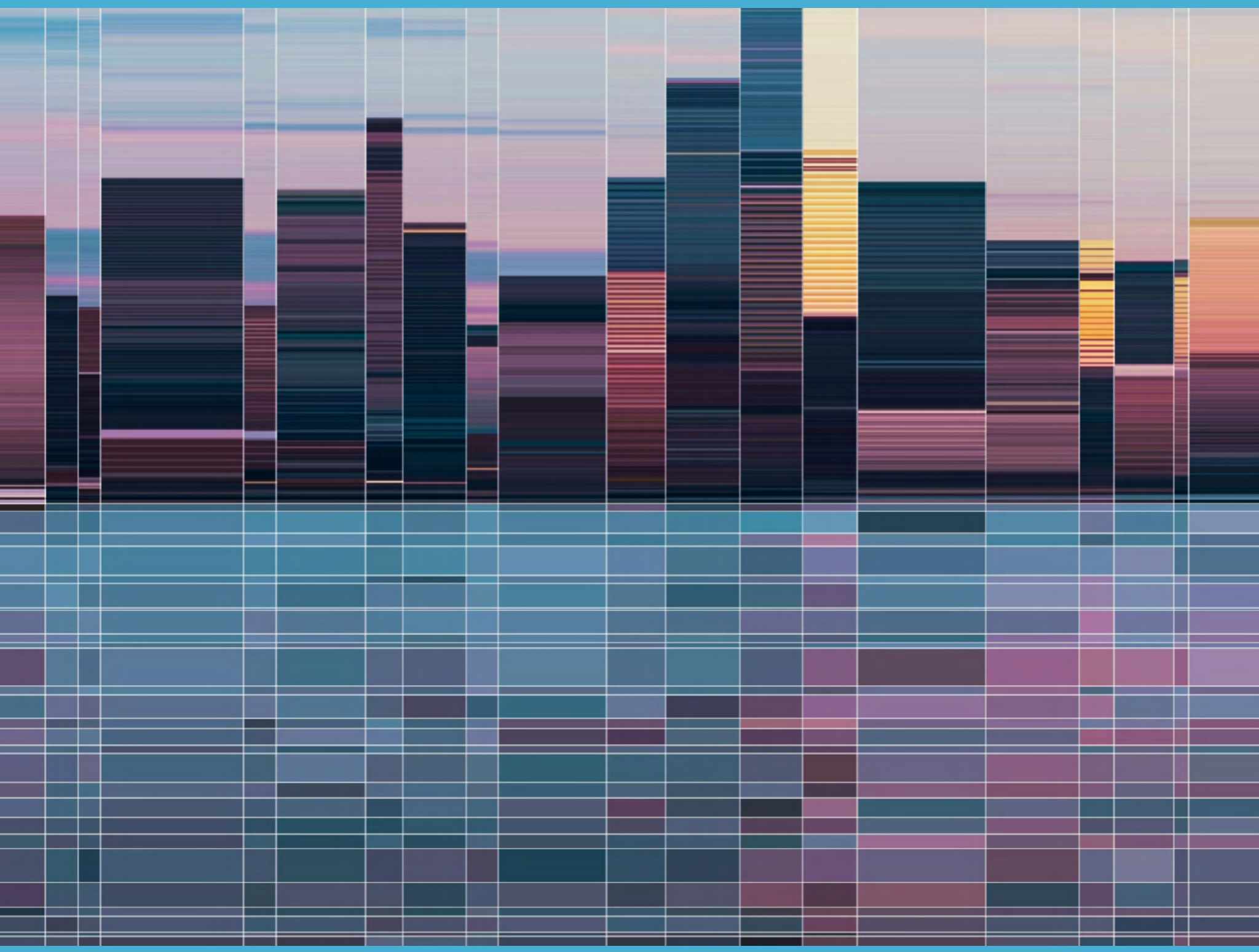
CONNECTING THE DISCONNECTED

BRIDGING THE GAP FOR DIGITAL ENGAGEMENT

POLICY PAPER 1

SEPTEMBER 2025

WeGenerate
PEOPLE-CENTRIC SUSTAINABLE NEIGHBOURHOODS



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A 2-minute introduction to WeGenerate

From planning *for* people to planning *with* people

Cities may be built for everyone, but not all neighbourhoods feel that way. Some boast modern infrastructure, abundant services, and economic opportunity, while others are left behind - derelict, outdated, and underinvested. Structural changes in the economy have deepened these divides, creating serious challenges for both residents and the city as a whole. Addressing these disparities is not just about improving a city's image; it is about fostering territorial equality and ensuring that all residents have access to the same quality of life and opportunities.In this context, urban regeneration plays a crucial role in city planning. Once predominantly focused on physical improvements to the built environment, it now considers a more integrated approach that uses social, environmental, and economic interventions to holistically support the revitalisation and uplift of disadvantaged areas. Yet, the scale and strategic nature of urban regeneration processes make them inherently complex - and not without critics. Chief among these is the risk of gentrification. While regeneration can create new economic opportunities and neighbourhood amenities in undervalued areas, it can also lead to profit-driven investments that displace low-income residents, widening inequalities instead of bridging them[1]. How can we ensure that locals benefit from processes that are set in motion in their surroundings? How can they be made aware and, most importantly, be actively engaged? And can technology play a larger role in such a context?

1 Ernesto López-Morales, definition provided as part of Session 2, UN-Habitat, "Urban Regeneration as a tool for Inclusive and Sustainable Recovery," UN-Habitat, 2022

Moving from individual success stories to a strategic framework

Across Europe, cities are embracing innovative approaches to urban planning and regeneration. From participatory neighbourhood management in Berlin (DE) to inclusive budgetary models in Cascais (PT), Tartu (EE), and Paris (FR), municipalities are actively experimenting with new engagement methods. Some, like Lisbon (PT), have leveraged the **Community-Led Local Development (CLLD)**[1] tool to fund participatory local development, proving to be an effective way to involve residents in shaping neighbourhood investments. However, there is still no common approach to expand successful models and turn one-off projects into lasting practices. The WeGenerate project, which advocates for an innovative regeneration model at the district level, encourages municipalities and their partners to go beyond business as usual to identify, amplify, and accelerate state-of-the-art practices. Four Demo Cities will pave the way, all selected to represent a wide range of emerging urban regeneration trends that also capture broad geographical coverage and diverse stakeholders. These cities will contribute to crafting a new way of thinking, through their urban regeneration projects. In addition, five Fellow Cities will be active and early adopters of new approaches and techniques to replicate solutions developed through the project. State-of-the-art practices will be identified and accelerated across four innovation clusters: **integrated planning and digitalisation, social innovation and participatory actions, energy in the built environment, and sustainable mobility**. The WeGenerate Policy Papers will present the project results, latest findings, and trends, highlighting their relevance to EU policy processes and local practices. They will focus on topics from the four innovation clusters and provide actionable recommendations to local and national governments on how to best support urban regeneration with the people.

1 Eddy Adams, Peter Ramsden, URBACT Knowledge Hub, "Reflections on Citizen Participation in Europe's Cities", URBACT III, January 2019

STATE OF PLAY
EU Digital Policies Landscape

Understanding the wider EU digital policy landscape is essential for positioning WeGenerate within Europe's broader transformation: these policies shape the tools, standards, and opportunities available for municipalities pursuing people-centred urban regeneration

The European Union is driving a transformative digital agenda under the ***"Europe fit for the Digital Age" strategy***, aiming with its ***Digital Compass*** to create a Digital Single Market that benefits citizens, businesses, and public administrations alike. For cities, this framework provides both guidance and opportunity: it combines regulatory safeguards, citizen empowerment, and public service innovation within a human-centric, sustainable, and inclusive digital vision. At the core of this transformation are two overarching policy anchors. The ***Digital Decade Policy Programme 2030*** sets binding targets for digital skills, secure infrastructure, and online public services, offering municipalities clear benchmarks for local implementation. Complementing this, the ***European Declaration on Digital Rights and Principles*** establishes privacy, inclusion, accessibility, and sustainability as non-negotiable foundations for all digital initiatives, providing cities with guiding principles for citizen-centred design.

Regulatory Cornerstones for Urban Digital Ecosystems

Several EU regulations establish the legal backbone for cities seeking to innovate responsibly. ***The Digital Services Act (DSA)*** ensures safer online environments by tackling illegal content, disinformation, and systemic risks, while requiring transparency and accountability from digital platforms. In parallel, the ***Digital Markets Act (DMA)*** promotes fair competition by regulating large "gatekeeper" platforms, helping local businesses and civic tech startups thrive. As most recent development, the ***Artificial Intelligence Act*** (AI Act), turning fully applicable in 2026, introduces a risk-based framework for safe, ethical AI deployment, balancing innovation with human oversight - particularly relevant for smart city technologies and automated public services. More generally, the ***Data Act*** encourages data sharing among businesses, citizens, and public bodies, creating opportunities for urban innovation and competitive cloud-based services. Similarly, the ***General Data Protection Regulation*** (GDPR) remains the global standard for data privacy and protection, ensuring that cities' digital initiatives respect citizen rights.

Enablers for Cross-Border & Public Service Digitalisation

Cities can leverage EU tools to enhance interoperability and streamline public services. The ***Interoperable Europe Act*** promotes co-creation and solution-sharing among public administrations. Alongside this, the ***eIDAS Regulation*** and the ***European Digital Identity Wallet*** provide secure cross-border identification, enabling seamless citizen interactions across EU cities. The ***Single Digital Gateway Regulation*** ensures citizens can access key administrative procedures online; while the Web Accessibility Directive guarantees that municipal websites and apps meet accessibility standards, supporting inclusion for all residents.

Data, Openness & Citizen Participation

EU policies also empower cities to foster open, participatory, and data-driven governance. The ***Open Data Directive*** and ***INSPIRE Directive*** with its foreseen GreenData4All program for public access to environmental information facilitate the reuse of public sector and spatial data for civic tech solutions and urban planning. As overarching policy, the ***Data Governance Act*** provides frameworks for safe and trusted data sharing. Mechanisms such as the ***European Citizens' Initiative*** and the ***European Democracy Action Plan*** offer digital channels for citizen engagement, enabling local authorities to strengthen democratic participation and fight disinformation.

Funding & Capacity Support

Multiple EU funding instruments support municipalities in implementing digital transformation. The ***Digital Europe Programme*** (DEP) invests in AI, cybersecurity, advanced digital skills, and public service digitalisation. Horizon Europe funds research and innovation projects (like WeGenerate) that address *digital civic engagement* technologies. Similarly, the ***European Regional Development Fund*** (ERDF) and ***Cohesion Policy*** finance local digitalisation and urban regeneration initiatives. Lastly, cities can become involved in ***European Digital Innovation Hubs*** together with partners from industry and academia to put innovation policies into action.

Looking Ahead

The European Union is poised to significantly enhance its digital policy landscape in the coming years. The proposed ***European Competitiveness Fund***, with an allocation of EUR 409 billion for 2028-2034, aims to bolster strategic technologies, including digital infrastructure, AI, and cybersecurity. In parallel, the next Horizon Europe programme will continue to invest heavily in digital innovation.

Additionally, the forthcoming ***Digital Fairness Act***, anticipated for proposal in 2026, seeks to address manipulative online practices, enhancing consumer protection in digital environments. The ***Digital Networks Act***, expected to be published in December 2025, will modernise the EU's electronic communications framework to support secure and reliable connectivity. The ***Quantum Act***, slated for proposal in 2026, aims to strengthen Europe's quantum ecosystem and industrial capabilities. Furthermore, the ***ApplyAI Strategy***, planned to be adopted in third quarter 2025, focuses on integrating generative AI into public administration, with pilot projects underway.

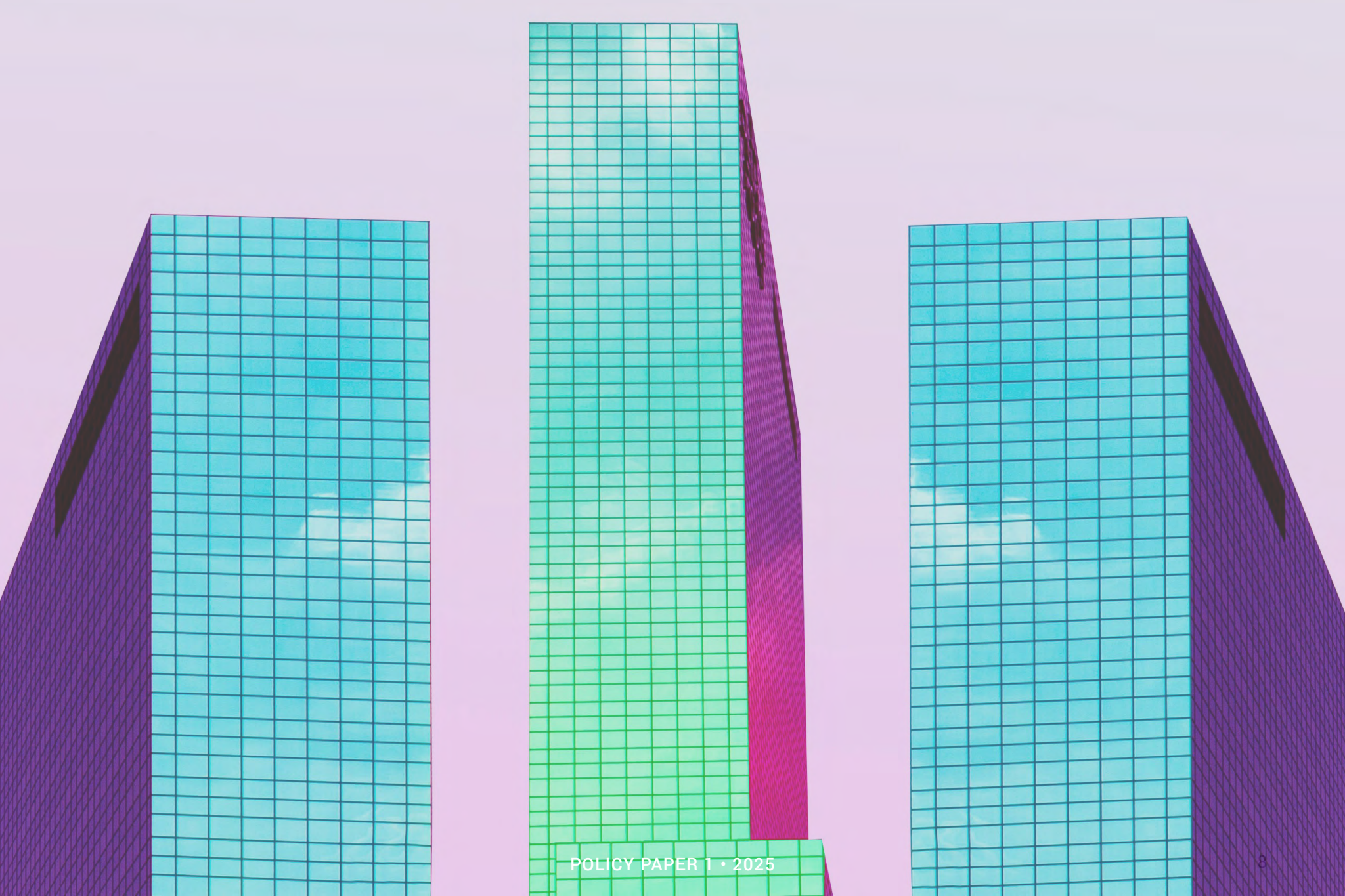
Key EU Recommendations

For municipalities across Europe, the EU digital policy landscape provides a comprehensive toolbox. From legal safeguards and interoperability standards to citizen participation mechanisms and funding support, municipalities can leverage these policies to build inclusive, innovative, and digitally empowered communities. By aligning local initiatives with EU frameworks, municipalities can ensure that their digital transformation is responsible, rights-based, and participatory, while remaining at the forefront of the Digital Single Market. Looking ahead, the EU is already preparing the next wave of digital policies and funding programmes for the post-2027 period, underlining that digital transformation will remain a central driver of Europe's long-term strategy.

To leverage the EU digital policy landscape effectively, municipalities should align local digital projects with the Digital Decade targets and the European Declaration on Digital Rights, ensuring compliance, funding eligibility, and cross-border collaboration. Citizen-centric design should guide all initiatives, embedding inclusion, accessibility, privacy, and sustainability, while engaging residents through participatory tools.

Interoperability and data sharing must be prioritised using frameworks such as the Interoperable Europe Act, Data Act, and Data Governance Act to create open, secure, and reusable datasets. Building staff digital skills and AI literacy, leveraging programs like the Digital Europe Programme and European Digital Innovation Hubs, is essential, as is strategic use of EU funding instruments and partnerships with academia, industry, and civic tech communities. Finally, municipalities should monitor and evaluate the impact of digital initiatives, sharing best practices with other municipalities to foster inclusive, innovative, and digitally empowered urban communities.

Together, these policies provide municipalities with a comprehensive toolbox to advance digital transformation in line with EU values. For WeGenerate, aligning with this evolving framework ensures that local regeneration efforts not only benefit from European guidance and funding but also contribute to shaping a fairer, more inclusive digital future for all.



GLOSSARY

Digital literacy: The ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital technologies. It includes competencies that are variously referred to as computer literacy, ICT literacy, information literacy, and *media literacy.*

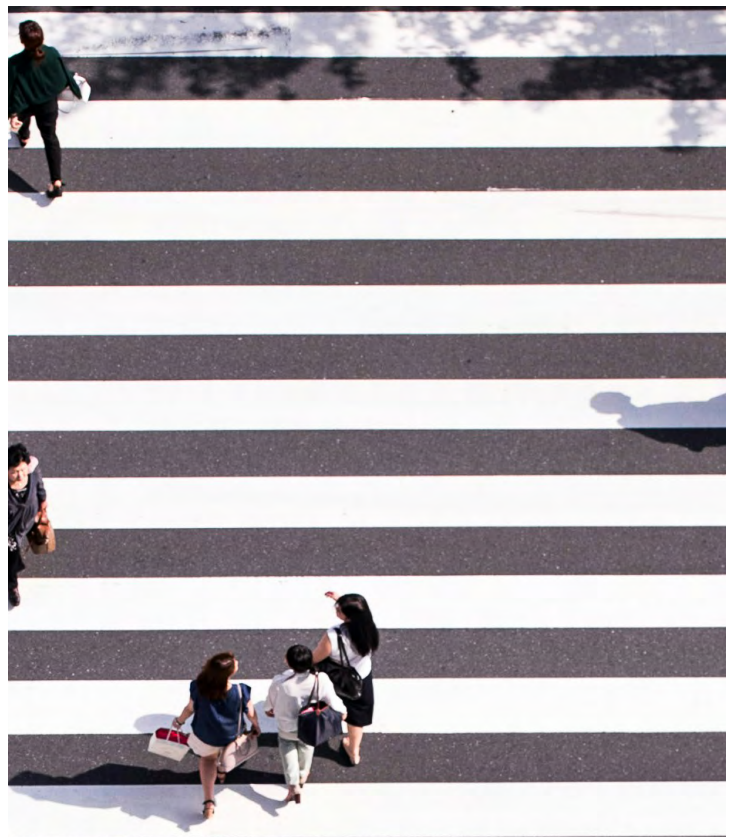
Digital participatory tools: digital applications or systems specifically designed to enhance e-participation[1].

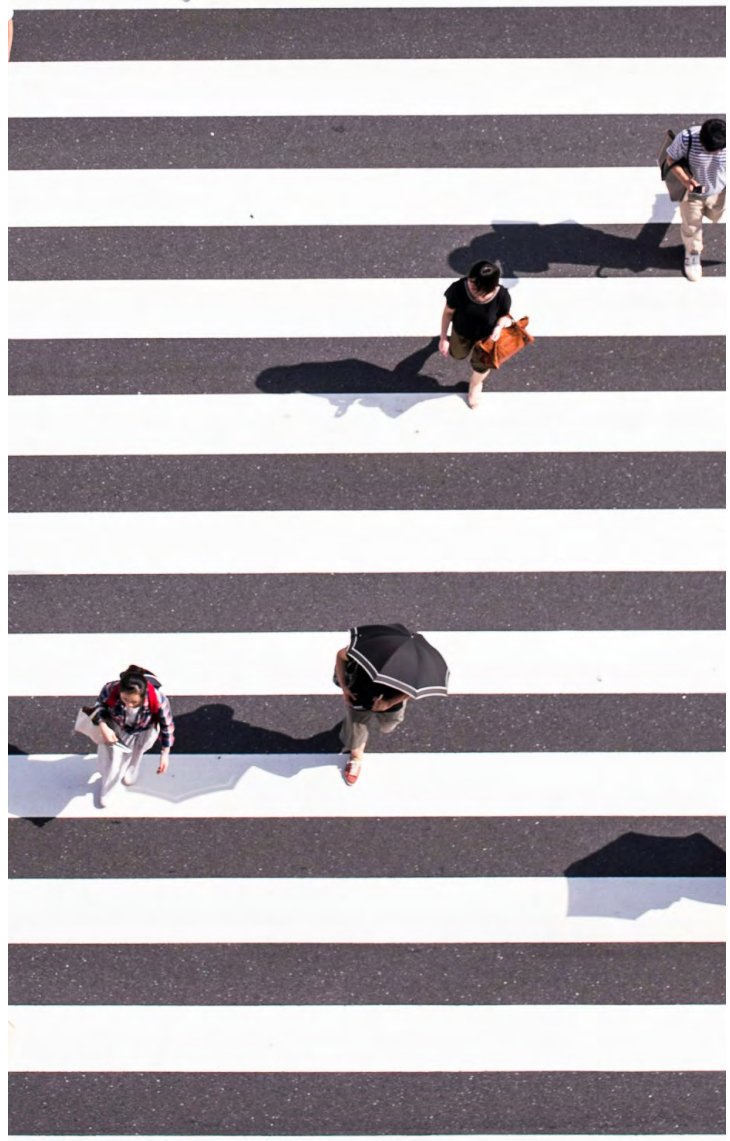
Digital twins: A digital twin is a digital representation of real-world entities or processes. Digital twins use real-time and historical data to represent the past and present and numerical models to simulate *possible future scenarios* .

E-participation: Electronic participation (hereafter, „e-participation“) refers to the extension and transformation of citizen participation in policymaking processes through information and communications technologies (ICTs)[2].

Vulnerable groups: *Vulnerable groups* are those who are more susceptible to discrimination or drawbacks due to their geographic location, sex, age, ability, citizenship, sexual orientation, and ethnicity, among other factors. Children, elderly, those with reduced mobility, migrants, and LGBTQIA+ individuals are some examples, yet vulnerability differs across contexts and can be compounded through overlapping characteristics.

In urban planning, **vulnerable groups** are populations that face *heightened risks* due to social, economic, or environmental disadvantages, which can be exacerbated by urban development and regeneration interventions. These groups often lack the resources or political influence to effectively adapt to changes in their environment.





1 Shin, Bokyong, et al. „A systematic analysis of digital tools for citizen participation.“ Government Information Quarterly 41.3 (2024): 101954
2 Ibid 3.

Summary for Decision Makers

This Policy Paper explores the role of digital engagment in urban planning and regeneration, focusing on how technology can enhance citizen participation, especially for vulnerable groups. Cities are increasingly leveraging rapidly evolving digital technologies - such as networked sensors, artificial intelligence (AI), virtual and augmented reality (VR/AR), and digital twins - to improve urban planning and decision-making. These technologies differ in their maturity requirements: While VR/AR and sensor-based tools can directly engage citizens through interactive visualisation and data collection, AI and Urban Digital Twins require more complex design, integration, and governance to ensure meaningful participation. The European Union's Digital Decade and Digital Europe Programme 2030, with over EUR 48 billion allocated for digitisation, highlights the growing investment in these technologies.

However, digital tools present both opportunities and challenges. While they offer new ways to engage citizens and facilitate more inclusive participation, they also risk excluding individuals without reliable internet access, digital literacy, or trust in online platforms, potentially reinforcing existing inequalities. The paper focuses on three key levels of e-participation: **e-information, e-consultation, and e-decision-making,** particularly regarding vulnerable populations. It highlights two main challenges: (1) the limited impact of digital tools on meaningful decision-making, and (2) the digital divide that affects 42% of the EU's adult population who lack basic digital skills.

To address these challenges, city practitioners are encouraged to critically assess whether digital tools are the right solution for engagement, ensuring they reduce inequalities rather than exacerbate them. The paper provides recommendations on designing digital engagement strategies that are **accessible, inclusive, and impactful**. Key insights are drawn from interviews with staff from municipalities, universities, and public service institutions in cities across Europe.

The paper outlines a strategic approach to successful digital engagement:

1. Understand Your Engagement Landscape: Assess existing engagement methods, identify gaps, and ensure that digital tools address real needs. This key step will help clarify the purpose of the tool and provide insights on the target groups, to tailor the engagement to their specific barriers and needs.

2. Develop the Digital Tool Collaboratively: Use existing platforms, develop local partnerships, and test tools iteratively with target groups to ensure usability.

3. Activate and Ensure Usage: Address barriers to accessibility, combine digital and analogue methods, and make the engagement process fun and relatable to encourage participation. This also involves an impact assessment to evaluate the actual impact and added value of using the tool.

Ultimately, digital tools should not be seen as the end goal but as a means to empower communities, bridge the digital divide, and foster inclusive participation in urban regeneration. By balancing digital innovation with traditional engagement methods, municipalities can ensure that no one is left behind in the digital transformation.

DIGITAL TOOLS FOR CITIZEN ENGAGEMENT DECISION PATHWAY

First things first, **understand** your engagement landscape

Assess what you have: Understand past engagement experiences and internal capacity

Clarify the purpose: What am I trying to achieve with a tool, information sharing/ discussion/decision-making?

Know your audience: Who are the vulnerable groups to engage with? What are their barriers to engagte/specific needs?

Can the barriers be bridged by adapting current/analogue engagement methods?

Yes. Focus on exploring analogue engagement.

Reconsider?

No, or only partially

Develope the tool **collaboratively**

Build on assets: Mobilise existing well-known tools and communication channels

Develop local partnerships: Harness local capacity, skils and knowledge

Test, test, test: build the tool with vulnerable groups, organise workshops/focus group and feedback sessions

Activate your tool, make sure it is used

Eliminate barriers: Develop broader tech literacy and accessibility support

Combine analogue and digital engagement methods

Make it fun, relatable and accessible: organise evetns where people can meet, live-use the tool etc.

Was it successful?

No.

Yes, bingo!

ADAPT, TEST, IMPROVE!

Summary for City Practicioners

Technology is both an opportunity and an inevitable evolution that cities must adapt to. Networked sensors, artificial intelligence (AI), virtual and augmented reality (VR and AR), and digital twins are quickly emerging as tools within reach for local governments to better understand, govern, and engage with their places and people. The EU Digital Decade and Digital Europe Programme 2030 reflects this shift, with over EUR 48 billion allocated to digitisation, digital capacity, skills development, and public service modernisation.

In this rapidly evolving landscape, digital tools are increasingly valued for their ability to enhance ***urban planning decision-making processes*** and make them more inclusive for non-experts and citizens. Unlike traditional analogue methods like town halls, info stands at public events, and surveys, they can expand participation[1] by overcoming barriers related to presence, accessibility, and engagement - challenges that disproportionately affect socioeconomically disadvantaged groups[2]. However, digital tools also come with their own limitations, as they can exclude those without reliable internet access, digital literacy, or trust in online platforms, potentially reinforcing existing inequalities.

This Policy Paper focuses specifically on **digital participatory tools -** applications or systems specifically designed to enhance e-participation — and vulnerable groups through three key levels[3]: **e-information, e-consultation, and e-decision-making,** aligning with Sherry Arnstein's Ladder of Participation. This work continues to shape urban practices today, as exemplified by the New European Bauhaus[4] movement, which draws on the ladder to evaluate stakeholder involvement and foster effective engagement and inclusivity.

Researchers identify two key challenges regarding how digital participatory tools can meaningfully engage with vulnerable groups:

1. Limited impact on decision-making (*see the image on the next page, particularly the third level of the ladder*): Disadvantaged residents often face barriers to meaningful participation in urban regeneration processes. Too frequently, they are involved only in superficial consultation processes, leading to disengagement and scepticism[5]. While digital tools can improve residents' access to information and offer opportunities for wider consultation, studies show they struggle to meaningfully involve citizens in the decision-making process, showing the current limits of e-decision-making[6]

1 T.-P. Ertiö, "Participatory apps for urban planning—Space for improvement," Planning Practice & Research, vol. 30, no. 3, pp. 303–321, May 2015.

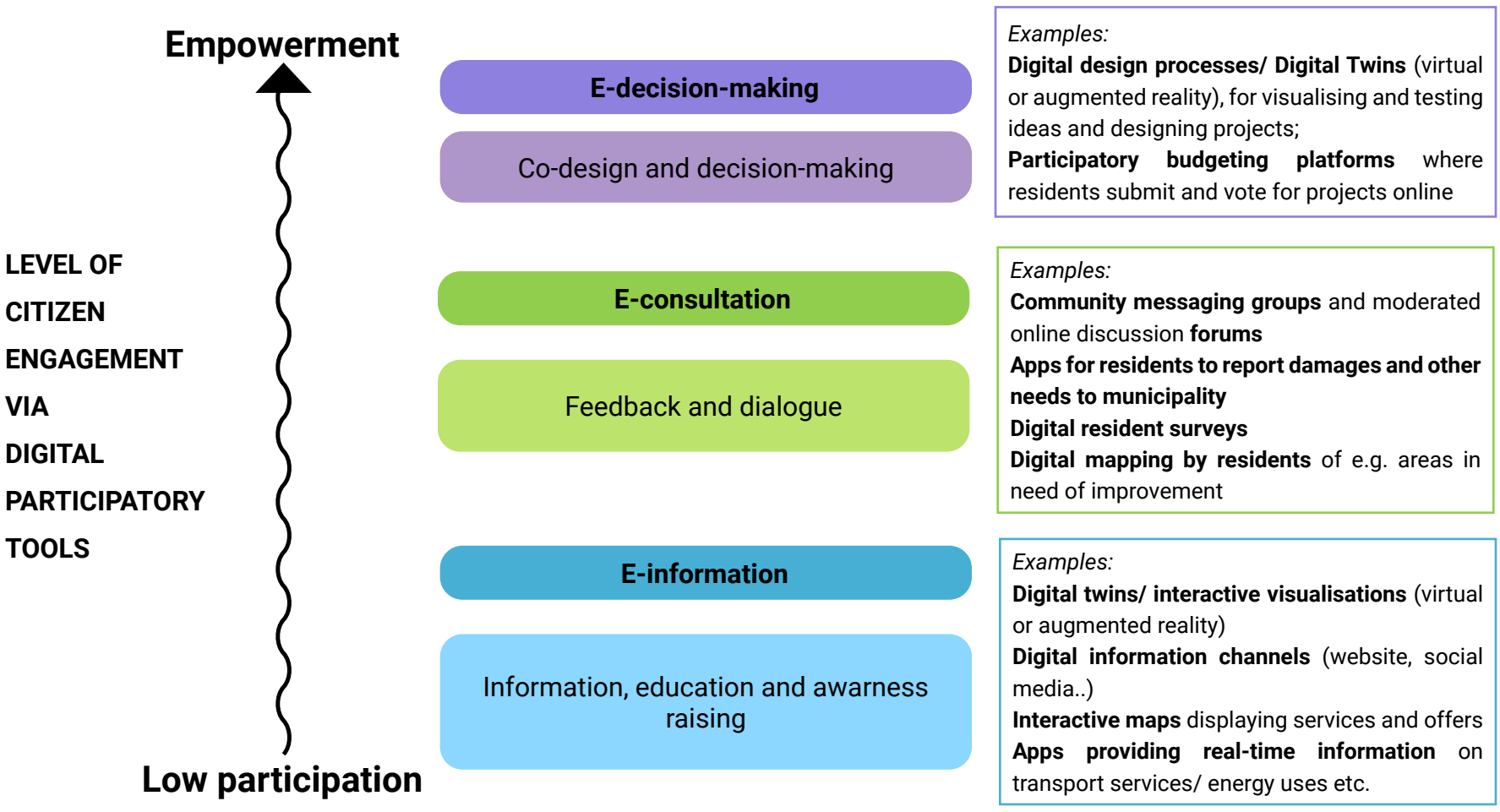
2 Falco, E. (2016). Digital community planning: The open-source way to the top of Arnstein's ladder. International Journal of E-Planning Research, 5(2), 1-22

3 Shin, Bokyong, et al. „A systematic analysis of digital tools for citizen participation." Government Information Quarterly 41.3 (2024): 101954

4 New European Bauhaus, European Union, and NEB toolbox - for public authorities

5 Ferilli, Guido, Pier Luigi Sacco, and Giorgio Tavano Blessi. „Beyond the rhetoric of participation: New challenges and prospects for inclusive urban regeneration." City, Culture and Society 7.2 (2016): 95-100.

6 Aichholzer, Georg, and Gloria Rose. „Experience with digital tools in different types of e-participation." European E-democracy in practice (2020): 93-140.



2. The digital divide – 42% of the EU's adult population lack basic digital skills[1], and low-skilled adults are also particularly disconnected from political processes[2]. This divide - rooted in literacy technology access, and affordability disparities[3] disproportionately affects already vulnerable groups. This variation in internet usage across countries and demographic groups highlights the strength of the WeGenerate project, which includes Demo Cities representing both low- and high-internet-use populations.

In Europe, older adults, women, and those with lower educational attainment are more likely to be Non-Users, particularly in countries such as Romania, Greece, Bulgaria, and Portugal, whereas younger, more educated individuals in Northern and Western Europe, such as Finland, are more often Advanced Users[4]. By engaging residents in Portugal (lower internet access rates) and Finland (higher access rates), the project allows city practitioners to test and compare engagement approaches under different digital maturity contexts. These differences provide a solid evidence base for tailoring strategies to local digital realities.

Given these challenges, city practitioners must critically assess whether digital engagement is the right solution for their own context, to ensure that they reduce inequalities rather than reinforce them.

This paper aims to **help city practitioners design digital engagement strategies that are both accessible and impactful**, shifting the focus from digital tools as a starting point, but rather as a means to achieve more impact – through inclusive and meaningful engagement processes. The results are derived from interviews with staff from municipalities, universities, and other relevant public service institutions in the following cities: C**esena (IT), Cascais (PT), Bucharest (RO), Tampere (FI), and Szombathely (HU).**

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1 https://cordis.europa.eu/article/id/445590-transforming-digital-mobility-from-a-privilege-into-a-right

2 OECD (2024), Do Adults Have the Skills They Need to Thrive in a Changing World?: Survey of Adult Skills 2023, OECD Skills Studies, OECD Publishing, Paris, https://doi.org/10.1787/b263dc5d-en.

3 Bricout, J., Baker, P. M., Moon, N. W., & Sharma, B. (2020). Exploring the smart future of participation: Community, inclusivity, and people with disabilities. International Journal of E-Planning Research (IJEPR), 10(2), 94-108.

4 https://link.springer.com/article/10.1007/s11205-024-03452-2

FIRST THINGS FIRST: UNDERSTAND YOUR ENGAGEMENT LANDSCAPE

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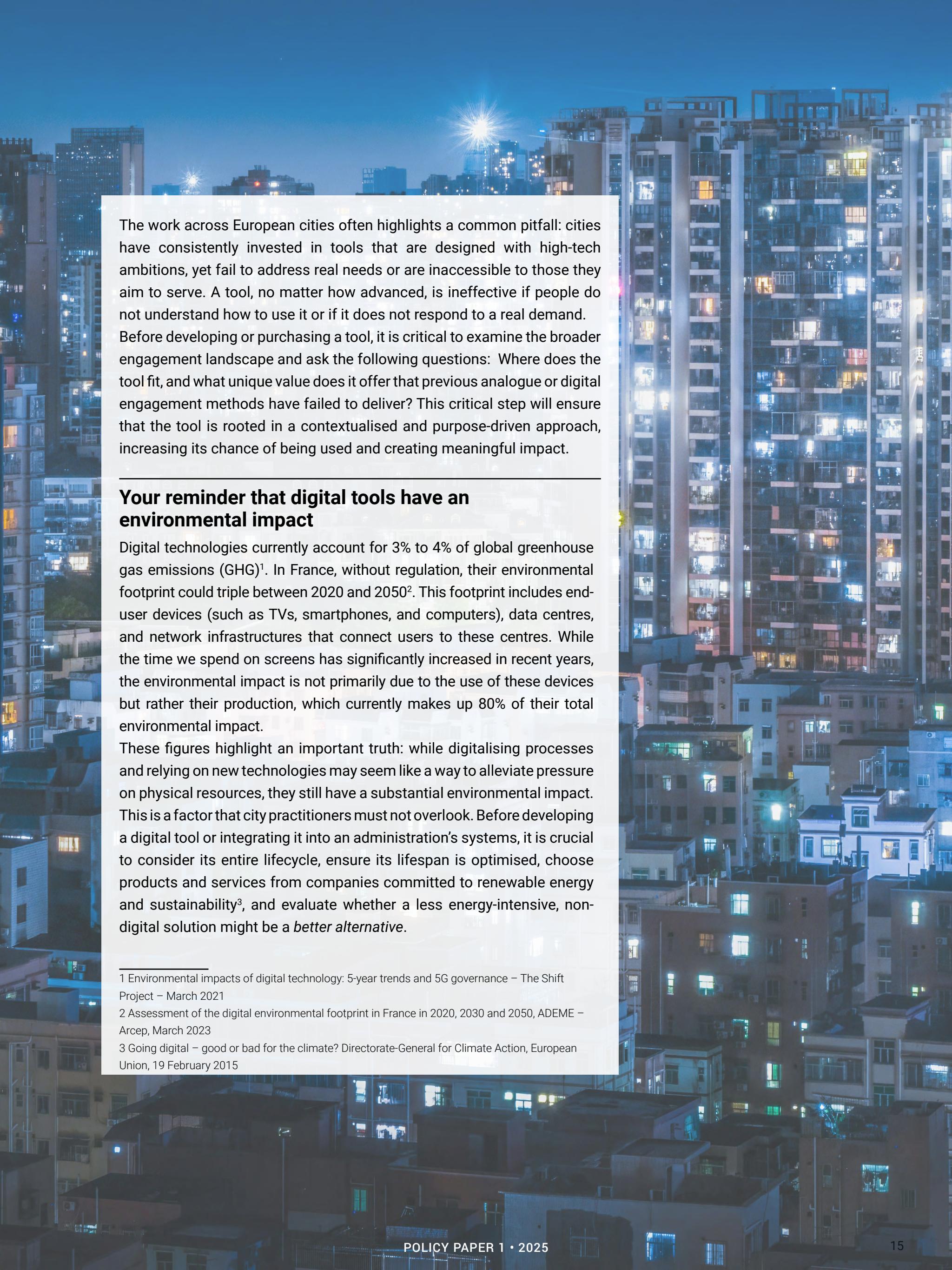

The work across European cities often highlights a common pitfall: cities have consistently invested in tools that are designed with high-tech ambitions, yet fail to address real needs or are inaccessible to those they aim to serve. A tool, no matter how advanced, is ineffective if people do not understand how to use it or if it does not respond to a real demand.
Before developing or purchasing a tool, it is critical to examine the broader engagement landscape and ask the following questions: Where does the tool fit, and what unique value does it offer that previous analogue or digital engagement methods have failed to deliver? This critical step will ensure that the tool is rooted in a contextualised and purpose-driven approach, increasing its chance of being used and creating meaningful impact.

Your reminder that digital tools have an environmental impact

Digital technologies currently account for 3% to 4% of global greenhouse gas emissions (GHG)[1]. In France, without regulation, their environmental footprint could triple between 2020 and 2050[2]. This footprint includes end-user devices (such as TVs, smartphones, and computers), data centres, and network infrastructures that connect users to these centres. While the time we spend on screens has significantly increased in recent years, the environmental impact is not primarily due to the use of these devices but rather their production, which currently makes up 80% of their total environmental impact.
These figures highlight an important truth: while digitalising processes and relying on new technologies may seem like a way to alleviate pressure on physical resources, they still have a substantial environmental impact. This is a factor that city practitioners must not overlook. Before developing a digital tool or integrating it into an administration's systems, it is crucial to consider its entire lifecycle, ensure its lifespan is optimised, choose products and services from companies committed to renewable energy and sustainability[3], and evaluate whether a less energy-intensive, non-digital solution might be a *better alternative*.

1 Environmental impacts of digital technology: 5-year trends and 5G governance – The Shift Project – March 2021
2 Assessment of the digital environmental footprint in France in 2020, 2030 and 2050, ADEME – Arcep, March 2023
3 Going digital – good or bad for the climate? Directorate-General for Climate Action, European Union, 19 February 2015

1. Assess what exists: Leverage existing assets and recognise constraints

A comprehensive review of past engagement initiatives, both digital and analogue, is a crucial first step in developing effective digital tools. What initiatives succeeded, and which fell short? Identifying key success factors and common barriers early on will provide critical insights to shape the development of new digital engagement strategies.

Equally important is assessing internal capacity. The right people with the right skills are needed inside any municipality looking to use digital engagement tools. This includes, among others, staff who:

- **can develop and maintain tools – programming, database management, hosting, etc.;**
- **are proficient social media users on all platforms;**
- **are good at liaising between communications and IT departments;**
- **and who are working in departments to which the topic of the tool is relevant.**

At a minimum, city practitioners should be equipped to maintain an accessible, up-to-date website and an interactive social media presence that connects with residents through the platforms they use daily. Training can be organised for more advanced skills, such as online facilitation, moderation, and platform management. It remains important to note that the digital landscape evolves quickly. Internal up-skilling efforts must be refreshed regularly, so that staff can be aware of the latest best practices and technology trends. With a strong foundation, city practitioners can then expand into more sophisticated digital engagement methods, such as participatory budgeting, interactive town halls, and online forums. This step will also help city practitioners determine whether they need to partner locally to increase their internal capacity and upgrade their skills.

2. Clarify the purpose: Define what your tool aims to achieve and why it matters

Once city practitioners have reviewed engagement strategies, they will be better equipped to define the scope of their digital tool. We recommend considering the following questions:

Citizen Engagement Output: What is the primary goal of this engagement? City practitioners can use the three levels of e-participation to set clear objectives - whether to raise awareness and inform residents, collect feedback and data, or actively involve citizens in decision-making.
Geographical Scope: Should the tool serve the entire city or target specific areas? Should it integrate geographic features to enhance usability and relevance?
Timing and Adaptability: Is the tool designed for long-term use, or is it a temporary solution for a specific project phase? Does it need to be adaptable for future initiatives?

By answering these questions, city practitioners can develop a concise mission statement to guide the tool's design and development, ensuring alignment with engagement goals and capacities. This statement should serve as a reference point throughout development, allowing for consultation, refinement, and strategic decision-making at every stage.

3. Know your audience: Put people at the centre

Vulnerable groups tend to have fundamental challenges that make their everyday life more difficult and limit their ability to fully participate in civic activities. Particularly for intensive co-design activities, many disadvantaged people lack time, energy, or expertise to contribute. Similarly, youth are reportedly less interested in traditional civic processes than other age groups, so their engagement entry point and communication style may require a very different approach.

While digital solutions can provide opportunities to alleviate these barriers, a lack of digital literacy - and access to digital infrastructure, like phones and affordable internet - is still very much a reality for vulnerable groups, even for digital natives. Develop the tools around people's existing skills, needs, and barriers before presuming skill gaps need to be bridged later. Take an ***user-centric approach*** and employ co-creation and consultation with citizens and the tool's end-users to avoid efforts which eventually do not satisfy user needs.

"The more complicated the tool, the less engagement you will receive."

City practitioner from Bucharest (RO)

To address these barriers, it is critical to know which groups of people are currently over or under-represented in digital engagement activities. Barriers to engagement and digital solutions will vary depending on users, but the city practitioners should not rely on broad assumptions. When city practitioners know who is or is not being reached - and why - they can adjust their strategies accordingly to be truly inclusive.

EXAMPLES FROM THE CITIES:

In one case, older groups were vastly underrepresented in an online participatory budgeting scheme (City of Cascais), while in another, middle-aged, educated women were overrepresented in online survey responses (City of Tampere)

For example, people with reduced mobility or mental health challenges are less able to, or comfortable with, leaving their homes to physically join events and workshops. LGBTQIA+ youth also ***feel safer and supported in online spaces*** rather than offline ones.

Moderated virtual Communities of Practice - online groups where people with common interests share knowledge, build skills, and solve problems together - can be one way to connect and engage such groups[1]. Once city practitioners have a clear understanding of their engagement landscape, the following questions are key: Are digital tools the right solution? When considering objectives, the team's capacity, and the conditions citizens face in engagement, what specific advantages of digital tools can enhance participation and effectiveness?

If city practitioners choose to develop a digital tool, their next step should be to keep people at the centre, ideally by co-developing the tool with them.

1 Bricout, J., Baker, P. M., Moon, N. W., & Sharma, B. (2020). Exploring the smart future of participation: Community, inclusivity, and people with disabilities. International Journal of E-Planning Research (IJEPR), 10(2), 94-108.

DEVELOPE THE TOOL COLLABORATIVELY

1. Build on assets: Use familiar platforms and websites

Developing single-purpose apps is not recommended, since they mainly reach people within a small, educated, and curious circle. Few people genuinely want another app (e.g., for encouraging pro-environmental behaviours), especially less digitally literate groups who do not know how to use them.

The mobile app industry is highly competitive, with many apps not able to retain users. 25% of apps are used only once after being downloaded, with 71% of users giving up on using an app after downloading it. Instead, central municipal portals that connect to established apps and services should be prioritised. Such digital hubs are more practical for citizens as a one-stop shop to easily access city news and information, essential services, and connections to their community. One such example is FixCascais, offered by the city of Cascais, and accessible both through the municipal portal and as a mobile app, allowing residents and visitors to report issues like damaged sidewalks or misplaced traffic signs. By linking it to existing digital infrastructure, the platform maximizes reach and ensures citizen contributions are efficiently integrated into municipal maintenance workflows.

Secondly, as mentioned, it is important to access harder-to-reach groups through channels in which they are already active (e.g., messaging groups, social media platforms, possibly the municipality's central portal). This also requires engagement mechanisms and relevant material that is crafted by content creators that speak to the interests and needs of the target groups. In brief, it is better to prioritise quality content and focused engagement on existing platforms over developing new stand-alone tools that are less likely to be used by and benefit vulnerable groups.

2. Develop local partnerships: Harness knowledge and skills from local allies

Municipalities of all sizes can benefit from creating long-term local partnerships to provide external expertise, improve local knowledge, and develop capacity for digital engagement. For example, students in communications programmes can help create content for social media or promote digital engagement platforms among peers as part of a long-term practical curriculum.

CITY EXAMPLE:

Tampere is testing a digital twin to get ideas and feedback to improve public urban spaces in the city centre. They are partnering with a local NGO to specifically involve young people and international students.

Civic-tech companies are already ***partnering with municipalities*** to provide platforms that are outside the city's ability to develop themselves. Local NGOs and community leaders that work directly with vulnerable groups also make good partners to inform this effort. In their area, they know the people the best, including who are the most likely to get left behind and how to engage them.

3. Test, test, test: Make your design collaborative and iterative

Choose the tool according to your objectives and test early versions with the intended target groups. There can be a gap between digital tool creators and their end users, in this case, the tools tend to be overly complex and need a social reality check. Tool-testing with target groups is an important way to bring in other perspectives and realities so that the final product is more useful to its designed users.

For example, seniors' groups have been engaged to test digital health tools and provide feedback. Universal design principles - equitable, flexible, and simple use, perceptible information, and error tolerance - should be considered when designing any digital engagement tool[1].

When developing a tool, like an app or an interactive platform, simplicity is key. Desktop versions also increase accessibility for the elderly and others. For more complicated tools, allow for layered uses with different target groups. For example, a digital twin depicting an urban development area might be used for co-creation with university students and for information visualisation with less digitally literate and more vulnerable groups, like migrants, who do not have command of the local language. In other words, different uses of the same tool can cater to various needs and expertise levels, with demonstration effects (e.g. visualising changes in greenspace or energy efficiency) being more suitable to many people.

In this context, it is important to remember that emerging urban digital technologies vary in their requirements for technological maturity of users and hence their capacity to support ***participatory processes.*** Tools such as VR/AR applications and networked sensors, including dashboards, can directly involve citizens by visualising urban scenarios, collecting feedback, and enabling interactive planning experiences. In contrast, AI and urban digital twins present a higher level of complexity: their successful deployment requires sophisticated design and development, careful integration of user interactions, and robust governance to ensure that citizen inputs are accurately captured and reflected in planning outcomes.
These technologies typically target professional and research ecosystems within municipalities, requiring advanced digital maturity to support meaningful engagement. Although all four technology types contribute to urban planning and management, cities must recognise that facilitating genuine citizen participation - already challenging through analogue approaches - becomes even more demanding when integrating AI and digital twins. Properly addressing these complexities is critical for ensuring that digital tools enhance, rather than hinder, inclusive and participatory urban planning processes.

CITY EXAMPLE:
The Accessible Kadıköy project, developed in collaboration with target groups, exemplifies how co-design can improve both the accessibility and usability of digital tools. The app includes an accessibility module that provides tailored information on accessible venues and services, making it easier for residents with restricted mobility to get around the city.

1Jones, P. (2014). Situating universal design architecture: Designing with whom? Disability and Rehabilitation, 36(16), 1369–1374. doi:10.3109/09638288.2014.944274 PMID: 25066068

ACTIVATE YOUR TOOL! MAKE SURE IT IS USED

1. **Eliminate barriers:** Enable broader tech literacy and accessibility

Barriers to using the tool may include limited digital skills and access to technology. Lower-income individuals and the elderly may not have access to a computer, smartphone, or high-speed internet.

To address these challenges, city practitioners should provide free public access to the internet, as well as to technology in libraries and other public buildings, along with in-person support to ensure inclusivity. This is already being done in European cities through various fun and interactive public events and through staffed physical offices to facilitate the use of digital services and educate residents on the key points of digital tools and their usefulness. While the goal is to get everyone acquainted with digital tools, for vulnerable groups, the process starts with easy access and face-to-face assistance.

2. **Analogue plus digital**: Combine engagement methods

While digital tools increase the reach of municipalities and enable more people to participate, physical and analogue approaches remain vital. Digital engagement should be seen as complementary to analogue engagement methods (e.g., in-person discussions and meetings). Direct conversations between city practitioners and vulnerable groups help establish trust through personal connection and understanding. In-person engagement activities are still prioritised by many for increasing commitment, building social networks, and generating ideas. A good digital engagement strategy for vulnerable groups will strike a balance here.

Combining digital and analogue feedback methods (e.g., a digital questionnaire and an in-person meeting) will reduce representation bias. For example, reaching out to the elderly might involve basic digital tools like online forms, common social media channels, newsletters, and multi-media information, but still mainly rely on face-to-face interactions. Recent findings suggest that digital workshops are more accepted by younger people and are not yet optimised to include the elderly[1]. In other words, digital tools can be well-suited for information sharing with elderly and other vulnerable groups, while interactive components might be best left to in-person activities.

Efforts to introduce new tools in classrooms (e.g., simple urban modelling software) can also reach previously uninterested parents through after-school conversations. Programmes that connect eager youth with seniors go beyond teaching them how to use the internet and access online municipal services etc. – they are also shown to decrease loneliness and increase ***intergenerational connection.***

1 De Siqueira, G., Malaj, S., & Hamdani, M. (2022). Digitalization, Participation and Interaction: Towards More Inclusive Tools in Urban Design—A Literature Review. Sustainability, 14(8), 4514. https://doi.org/10.3390/su14084514

3. Make digital engagement fun: As well as relatable and clearly beneficial to users

Any form of public engagement should be fun, relatable, and clearly beneficial. However, this particularly applies to vulnerable groups who face systemic barriers to participation and whose trust in local governments can be more fragile. To draw in new faces, in-person sessions can showcase digital tools alongside games, snacks, and little gifts, for example.

“We had to design activities that could be done with a beer in one hand.”

Smart Pisek (CZ)

Events where grandchildren bring their grandparents to a game day with fun digital challenges are a low-barrier way to acquaint older generations with novel tools. Drawing on personal connections and light-hearted fun, event organisers have even been surprised by elderly peoples’ openness to technology. Furthermore, digital participation platforms can sustain user motivation by gamifying the experience to make it more entertaining. Storytelling techniques can guide people through the use of a digital tool and make it more relatable to their daily lives. For example, if a digital twin is being used to show proposed changes to a neighbourhood, a personal story of someone who recently moved to the neighbourhood can accompany the tour of the digital twin.

Digital tools are a multi-purpose and appealing way for municipalities to engage residents, but fun and relatability aside, people need to clearly see why their participation is important and how they will benefit. Benefits may include access to training, the possibility to influence plans, to build a network, and to improve their communities’ circumstances.

4. Assess your tool's impact: Monitor its actual usefulness

Any form of public engagement should be fun, relatable, and clearly beneficial. However, this particularly applies to vulnerable groups who face systemic barriers to participation and whose trust in local governments can be more fragile. To draw in new faces, in-person sessions can showcase digital tools alongside games, snacks, and little gifts, for example.

Introducing digital tools for citizen participation is only the first step; municipalities must also ensure these tools deliver real value and meaningful engagement. Regular monitoring and evaluation help cities understand how residents interact with platforms, identify barriers, and refine approaches over time. Key metrics can include usage frequency, demographic representation, types of contributions made, and qualitative feedback from participants. Beyond quantitative indicators, cities should assess whether the tool actually influences decision-making, strengthens trust between residents and local authorities, and encourages repeated engagement. Thinking about impact from the design stage ensures that evaluation is not an afterthought but an integral component of deployment, adaptation, and long-term operation, helping anticipate challenges such as underrepresentation or low engagement and design strategies to address them.

For vulnerable groups, measuring impact requires particular attention to inclusion. Elderly residents, people with low digital literacy, or those with limited internet access may not engage as actively online, even if they benefit indirectly from the tool. In these cases, combining digital analytics with surveys, interviews, or in-person check-ins can reveal insights that pure data cannot. Municipalities should track whether digital participation complements analogue engagement and whether it supports long-term civic learning, community building, and equitable influence over planning processes. Iterative improvement is essential: tools should evolve in response to user feedback and observed patterns of engagement, balancing simplicity, accessibility, and technological innovation. For example, if a digital twin or online workshop attracts initial interest but fails to sustain participation, adjustments might include gamification, personalized storytelling, or improved onboarding tutorials. By embedding a culture of ongoing evaluation and adaptation, municipalities can ensure that digital engagement tools remain not only technically functional but genuinely meaningful, empowering all residents to participate and shape their urban environment.

Conclusion

City practitioners currently using digital tools for resident engagement are learning that participatory democracy is valued and that technology enables more equal access to it. When thoughtfully implemented, digital tools can help municipalities bridge the digital divide, engage vulnerable populations, and foster inclusive civic participation. To access and engage vulnerable population groups, the cities contributing to this paper highlight the importance of combining digital innovation with traditional engagement methods, building internal municipal capacity, fostering partnerships with local stakeholders, and maintaining a focus on usability, inclusivity, and clear user benefits. City practitioners should not see the goal as digitalising processes but rather as empowering communities and ensuring that no one is left behind in the digital transformation.