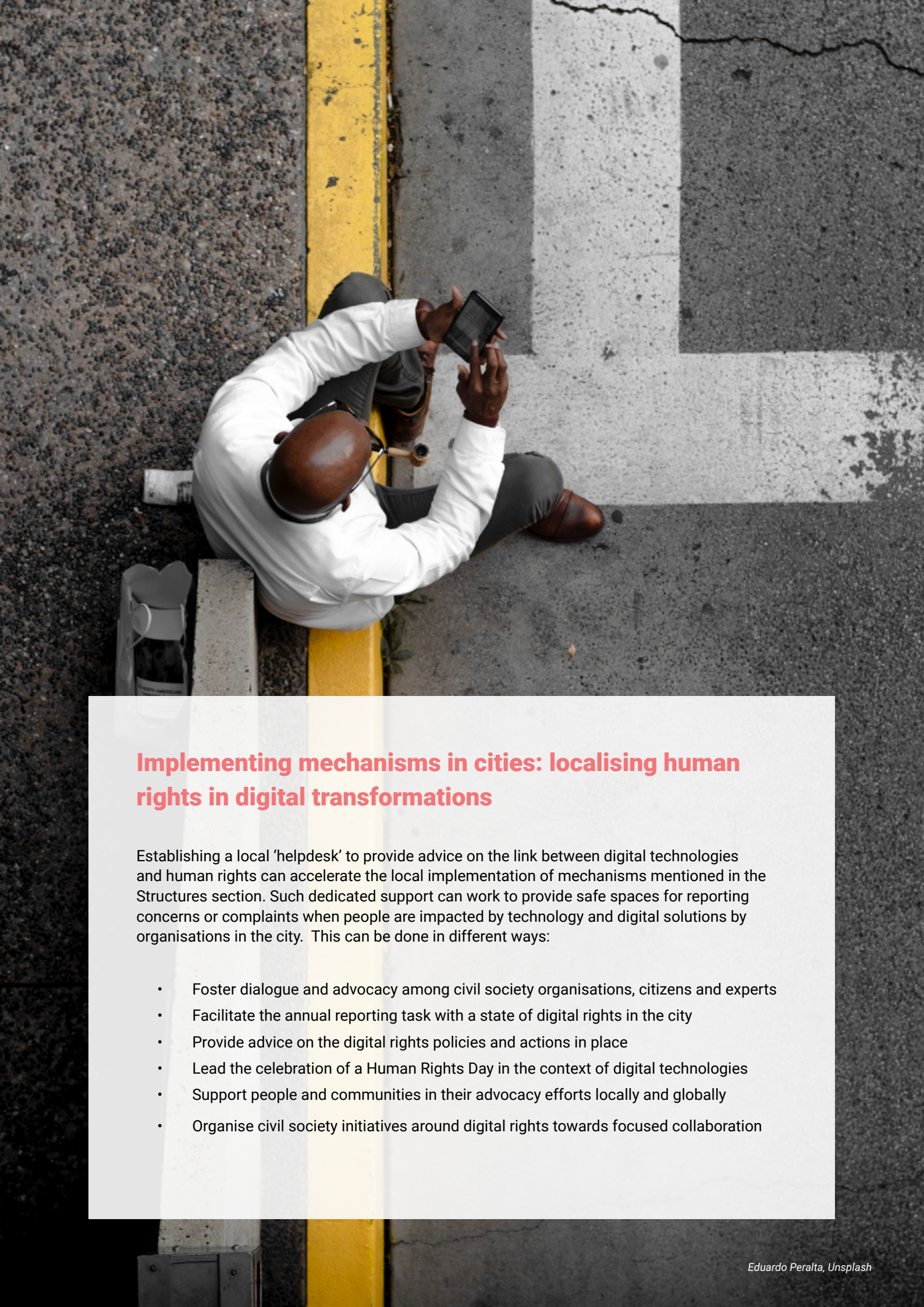
The *structures* supporting the governance of technology are driven by the foundations (Section I) and are operationalised by the tools (Section III). Mechanisms to embed human rights in digital governance include:

Mechanisms	Rationale	Recommendations and examples
Mechanism 1. Formalise the city's commitments to human rights: publishing a declaration at the highest political level support the communication of such commitments.	This declaration should establish the links and core values to protect human rights in digital spaces.	Commitments can be set differently at various levels of the public administration, and include charters, policies, principles or declarations.
Mechanism 2. Assign a 'human rights and digital technologies' mandate to elected political representatives and senior leadership: elected political representatives function as ambassadors and periodically must account for the achieved progress on the topic.	Deputy mayors and senior leadership who are responsible for the city's digital and/or ICT strategy can advocate for digital human rights locally.	Moreover, this representative can address the topic to colleagues and senior leadership responsible for other policy and service domains. Rather than seeing it as the responsibility of one department only, every policy domain has a digital component and is responsible for the safeguarding of human rights when using digital technologies.
Mechanism 3. Mainstream human rights and digitalisation in all policy areas and processes of the city administration: adopting a 'whole-of-government' approach to 'human rights and digital technologies.	Chief Officers for data, technology or innovation, can support better governance of ICTs aligned with human rights across the different departments of the municipality. Moving from silos to creating networks of collaboration is a shared responsibility of the centralised bodies responsible for digital governance in the city, as well as to the digital services in individual service/policy domains (e.g. social, public or healthcare services).	This can be achieved by: - Establishing algorithms risk management approaches, to manage implications of its use and to increase transparency in how it is designed; - Manage ethical concerns with data across the projects life cycle, implement continuous learning in the fast-pace environment of technology, and prioritise flexible and collaborative approaches over fixed problem-solving protocols; - Develop a culture in the organisation to visualise data considering clear societal goals, invest in capacity for staff and stakeholders, especially in the community, to maximise data as an asset. - Mapping the use of technology and digital services within local public services and determining baseline conditions for collaboration across and between departments. - Identify entry points for a whole-of-government approach, linked to the values and thematic areas earlier identified in the chapter of foundations.

Mechanisms	Rationale	Recommendations and examples
Mechanism 4. Form a team with suitable capabilities to explicitly advance the connection between digital and human rights throughout the organisation as their core purpose: Diversity in teams who plan, design and implement technology contributes to mitigate bias.	This creates visible positions in the emerging field of digital rights by building in-house capacities and skills. This team should establish links within each individual service/policy domain applying a combined focus on human rights and digital technologies across the municipality.	Such positions can include transparency & accountability advisor, fair algorithm developer, digital human rights officer, open-source coder, data-representation analyst, among others.
Mechanism 5. Build skills and organise training in human rights and digital transformation: upskilling public servants with new capabilities and knowledge to manage inclusive and democratic uses of technology.	New ways of working that enable continuing involvement of stakeholders and the communities are needed. This can also entail including specific skills or roles in the intersection of technology and human rights such as "algorithmic auditors" to increase team capabilities.	Upholding human rights principles through training for elected politicians, management and municipal staff can raise awareness and commitment towards human rights. This fosters respect for digital human rights and empowers civil society to access and contribute to effective remedies, both judicial and non-judicial.
Mechanism 6. Organise and promote participation of people in the decision-making process of the city: ensuring participation is inclusive by characteristics such as gender, age, ability, ethnicity, socio-economic background, for example.	To some degree, cities may have participatory tools and processes in place, and they can be enhanced to strengthen citizen participation in the decisions related to digital transformation as well as in the design and demonstration of digital solutions.	A combined offline and online approach is recommended, since participatory processes that rely on digital connectivity only, could become inherently biased, because of the lack of participation of vulnerable communities. This can be ensured by developing an inclusivity lens to define vulnerable stakeholders for each initiative, identifying barriers to participation, and drawing from diverse epistemologies and methods.
Mechanism 7. Implement an environment to experiment and test digital solutions within the city domain: participation and inclusion of the community in various stages of technology development and deployment.	This will allow policymakers and project teams to better understand the implications of digital solutions for the people and the existing structures and systems.	Testbeds or living labs for example, can emphasise the interactions between human behaviour (feelings, opinions, impact), design (technology, data, software) and agreeable norms (legal regulations, policies, values).

Mechanisms	Rationale	Recommendations and examples
Mechanism 8. Appoint external and diverse advisory council(s) with key local actors: including civil society organisations, representatives of vulnerable social groups, local associations, and businesses.	This advisory council can facilitate engagement, communication, and cooperation on digital human rights with diverse groups living in the city.	The council can help bring human rights issues to the forefront by engaging diverse vulnerable groups living in the city. These include actors from national, linguistic and religious minorities; migrants, refugees and asylum seekers; young people and children; elderly people; persons with physical and mental disabilities; people in extreme poverty or in homelessness; single-parent families, sexual minorities and women.
Mechanism 9. Provide transparency in the way the city operates and delivers services to the public: by setting up quality control measures and users' feedback as well as promoting open government and open data approaches.	This supports the city in making transparency a priority and communicating where technology is being used in the city.	Publishing registries, for example, can strengthen open government architecture and an organisational culture around open data to facilitate data sharing across different teams, including setting standards for interoperability.
Mechanism 10. Establish a 'human rights and digital technology' municipal office, an anti-discrimination office or Ombuds institution with a human rights and digital technologies remit. They could be supplemented by community mediators to improve social inclusion.	This provides constituents of the city with a clear entity to turn to when they experience an issue with a human rights angle which specifically concerns a digital or technological component that needs remedy. This provides a safeguard for escalation in case effective remedy cannot be achieved any other way.	For instance, this office can provide low-threshold access to justice and legal remedy to victims of cyber crime. It can be supplemented by community mediators to contribute to social inclusion and bring issues facing people from diverse communities to the surface.
Mechanism 11. Build a repository of human rights impacts assessment for new projects: identify solutions based on data-component or emerging technologies (including the use and application of artificial intelligence).	Such a repository enables the city to audit the technologies and are required to monitor compliance and evaluate their implementation by the local government. Having a clear ethical and human rights-based methodology to assess the correct use of digital technologies, goes beyond mere privacy safeguards. Moreover, it demands evaluation prior, during and after implementation of the project.	A thorough assessment of human rights impacts is an involved process and requires background research and fieldwork, as well as stakeholder involvement. It is based on meaningful participation, empowerment, transparency, accountability and impact mitigation measures. Some examples and resources include: - Government of the Netherlands' Fundamental Rights and Algorithms Impact Assessment - Human Rights Impact Assessment of Digital Activities by The Danish Institute for Human Rights - Recommendations for Assessing AI Impacts to Human Rights, Democracy and the Rule of Law by the European Centre for Not-for-profit Law

Mechanisms	Rationale	Recommendations and examples
Mechanism 12. Apply a human rights lens to procurement and funding of digital solutions: developing new models for technology acquisition to conduct due diligence processes with third party collaborators and compliance with regulations, laws and standards.	Governments constitute a large portion of digital solutions and technology consumers, which makes procurement a powerful tool to shape markets and influence suppliers to adopt new standards.	Examples include: - The Global Initiative on Inclusive ICTs reinforces the use of public procurement as a policy tool to drive accessibility with practical guidance for policymakers of all levels of the government towards cities that are accessible for people with disabilities and design better places for all. - The city of Amsterdam uses contractual terms for the procurement of algorithms, in order to gain insights into the technical operation of the algorithms, what datasets are used, how choices and assumptions are made, and what rules apply if the algorithm affects a person. - The Danish Institute for Human Rights has also published the Toolkit on human rights for procurement
Mechanism 13. Establish an annual reporting mechanism on human rights related to digital technologies: to have a recurring process for monitoring and evaluation of digital human rights across all domains of the municipality.	The findings could be discussed in the city council to monitor progress, identify lessons learned and propose new activities. This reporting mechanism can set specific KPIs to measure progress towards digital human rights goals.	Some attempts include: - An evaluation of digital platforms and telecommunication companies on commitments and policies based on international human rights, indicators and data for human rights and sustainable development - Evaluation of specific areas such as a framework for assessing internet development.
Mechanism 14. Organise an annual Digital Human Rights day on the 10th of December (Human Rights Day): support advocacy and reinforce the city commitments with the local and international community.	Raise awareness in the city and with people and stakeholders on digital human rights and provide an opportunity for debate on different scenarios and challenges related to human rights and technology. Different parties in the city society can start and discuss collaborations that enhance the overall state of human rights as they relate to technology in the city.	- Digital Rights are Human Rights - The Digital Freedom Fund celebrated Human Rights Day 2020 by publishing 16 short articles illustrating how Digital Rights are Human Rights.
Mechanism 15. Foster partnerships, lobby strategies and cooperation with national and international actors: human rights and technology challenges faced by cities can be tackled by cooperating with national governments, regional and local organisations and the community.	Human rights in combination with digital technologies are not only gaining importance within cities and local and regional governments, but also at higher levels of decision-making. Through alliances and networks, deputy mayors and senior leaders can actively communicate with other representatives to exchange knowledge, establish partnerships and learn from peer-to-peer interactions.	Existing networks include: - Cities Coalition for Digital Rights - AI Sur - African Digital Rights Network, Coconet. - At the international level, examples include the UN High-Level Political Forum and its Local and Regional Government Forum; the Urban 20 which facilitates discussions between cities and the G20 and which develops a communiqué which in 2021 containing a strong call on protecting digital rights.



Implementing mechanisms in cities: localising human rights in digital transformations

Establishing a local 'helpdesk' to provide advice on the link between digital technologies and human rights can accelerate the local implementation of mechanisms mentioned in the Structures section. Such dedicated support can work to provide safe spaces for reporting concerns or complaints when people are impacted by technology and digital solutions by organisations in the city. This can be done in different ways:

- Foster dialogue and advocacy among civil society organisations, citizens and experts
- Facilitate the annual reporting task with a state of digital rights in the city
- Provide advice on the digital rights policies and actions in place
- Lead the celebration of a Human Rights Day in the context of digital technologies
- Support people and communities in their advocacy efforts locally and globally
- Organise civil society initiatives around digital rights towards focused collaboration

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Tools

Methods to implement human rights in digital spaces

Tools
Methods to implement human rights in digital spaces

In this final chapter, tools, methods and resources are discussed that will **support a city to implement the foundations and structures.** Human rights play an important role in both the digitalization of municipal services as well as the digitalization of life and space in the city. Having a range of instruments to promote them is critical in the innovation, digital and technology domains.

Tools can be applied to operationalise the structures (section II), following the foundations commitment (section I), and throughout the design and development of digital services in any city-government. They aim to fit the scope of data (input), code (software, applications, design, models), architecture (IT-architecture, operating system) and finally actions (decisions or policies) based on data or data-enabled systems. These instruments will be discussed following the key thematic areas of this guide:

1. Digital inclusion, equality and equity
2. Freedom, autonomy, control and self-determination
3. Transparency and accountability
4. Public engagement and community participation
5. Privacy, safety, security and protection
6. Public goods, open infrastructure

'Cities should have strong data protection policies in place that ensure transparency about what data is collected about citizens, and how it is used, processed, and retained. As cities become "smarter", there are large amounts of data collected. Robust mechanisms must be in place to ensure that this data is not misused' – Nighat Dad / Digital Rights Foundation (Pakistan)

Patrick Amoy, Unsplash

1. Digital inclusion, equality & equity

Digital inclusion and equality themes include **fair and just treatment, non-discrimination, equal opportunity, equitable access and building skills**. To ensure no one is left behind, governments must have inclusion as a priority to address inequalities and empower people, including:

- **Improve access to services and increase participation** for marginalised and disadvantaged groups.
- **Conduct bias assessment** in data-projects and actively and securely improve the representation of minorities in the data, to minimize the risks of unintended discrimination.
- **Understand and address the digital divide** in the community by investing in human centred design, and by providing infrastructure and devices, through digital skills and capacity building, understanding attitudes towards digital technology and the intended and actual impacts of technology.
- **Allocate resources** for increasing digital inclusion, such as tools to help governments effectively engage with residents in their communities to bridge the digital divide and address inequalities.
- Develop and promote equitable **digital transformation strategies** centred around residents' rights and real needs.
- Perform **digital gap surveys**, and use data to focus actions in neighbourhoods and groups where the digital divide is wider.
- Promote inclusion by **increasing the accessibility and affordability of digital platforms and services.**
- Build a **digital inclusion observatory** and give a voice and platform to residents and visitors who are excluded due to lack of support and accessibility.

Area	Tool
Strategy	Centering People in Smart Cities, UN-Habitat
Digital divide	Assessing the Digital Divide, UN-Habitat Meaningful connectivity, a4ai
Digital Inclusion	Digital Inclusion Kit, Leeds City Council, UK Digital equity playbook: How city leaders can bridge the digital divide, National League of Cities Addressing the Digital Divide, UN-Habitat Literacy All, UNESCO Digital Inclusion Navigator, Weforum Digital Inclusion Maturity Model, Smart Cities 4 all
Accessibility	Guidelines for designing digital services with accessibility and inclusion criteria, São Paulo City Hall, Brazil Smart Cities for All Toolkit, Smart Cities 4 All UCLG Community of Practice on Inclusive Cities and Territories, UCLG (including easy to read format and audio format) Accessible ICT public procurement policy, G20 Global SMart Cities Alliance

Case-Study: Community networks in Latin America

It is estimated that 250 million people in Latin America do not have access to the internet, the majority who are considered poorer, where men are more likely to access it than women.

Among the barriers, are the lack of affordability of internet access, digital literacy and education levels of the population, and the relevance of services offered. In such a landscape of infrastructure and access, in which the low-income population is not an attractive market share nor has been reached by government subsidies policies, one of the alternatives found for communities to connect to the online environment is the establishment of community networks. Such bottom-up networks are owned by locals, who jointly manage it as a common good, for non-profit purposes, constituted by collectives, indigenous communities or non-profit civil society. They respond to demands for infrastructure and create new governance models and novel possibilities and opportunities for information and technology access. They demonstrate how such networks promote better alignment with people's aspirations, development goals and worldviews. As governments play an important role in providing a regulatory framework that allows these networks to flourish, the Internet society proposes in this study a concept of a regulatory framework for community networks.

David Salamanca, Unsplash

2. Freedom, autonomy, control and self-determination

The digital footprint in cities grows exponentially as services and operations are digitised, and much of the data used by organisations is generated by individuals in their daily lives. Citizens' data is produced when a government platform is accessed, or in public participatory processes, for example.

Supporting freedom, autonomy and self-determination include tools that help governments to:

- **Increase residents' control over the personal data collected** by the city and how it is shared.
- **Protect rights of communities and individuals in data practices** and explore data governance models to steward and use data fairly and equitably towards generating public value.
- **Educate populations about when and what types of personal data are created and 'owned'** by the individual, and what is 'owned' by the government.

Area	Tool
Data sharing and public value	Data Collaboratives, GovLab Data sharing toolkit for cities, Connected Places Catapult Data and Public Service Toolkit, Open Data Institute Legal mechanisms for data stewardship, Ada Lovelace Institute
Human-centric data	Introduction to human-centric use of personal data, MyData
Participatory data stewardship	A framework for involving people in the use of data, Ada Lovelace Institute Common Knowledge: Citizen-led data governance for better cities, DECODE

3. Transparency and accountability

Transparency about practices and use of data and technology supports governments' accountability and compliance with laws and regulations. In today's public sphere, where automated decision-making is increasingly being adopted, transparency of public decision-making needs to be prioritised so there is a broader understanding of how algorithms and codified processes impact society. To support more balanced power relations, governments should be held accountable for their actions and for the implications of the technology they adopted in cities.

Supporting transparency and accountability also means to:

- Publish in **open format**: policy documents, data sets and the organisation's practices and use of data.
- **Assess risks, harms and benefits** of data use and technologies.
- Use **open registries** to be transparent about suppliers; data collected and used; algorithm performance, which can include dedicated registries such as AI registry, sensor registry, etc.

Liability and accountability in Artificial Intelligence can include:

- **Full access to the algorithm code** by the competent authorities whenever needed for inspection or verification purposes.
- Obligations to **report which algorithms are being used.**
- **Framework for algorithmic auditing** that supports AI system development end-to-end.

4. Public engagement and community participation

The decisions that are made and technologies that are developed by governments, municipalities and other public institutions often directly affect society. **Projects and designs that will affect the residents must involve these people in one way or another.** There are many ways in which citizens' voices can be heard and taken into consideration. It is important to disaggregate the different focus groups, public consultations and civil society organisations into characteristics such as gender, age, ability and migration status, to make sure that every vulnerable group is included. It is also encouraged to take intersectionality into account, as people at the intersection of several marginalised social groups have different types of access (or lack thereof) to resources. Encouraging community participation will provide insights into uptake and 'creative misuse' - usage in innovative and unintended ways - of technologies by different communities, leading to new forms of expression.

This will bring new ideas to the table and foster innovation. Ways of engagement include:

- Creating a **pool of civil society organisations** and representatives that are open to consultation and participation in municipal projects.
- On short term projects and on new and impactful digital policies, **creating opportunities for public consultation** and organising focus groups. This is particularly useful when it comes to questions on the design and implementation of new technologies, and can be an opportunity for the inhabitants of a city to be directly involved in the process.
- **Involving civil society organisations to represent the voices of marginalised groups of society**. This is particularly important for people-centred policy proposals and changes.
- For longer projects with a large budget, creating a **working group** that includes representatives of civil society organisations, experts, or representatives of specific groups particularly exposed to the consequences of technology.
- Creating a mechanism which allows **civil society organisations and residents to inform municipalities on urgent matters** regarding technologies. In case of an emerging issue or a breach of the technology, civil society representatives can step in and inform their elected officials.
- Creating a map of actual situations that can happen with regards to **human rights 'violations' in the city's digital spaces**. Hosting dialogues in the public space and asking for input on how to deal with these situations.

- Assigning a senior focal point: a Community Manager to **facilitate the contact** with these stakeholders.

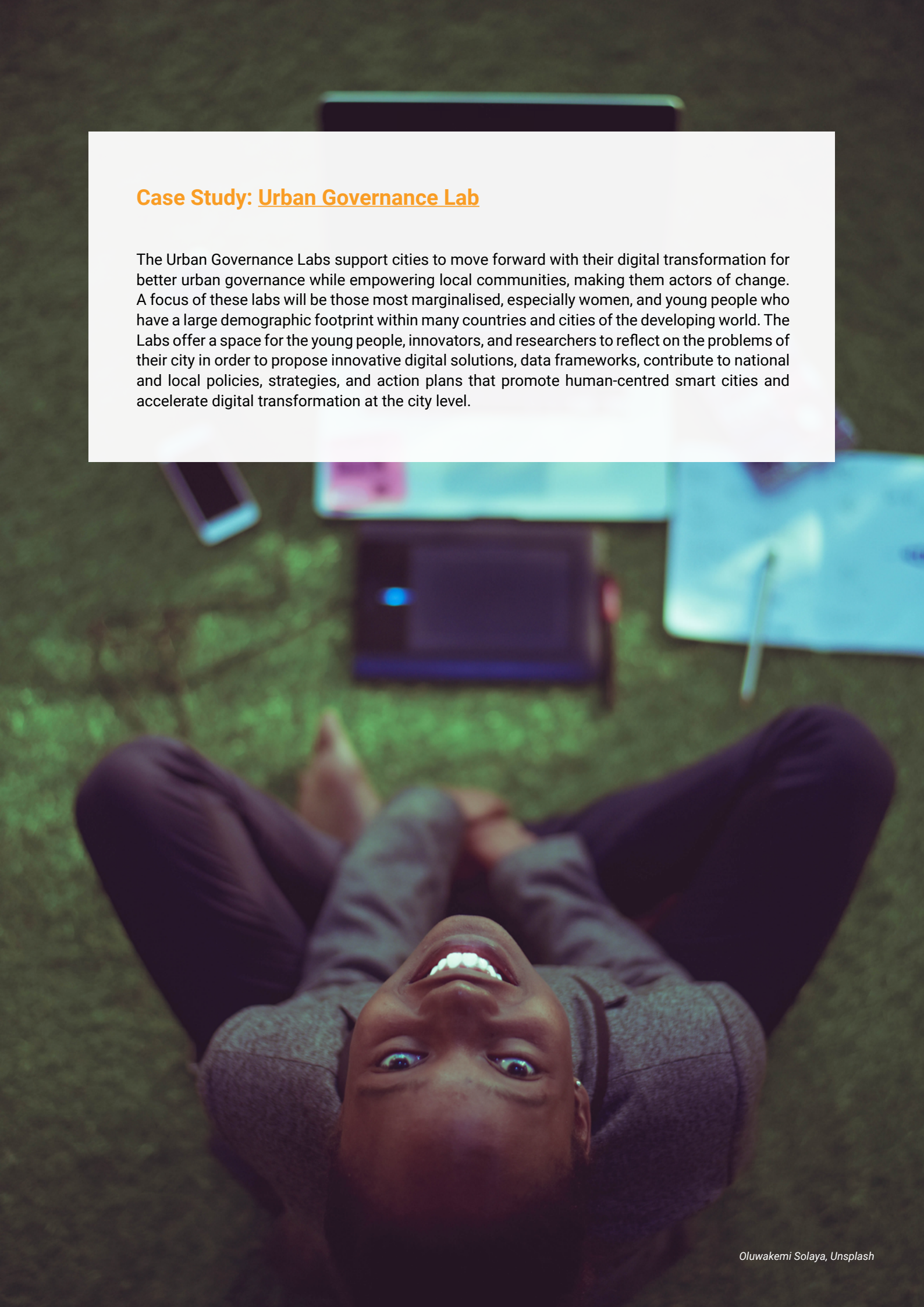
Area	Tool
Surveillance	Community Engagement Plan for Surveillance Policy, City of Portland (USA)
(Digital) platforms for public participation, participatory budgeting	Decidim Plataforma Digital de Participación Ciudadana, City of Mexico, Mexico Consul
Ethical and/or Privacy committee with (non-)experts:	Oakland's Privacy Advisory Commission: Community based or public oversight or governance structures
Women & girls	GenderTech Toolkit, UNICEF
Women & girls, Youth, Communities	Block by Block, UN-Habitat Her City, UN-Habitat Urban Governance Lab - youth digital advisors example How to build digital solutions to girls' digital realities, UNICEF
Digital inclusion art-making and storytelling	Digital Inclusion Roadmap, City of Long Beach (USA)

'Do not start AI and automatic decision-making systems with vulnerable populations. Oftentimes, the first AI systems are introduced with the people who have less resources to defend themselves'
– Gemma Galdon Clavell / Eticas (Spain)

Jezael Melgoza, Unsplash

Case Study: Urban Governance Lab

The Urban Governance Labs support cities to move forward with their digital transformation for better urban governance while empowering local communities, making them actors of change. A focus of these labs will be those most marginalised, especially women, and young people who have a large demographic footprint within many countries and cities of the developing world. The Labs offer a space for the young people, innovators, and researchers to reflect on the problems of their city in order to propose innovative digital solutions, data frameworks, contribute to national and local policies, strategies, and action plans that promote human-centred smart cities and accelerate digital transformation at the city level.



Oluwakemi Solaya, Unsplash

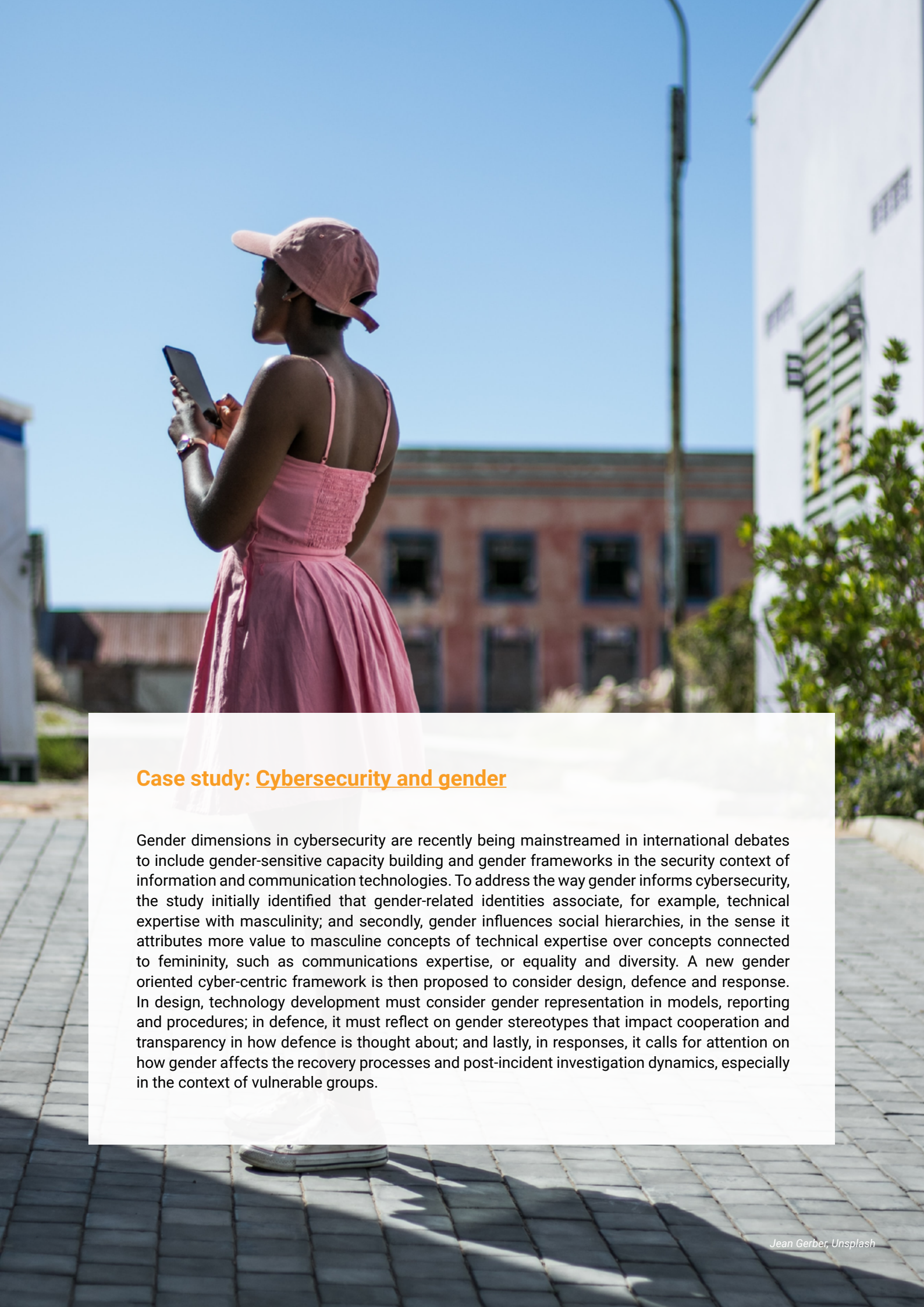
5. Privacy, safety, security and protection

As a universal human right, no one should be subjected to interference with their privacy. **Individual data should be protected to not profile a specific identity or put people at risk**. People should be informed and have awareness of data practices, including information about surveillance and the capacity to freely communicate online, privately, and anonymously.

Governments should take measures or strengthen existing practices, to safeguard people's interest, and use tools, for example, to:

- **Have strict data protection and privacy practices** to collect, access, classify, analyse, share and use data.
- **De-identify** personal and community **data.**
- **Disaggregate data** through a process that considers a solid purpose to the collection, storage, use and disclosure and which engages the community to build a respectful relationship.
- **Data security** is crucial in ensuring data privacy and data protection.
- Incorporate **privacy by design** at early stages of the data management plan.
- **Consider different contexts** (cultural, geographic, socio-political, for example) and how it impacts the data available, including the possibility of it turning non-sensitive data into sensitive data.

Area	Tool
Surveillance	Sensor Registry
Report sensors deployed in public spaces	Crowd monitoring Technology
Right not to be tracked in public space	Public Eye, City of Amsterdam
Lawfully ban facial recognition	Ban on Facial Recognition
Data sovereignty	Disaggregated Demography data collection in British Columbia: The grandmother perspective, British Columbia Office for Human Rights Commissioner
Cybersecurity	Cyber Accountability Model, G20 Smart Cities Alliance



Case study: Cybersecurity and gender

Gender dimensions in cybersecurity are recently being mainstreamed in international debates to include gender-sensitive capacity building and gender frameworks in the security context of information and communication technologies. To address the way gender informs cybersecurity, the study initially identified that gender-related identities associate, for example, technical expertise with masculinity; and secondly, gender influences social hierarchies, in the sense it attributes more value to masculine concepts of technical expertise over concepts connected to femininity, such as communications expertise, or equality and diversity. A new gender oriented cyber-centric framework is then proposed to consider design, defence and response. In design, technology development must consider gender representation in models, reporting and procedures; in defence, it must reflect on gender stereotypes that impact cooperation and transparency in how defence is thought about; and lastly, in responses, it calls for attention on how gender affects the recovery processes and post-incident investigation dynamics, especially in the context of vulnerable groups.

Jean Gerber, Unsplash

6. Public goods and open infrastructures

Open government, open data and interoperability are crucial to foster innovation, and contribute for new solutions to existing urban challenges that impact people's lives in cities. Allowing any person or organization to access non personal or sensitive data, softwares and infrastructure prevents discrimination of groups and promotes inclusion. Governments can increase participation and contributions in the development of technology when it is open source.

Area	Tool
Public goods	Digital Public Goods Registry, Digital Public Goods Standards
Interoperability	Minimal interoperability mechanisms, Open & Agile Smart Cities e-Government Interoperability Guide, UNDP
Open software	Standard for public code, Foundation for public code

'Further collective mobilisation calls for meaningful transparency and accountability for online platforms in their due diligence to ensure their products and services uphold international human rights standards.' – Asha Allen / Centre for Democracy &Technology (United States)

Tobi Oshiinnaike, Unsplash

Appendix 1: Overview of pre-existing work

This appendix provides an overview of the existing work around the governance of human rights in the digital environment. It covers governance principles and frameworks from the UN and other international and regional organisations, as well as examples of human rights and digital technologies governance from the local level.

Following the New Urban Agenda, UN Member States committed to "adopting a smart-city approach that makes use of opportunities from digitalization, clean energy and technologies[viii], as well as innovative transport technologies". They also committed to promoting the "development of national information and communications technology policies and e-government strategies, as well as citizen-centric digital governance tools, tapping into technological innovations, including capacity-development programmes, in order to make information and communications technologies accessible to the public, including women and girls, children and youth, persons with disabilities, older persons and persons in vulnerable situations[ix]."

In response to Member States' commitments, UN-Habitat's People-Centered Smart Cities Flagship Programme, supports national and local governments with their digital transition. It promotes a multi-level governance strategy to help build skills and capacity to develop, procure and effectively use digital technologies in an ethical, inclusive and sustainable way to make sure that no one is left behind[x].

How technology is used and for what purposes are human-made choices. If not well governed and managed, digital technologies can exacerbate existing inequalities[xi]. This shows the need for a multidisciplinary approach on the intersection of human rights, technology and the public socio-spatial context of the city, based on existing work concerning human rights and digital technologies, governance principles, case studies from local governments and inputs from civil society.

Good urban governance is "linked to the welfare of citizenry"[xii], meaning that people should be able to access the benefits of it, making it clear that no person can be denied access to the necessities of urban life.

Debates on good urban governance must be grounded in relevant norms of international legal instruments, commitments made by governments and the operational experience in cities. Strong normative and operational approaches to good urban and digital governance must be inclusive and based on local and lived experiences to ensure no one is left behind.

International instruments and global commitments

Human rights are one of the three foundations of the United Nations. The Universal Declaration of Human Rights established the responsibility of Member States to protect individuals' fundamental rights. This is supported by the Sustainable Development Goals, which in cities is specially connected to the SDG 11 – Make cities and human settlements inclusive, safe, resilient and sustainable.

Governance principles and frameworks from the UN system recognize the contributions of technologies for human progress and human rights. Simultaneously, they also acknowledge the challenges technologies raise in this regard.

Different resolutions regarding human rights and digital technologies have been approved by the General Assembly and the Human Rights Council. The UN General Assembly resolution The Right to Privacy in the Digital Age draws attention to the risks of surveillance, interception and data collection by governments, companies and individuals, which can violate human rights and may affect all individuals, with particular

effects on women, as well as children and those who are vulnerable and marginalised. In its 2021 report 'Possible impacts, opportunities and challenges of new and emerging digital technologies with regard to the promotion and protection of human rights', the Human Rights Council Advisory Committee recognizes the potential of technology to promote and protect human rights and fundamental freedoms, and to ensure no one is left behind in the achievement of the SDGs.

The UN Secretary's General Roadmap for Digital Cooperation addresses the impact of digital tools in human rights advocacy and violations. It is a call for attention on the ways technology is often used for surveillance, repression, censorship, online harassment, but also a reinforcement of the use of technologies to advocate, defend and exercise rights in the online space, positively affecting the offline environment.

As a great portion of the digital solutions adopted in cities are supplied by the private sector, in the Guiding Principles on Business and Human Rights, the UN's Human Rights Council proposed the 'Protect, Respect, Remedy' framework. According to this Framework it is "the State's duty to protect against human rights abuses by third parties, including business enterprises"; and it is "the corporate responsibility to respect human rights, which means that business enterprises should act with due diligence to the rights of others and to address adverse impacts with which they are involved".

People-centered approaches

The Fundamental Rights Agency published in 2021 a framework for Human Rights in Cities in the European Union, in which 'foundations', 'structures' and 'tools' encourage the development of a local culture of human rights. Moreover, the European Commission published a declaration on European Digital Rights and Principles (2022).

The Declaration and Five Principles of the Cities Coalition for Digital Rights, an international network of cities, expands the domain of digital human rights beyond considerations of internet governance, to include principles addressing digital technologies, data, connectivity and participatory processes, within the scope of local governments' policy, urban space management and provision of services.

1. Universal and equal access to the internet, and digital literacy
2. Privacy, data protection and security
3. Transparency, accountability, and non-discrimination of data, content and algorithms
4. Participatory democracy, diversity and inclusion
5. Open and ethical digital service standards

Governance frameworks for the internet were developed to raise awareness that human rights need to be protected online as well as they are offline. That is the main objective of the *Charter of Human Rights and Principles for the Internet* by the Internet Rights & Principles Coalition. Other examples of frameworks associated with human rights and digital technologies with a scope beyond internet governance, have been mainly focusing on singular domains such as data, Artificial Intelligence ethics or data & privacy.

Specific frameworks advocate for the protection of vulnerable groups such as women, youth, older persons, persons with disabilities and refugees. Children's rights are set out in the General Comment on Children's Rights in Relation to the Digital Environment and the Code for Children's Rights. Protection of indigenous people's data rights in the US are covered by resolutions such as the Support of US Indigenous Data Sovereignty and Inclusion of Tribes in the Development of Tribal Data Governance Principles. Inclusion and accessibility of people with disabilities are supported by the ICT Opportunity for a Disability-Inclusive Development Framework.

Civil society and the role to promote, defend and protect digital human rights

Civil society has conducted important work and advocacy actions on a broad range of topics to help communities and minorities globally claim their rights in the digital context of cities. Examples of organizations and academia working to strengthen human rights in Latin America's digital environment include mobilizations with an intersectional feminist lens to protection of rights and regulation of technology in Brazil, educational and investigative approaches to unpack technology's potential for the people in Peru, internet governance and security in Panamá, open governance and intersectional-focused civic technologies in Paraguay, freedom of speech and non-discrimination in Mexico, cyberfeminism in Guatemala, to mention a few.

Privacy is a recurrent concern and the Gendering Surveillance movement in India examines the intersection of gender and surveillance in India, prompted by the implementation of the digital ID *Aadhaar*. The Southeast Asian region has focused mainly on transposing conventional rights into the digital space, with major challenges including deficit technical capacity, communication barriers for cross border dialogues, and the fact that technology is mostly acquired from Western countries helped to define priorities and actions for expanding the movement locally. Communities and movements advocating for human rights and digital activism in India, Central Asia and Eastern Europe are exploring the ways in which specific groups[3] are disproportionately impacted by surveillance.

In Europe, civil society organisations cooperate over concerns about artificial intelligence, surveillance, privacy and advocacy for more robust laws and private sector accountability; and in other instances the freedom of speech, data protection and net neutrality; including to defend the right to access knowledge, to assembly, consumer rights and freedom of expression. Semi-automated decision-making and banning the use of technologies such as facial recognition that use biometric data, are also main points of attention.

In the United States of America, the early stages of the digital rights movement focused on copyright, and evolved over time to address a range of topics from internet access and infrastructure, community networks and digital sovereignty, to fake news, digital activism and social media, and the data sovereignty rights of indigenous populations. It has also supported efforts to strengthen freedom of speech, privacy and protect human rights in the digital environment.

Across African countries, surveillance, privacy, digital inclusion and bias in algorithms stand out as common issues. There have been initiatives that include research and advocacy on data protection, intellectual property and risks associated with online safety of children; and digital inclusion of minorities and marginalized groups, and human-centered design training for digital human rights. Because of Internet shutdowns and the risks for freedom of speech and the digital divide[xii], declarations and principles were published in recent years on internet rights and freedoms[xiv]. Initiatives in the region have also focus on leadership development of internet governance, a feminist approaches to AI and privacy, gender responsive policies, and connecting underserved youth to digital opportunities while protecting their rights, with a growing strong open data African community.

3 QT2SBIPOC - Queer, Trans, Two-Spirit, Black, Indigenous, and People of Color

End notes

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iv. Data Deserts: How to Avoid Digital Discrimination - Datassist (idatassist.com)

v. United Nations, New Urban Agenda, 2017, available at https://habitat3.org/wp-content/uploads/NUA-English.pdf

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xiii. Paradigm Initiative, Digital Rights in Africa, 2019, available at https://paradigmhq.org/report/digital-rights-in-africa-2019/

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List of terms

Concept	Definition (Source, if applicable)
Public Participation	Public participation in governance involves the direct involvement – or indirect involvement through representatives – of concerned stakeholders in decision-making about policies, plans or programs in which they have an interest. Stakeholders are persons, groups or organizations that may influence or be affected by policy decisions or place a claim on an organization's or other entity's attention, resources or outputs (Quick and Bryson, 2016). Other understandings: Public participation as an action or a series of actions a person takes to involve themselves in affairs of government or community. These activities include voting,attending meetings, participating in public or private political discussion or debate on issues, signing a petition on a desired government action or policy, volunteering in community activities and contributing money to a political party or candidate of one's choice among other similar activities (URAIA, 2016).
Digital Divide	The gap between those who have access to, and use Information Communication Technologies (ICTs) including Internet connectivity, digital literacy skills, and Internet-enabled devices, and those who do not. While every community is different, the digital divide consistently reflects and amplifies existing social, economic and cultural inequalities such as gender, age, race, income, and ability. Access is multidimensional and includes the physical, spatial, cultural, demographic and socioeconomic conditions of accessibility.
Digital Inclusion	A digital inclusion plan sets forth guiding principles, definitions, activities, roles and responsibilities and funding for reaching a shared vision of digital inclusion with stakeholders. Broadly, the plan should be evidence-based and developed in collaboration with various stakeholders. Other understandings: The activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies (ICTs). This includes 5 elements: 1) affordable, robust broadband internet service; 2) internet-enabled devices that meet the needs of the user; 3) access to digital literacy training; 4) quality technical support; and 5) applications and online content designed to enable and encourage self-sufficiency, participation and collaboration. Digital Inclusion must evolve as technology advances. Digital Inclusion requires intentional strategies and investments to reduce and eliminate historical, institutional and structural barriers to access and use technology. (Source).
Open and ethical service standards	"Open Standards" are standards made available to the general public and are developed and maintained via a collaborative and consensus driven process, while ethical standards refer to the core values and responsible behaviour embedded within the civil service work. These could set values such as Integrity, Accountability, Responsibility, Trustworthiness.

Transparency	Digital transparency refers here to government organizations relying on digital technologies and networks to become more transparent. Digital transparency is often viewed as an effective and low-cost way to create insights into government operations and decisions. Three characteristics are common to the different concepts of transparency: i) the need for the availability of the information in a timely manner; ii) the quality of the information disclosed, understood as precise and relevant; and iii)the accessibility to the information (Gandía et al., 2016). Other understandings: Transparency refers to an environment in which the objectives of policy, its legal, institutional, and economic framework, policy decisions and their rationale, data and information related to monetary and financial policies, and the terms of agencies' accountability, are provided to the public in a comprehensible, accessible, and timely manner (OECD). Transparency denotes a state of affairs in which the participants in the investment process are able to obtain sufficient information from each other in order to make informed decisions and meet obligations and commitments. As such, it may denote both an obligation and a requirement on the part of all participants in the investment process (UNCTAD). It refers to the degree to which information is available to outsiders that enables them to have informed voice in decisions and/or to assess the decisions made by insiders (Florini, 2007)
Public Accountability	Accountability in public administration is usually understood as the obligation of government officials to answer for performance to some legitimate authority (Gregory, 2017). Other understandings: The basic notion of accountability points to a condition of having to answer to an individual or body for one's actions. Government is held to account by someone (in the name of the public) for the way it uses its discretion and spends tax money. Accountability is the price government has to pay for exercising its authority (Willems, 2000). How the public sector supports public trust and confidence, and the role of public accountability in doing that, is not well understood. Although a lot of theory exists, there are few agreed concepts, frameworks, or guidance (Source).
Algorithmic Fairness	This term presents a counterpoint to the common belief that using an automated algorithm makes decisions more objective or fair, since data injected into the models are biased (Pessach & Shmuelli, 2020). Fairness is therefore the absence of any bias based on an individual's inherent or acquired characteristics that are irrelevant in the particular context of decision-making (Chouldechova, 2017). In this case, an algorithm would be fair, according to Saxena et al. (2018), when accomplishing these three requisites: treating similar individuals similarly, never favor a worse individual over a better one, and calibrated fairness as selection of individuals in proportion to their merit.
Digital Autonomy	"Digital Autonomy refers to the City's ability to develop, maintain and control the selection, use and design of its digital infrastructure to deliver public services and advance the public interest, as informed by legislation and community consultation" (City of Toronto, 2021). Other understandings: Related to this term is the Declaration of Digital Autonomy. Away from a governance framework, this statement shows the importance of this autonomy under the principles of service to those who are affected by technology, informed consent, citizen empowerment and collective digital action, and privacy protection.

Digital Human rights	Digital human rights are human rights as they exist in online and digital spaces. Digital technologies have the potential to advocate, defend and exercise human rights, but they can also be used to suppress, limit and violate human rights. Existing human rights treaties were signed in a pre-digital era, but online violations can today lead to offline abuses and, as highlighted by the UN Secretary-General, human rights exist online as they do offline and have to be respected in full. Of particular concern to the UN are data protection and privacy, digital identity, surveillance technologies including facial recognition and online harassment. In these areas, technlogies are increasingly being used to violate and erode human rights, deepen inequalities and exacerbate existing discrimination, especially of people who are already vulnerable or left behind.
Data equity	It refers to the consideration, through an equity lens, of the ways in which data is collected, analyzed, interpreted, and distributed. It underscores marginalized communities' unequal opportunities to access data and, at times, their harm from data's misuse. It raises the issue of data sovereignty, and the democratization of data. And data equity pushes us to consider the ways that data can reinforce stereotypes, exacerbate problems like racial bias, or otherwise undermine social justice. Other terms related: "Data justice," a term that at times is used interchangeably or in close relation to "data equity," has been tied to the ethics of personal data privacy, big data, and decision making that results from the "datafication" of modern society (Taylor, 2017). But it is also used to encompass the complex meanings that data equity captures (Denich et al., 2017), including concerns regarding power and privilege, knowledge equity, and the ways that harmful decision making may be justified or maintained through data (Source). Another conceptualization of "data justice is presented as a three-strand approach: one addressing the ways in which data used for governance can support power asymmetries, another focusing on the ways in which data technologies can provide greater distributive justice through making the poor visible (Heeks and Renken, 2016) and another that is interested in how practices of dataveillance can impact on the work of social justice organisations" (Taylor, 2017).
Security of person in digital sphere	It refers to the protection of personal data from any unauthorized third-party access or malicious attacks and exploitation of data. It is set up to protect personal data using different methods and techniques to ensure data privacy (Source).
Privacy of personal sphere	The presumption that individuals should have an area of autonomous development, interaction and liberty, a "private sphere" with or without interaction with others, free from State intervention and from excessive unsolicited intervention by other uninvited individuals (Lester and Pannick, 2004). The right to privacy is also the ability of individuals to determine who holds information about them and how that information is used (UNHRC, 2013). Other terms related: Another interesting term that arose from the latter conception is the "personal information sphere" (Eskens, 2020). The personal information sphere is the domain where people can determine for themselves how they interact with information about the world and how other people may interact with information about themselves.

Effective remedy	Having the aim of "enforcing the substance of human rights and freedoms in whatever form they might happen to be secured in the domestic legal order" (Source). Other understandings: In its 2017 report to the UN General Assembly (A/71/162), the Working Group refers to it as a human right with both procedural and substantive elements. It imposes a duty on States to respect, protect and fulfil this right, but also entails responsibility for non-State actors, including businesses. The EU Charter of Fundamental Rights defined this right as the entitlement to a fair and public hearing within a reasonable time by an independent and impartial tribunal previously established by law with the possibility of being advised, defended and represented.
Digital public good	"Digital public goods are open source software, open data, open AI models, open standards, and open content that adhere to privacy and other applicable best practices, do no harm, and are of high relevance for attainment of the UN's 2030 Sustainable Development Goals (SDGs). This definition is drawn from the UN Secretary-General's definition found in the 2020 Roadmap for Digital Cooperation and serves as the foundation of the DPG Registry" (Source).
Digital twin	A digital representation of a real-world entity or system. The implementation of a digital twin is an encapsulated software object or model that mirrors a unique physical object, process, organization, person or other abstraction. Data from multiple digital twins can be aggregated for a composite view across a number of real-world entities, such as a power plant or a city, and their related processes.
Community networks	In this bottom-up approach, internet infrastructure deployment is carried out as a private initiative by local residents or community groups. These projects have shown to be particularly successful in offering inclusive and affordable internet access at smaller, "last mile" scales.
Data, data-security and open data related terminology	E.g. Open format, open registry, algorithmic editing, privacy by design, etc.

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