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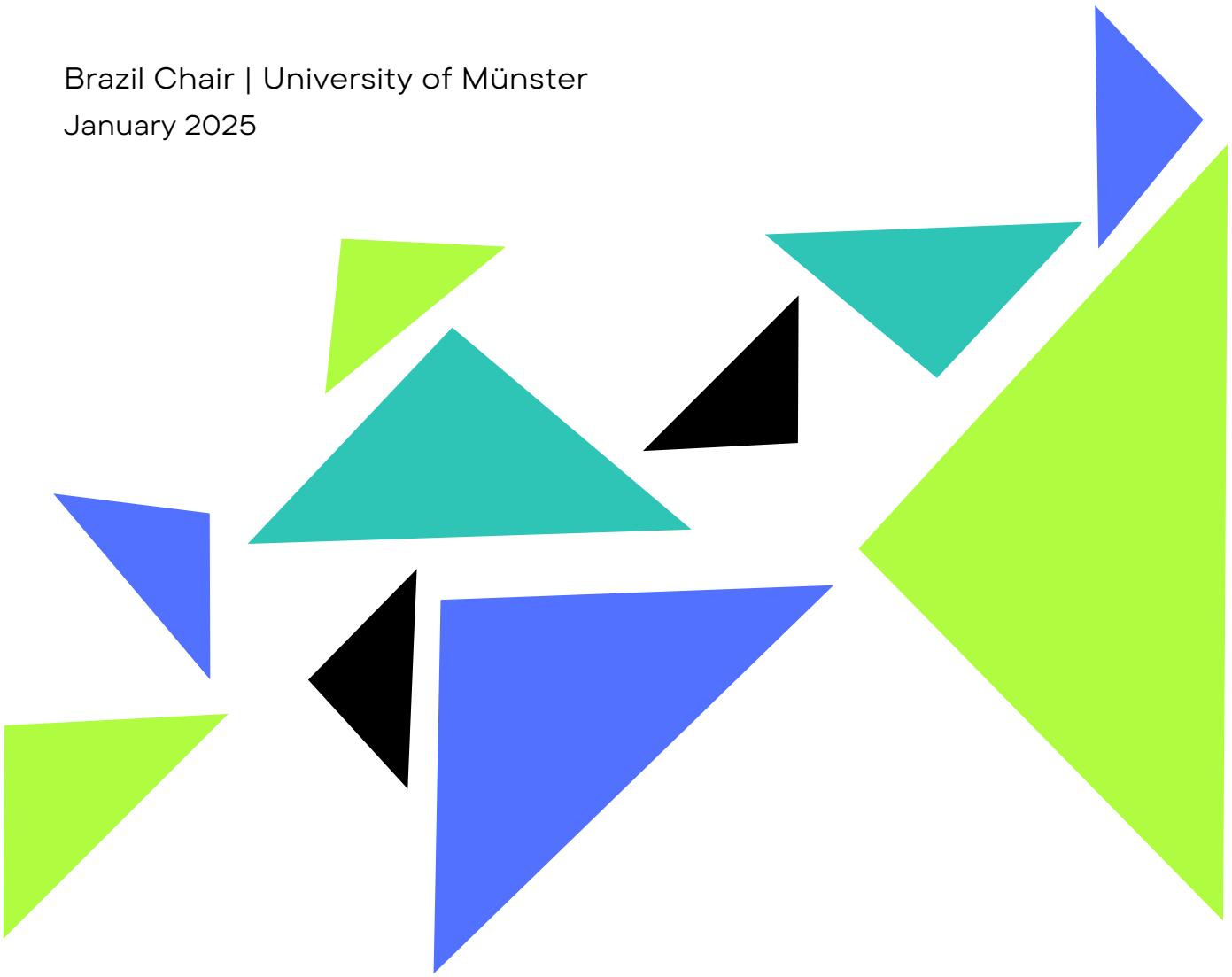

POLICY BRIEF

Artificial Intelligence for Participation

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scope
research project

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Find out more: https://scope.uni-muenster.de

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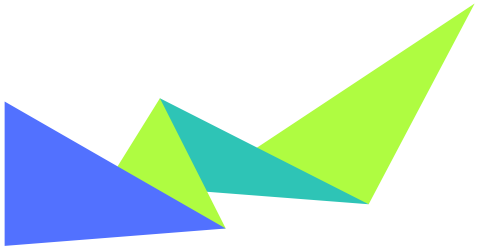


Introduction

This Policy Brief provides an overview of current and potential applications of artificial intelligence (AI) technologies in the context of political participation and democratic governance processes in cities. Aimed primarily at public managers, the document also highlights critical issues to consider in the implementation of these technologies, and proposes an agenda for debate on the new state capabilities they require.

Keeping up with the current debate on AI has not been an easy task for digital government managers and practitioners. Since the launch of ChatGPT in November 2022, discussions about the potential applications of AI-based technologies, which were already complex and far from consensus, have become even more intense and fragmented, resulting in a cacophony of opinions that are often poorly grounded on evidence.

Some analysts say the debate has fragmented into “fandoms,” or enthusiastic subcultures that do not engage in dialogue with each other. Some of these, including the spokespeople for the major AI models, are “techno-solutionists,” who portray AI as a panacea for all problems and propose solutions before clearly defining the challenges they address. On the other hand, critics emphasize the risks and problems already identified in the use of AI, and even advocate a halt to the development and application of these technologies.

The fact is that many public institutions are already adopting these tools, with varying levels of maturity and transparency. Furthermore, many questions about how AI works remain open, allowing us to discuss and politically question what we expect from these technologies and how they should relate to democracy [1] [2]. Finally, it is necessary to recognize that, for AI to truly generate public value in a responsible and ethical way, its implementation requires state capabilities — technological, institutional and organizational — both already known and new.

AI as social and technological infrastructure

Artificial intelligence technologies must be understood not only in their technological dimension, but as part of a socio-technical infrastructure that is inseparable from other social and political structures, such as bureaucracy, human labor, and power relations [3]. In the realm of public policy, this means taking into account that the production, implementation, and regulation of AI technologies involve different interests and strategies of multiple actors.

The definition of the model to be adopted, the selection of data to feed it and the degree of transparency throughout the process are examples of decisions that shape this infrastructure and are at the same time influenced by social, political and economic factors.

What 'AI' are we talking about?

The term "artificial intelligence" has been used as an umbrella to encompass a wide variety of technologies and applications. In a very simplified way, the use of AI generally refers to a set of technologies capable of performing tasks that are traditionally associated with human intelligence [8].

A more recent development in the field is **generative AI,** which refers to artificial intelligence systems that can create new content based on semantic patterns learned from large amounts of data. Examples of tasks that generative AI can perform include writing different types of text, creating realistic images, composing music, generating natural language dialogue, and even writing program code.

These capabilities have become more visible to the general public with the emergence of large-scale language models (LLMs). These models, like GPT, are trained on huge amounts of data. As such, they are able to "learn" in an unsupervised manner to perform a variety of tasks, such as generating text, translating languages, and answering questions posed in natural language.

What participation are we talking about?

The emergence and expansion of the World Wide Web since the 1990s has changed the way citizens interact with the state in at least three functions related to democracy: information, communication and participation.

The Internet has significantly expanded the possibilities for disseminating and accessing information and data. It has also facilitated communication between a larger and more diverse number of actors, initially in a "one-to-many" model, and evolving into a "many-to-many" structure with the advent of social networks. Online participation has become possible through a variety of tools, from petitions to debate and voting platforms, allowing citizens to be consulted, influence and take part in the decision-making processes of governments and parliaments around the world [9].

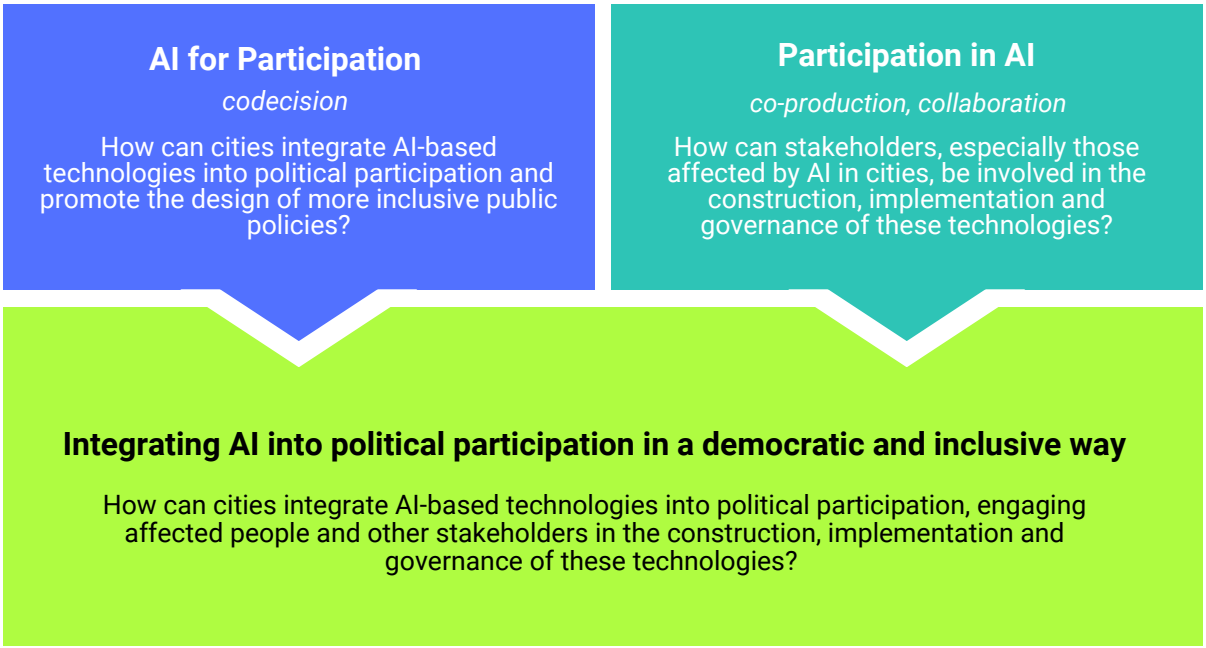
When the Web was still in its infancy, there was a debate about the extent to which participation in the virtual environment constituted a separate "cyberworld", a political sphere distinct from the "real world." But as everyday life becomes increasingly connected to the digital environment, this distinction is blurring. More than 10 years ago, political scientist Norbert Kersting pointed to the trend toward a *blended democracy*, in which online and offline forms of participation coexist and reinforce each other.

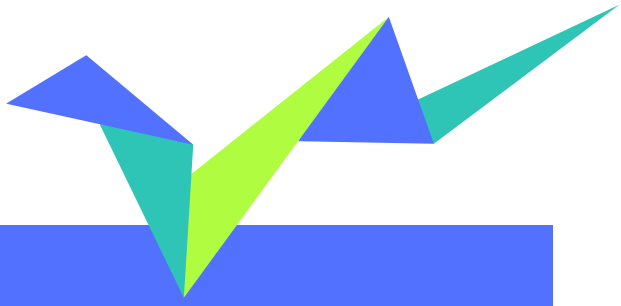
Now, the rapid expansion of AI-based technologies promises to trigger new transformations in online political participation — with both positive and negative effects. There are at least two ways to approach this issue. First, it is possible to reflect on whether and how these technologies, combined with the large volumes of data generated today, can be incorporated to enable and facilitate citizen participation in public policy decision-making — or, on the contrary, how they can distort processes or deepen inequalities in these processes.

Second, as AI becomes increasingly present in the various dimensions of society and governments, and as the problems and risks take on new scales, the debate on the need for more participatory governance systems for these technologies — from their design to their outcomes, including the data and algorithms used — is intensified.

This form of "participation in AI" has been explored in several reports and studies that analyze the different ways in which society can be involved in the governance of AI technologies. In this Policy Brief, however, we focus on another, less discussed aspect: the use of AI *for participation*, referring to applications of these technologies that enable society to participate in public policy-making.

The two approaches can be seen as complementary. While integrating AI technologies into political participation in public policy decisions, governments can also implement more participatory processes in the construction of the technology. The table below illustrates the issues raised by these two approaches and proposes a synthesis of these perspectives in a third question.





Democracy and automated decision making

The existence of conflicting views is constitutive of democracy. Authors Hoffman and Keller [1] argue that, given this, normative questions about how people should behave and how society should function have no mathematical solution — which is what we can expect from AI-based technologies.

There is no single recipe for what makes a good decision — simply because it depends on the different views, values and beliefs at play. The greatest challenge to democracy, the researchers emphasize, lies in the ability to discuss and agree on the d*escription of common problems and goals*.

The search for consensus and collective deliberation can be one of the applications of AI technologies in the context of social participation — that is, technology as a facilitator of debate [4]. Some platforms propose to use machine learning algorithms to extract the different existing positions and groups from a large number of proposals and opinions on a given topic.

This aspiration is not new. One example is the open-source *Pol.is* platform, which was used in Taiwan in the *vTaiwan* tool to discuss the regulation of the Uber service in 2015 [5]. This platform allows participants to agree, disagree, or remain neutral to other users' comments, in addition to writing new proposals that are also evaluated. This data is used by the algorithm to classify and group existing opinions. In Brazil, the *Empurrando Juntas* tool [6], initially inspired by *Pol.is*, has a similar proposal that incorporates elements of gamification.

These tools aim to be an alternative to social media platforms controlled by large technology companies, as their code and the algorithms used are transparent and verifiable.

Still, it is worth questioning the extent to which opinion ranking algorithms can actually capture the nuances of proposals. On the contrary, some qualitative analyses suggest that this vote-based approach can "entrench" discussions and reduce plurality, thereby distorting the process [7].

Background

The speed at which AI-based technologies are developing and spreading is astounding. While it took Facebook years to reach the 100 million user mark, ChatGPT reached that number in just two months. Within six months, the tool was already integrated into Microsoft's *Bing* web search service — even though its effects and impacts had not yet been thoroughly tested.

Meanwhile, in the context of governments and public policies, the availability of data collected by systems, applications and other interactions between citizens and government services is increasing. With the smart city paradigm, sensors, cameras and other data-generating devices are proliferating.

The combination of these two factors — greater availability of data and increasingly easier and cheaper access to AI technologies — is reducing the barriers to adopting these technologies, but there are some points of contention. In the case of LLM models, the initial cost of training the models is high, so there is a tendency to centralize the capacity to produce this technology in a few large companies in the sector — OpenAI, Google, Meta, etc. Some of them, such as Meta and its Llama family of models, open part of their models [10], so that derived models can be developed using this previously "trained" base.

The table below summarizes some of these disputes and the main actors involved.

AI Technologies: Key Issues in Dispute

Conflicts and disputes	Implications	Actors involved
Large-Scale Language Models (LLMs): proprietary solutions *vs.* open source	Proprietary solutions offer advanced models and free versions, that have been trained with large amounts of data and high investments, but remain limited in their reuse. Open source models promote greater transparency and freedom of use and customization. The definition of open source is debated.	Big Techs (Google, Microsoft, OpenAI) defend proprietary solutions on the grounds of security, monetization and control reasons. The open source community (e.g. Hugging Face) advocates democratizing access to technology and reducing dependence on large corporations. Meta AI claims that its Llama family of models is open source, but faces criticism for imposing restrictions that are incompatible with free licenses [10].

Conflicts and disputes	Implications	Actors involved
Transparency *vs*. opacity	Transparency and explainability are essential to implementing trustworthy and ethical AI models. Transparency refers to clarity about the data sources used to train models, while explainability refers to the ability to make an AI model's operations and results understandable. A lack of both increases the risk of bias and opaque decisions, making it difficult to build trust and public scrutiny.	Regulators and organizations that monitor AI use are pushing for greater transparency and explainability, while some companies argue that they keep aspects of AI training secret to protect intellectual property and prevent criminal uses. The EU's AI Act was the first major AI regulatory effort to include transparency requirements. The legislation, which will come into effect in phases over the next two years, still awaits more specific rules to determine how this will be done in practice [11].
Visions of responsible and sustainable AI	A broad view of the socio-environmental sustainability of AI includes the need to involve affected populations and stakeholders in the design of AI systems from the outset. It also means considering the environmental impact of the expansion of these technologies, which require intensive use of energy and water.	Several organizations and research centers are working on these issues. Their approaches range from a more critical perspective that links the wave of generative AI to so-called surveillance capitalism and data extraction; to a discourse more aligned with AI companies and their investors in search of "Responsible AI". Algorithmic Watch has developed a framework of indicators to assess sustainability at different stages of the AI lifecycle, starting from the planning stage and taking into account environmental, social and economic requirements [12].
The Geopolitics of AI: Disputes between States	AI as a critical technology whose appropriation is of interest to States and the sectors of financial-informational capital linked to them. This appropriation occurs both at the level of mastering AI technologies and in the "primitive accumulation of data" generated by their use. The environmental impact of the expanding use of AI could exacerbate disputes between countries over energy and water.	The States to which corporations owning AI technologies are linked exercise their power through the articulation of interests between capital and the state; direct or indirect investments; legal mechanisms to control the use of technology and data; and extraterritorial mechanisms (sanctions, embargoes on access to technologies, subordination of corporations' operations abroad to the legislation of central countries). The power of corporations operating on a global scale often exceeds that of "non-central" States.

AI for Participation: opportunities and trends

Considering the general issues about AI-based technologies and the background of disputes and conflicts, it is possible to discuss the possibilities and trends of using AI-based technologies for political participation.

As with online participation processes using other tools, different AI-based technologies can be integrated into the various stages of a process—from planning to evaluation. The different uses have the potential to deepen political functionalities or enable new ones, in information, communication and decision-making. It can also help integrate online and offline processes.

The following table systematizes these potential and existing possibilities, accompanied by examples of their application. The technologies have been grouped into four categories according to the political functions they enable:

- **Visualizing realities and imagining futures.** Citizens interact with visual urban models, simulating and envisioning the potential impact of new infrastructure and policies.
- **Understanding complex issues and opinions.** Citizens can map, analyze and communicate their needs and desires. They can also identify problems based on the analysis of open data.
- **Discussing issues and arguments.** Different groups of people can have their opinions collected, analyzed and grouped together in large-scale debates.
- **Deepening participation and including people**. Different participation processes can be linked together, expanding knowledge about them; and citizens who are marginalized or have limited access to technology have new ways to present their contributions.

They are also classified according to their “usage horizon”, which indicates the current level of complexity and the use observed in the examples identified (see legend below). While these tools can bring benefits, their implementation is not without risks, which are discussed in more detail in the following section.

Legend: Horizon of use of technologies in cities


It is on the horizon of current technological development, but cases in cities are rare and the complexity of implementation is still high.


Current technology development already allows implementation with reasonable effort, and use cases are beginning to appear in cities.


Current technology development already allows implementation with low effort and investment, and several use cases are already known in cities.

Visualizing realities and imagining futures

Citizens interact with visual urban models, simulating and envisioning the potential impact of new infrastructure and policies.

Technologies	How they integrate AI technologies	Examples and possibilities in participation	Use
Extended Reality (Virtual, Augmented, Mixed) and 3D	The term Extended Reality encompasses a variety of immersive technologies that integrate the physical and digital worlds. Virtual Reality (VR) is a computer-generated digital environment, typically accessed through devices such as glasses. Augmented Reality (AR) combines virtual elements with the real world by overlaying information or graphics into the physical environment, for example through a smartphone camera. Mixed Reality (MR) integrates virtual elements into the physical environment in a more realistic and interactive way. In all cases, AI is used to recognize gestures and sensors connected to the systems, as well as to analyze images of the physical environment to adjust and adapt the virtual images.	Citizens can interact with simulations of urban interventions (such as a new bridge or bike lanes) or view information about the city on their mobile phones by pointing at elements of the physical environment. The city of Munich, Germany, combined 3D models of the city with VR to encourage participation in urban mobility projects [13]. Another German city, Hamburg, used 3D models integrated with data and AI technologies on the MIT Media Lab's CityScope platform to engage the public in the decision-making process for 161 viable locations to house refugees [14].	
Metaverse	A set of technologies that enable the integration of the "real" physical environment with a digital one — including the aforementioned extended reality technologies. In the context of cities, the use of this technology has also been called "Cityverse". In addition to the intensive use of data, IoT, cloud computing, digital twins (see below), and other technologies, the metaverse uses artificial intelligence models to generate text, images, audio, analyze data and make projections.	Citizens can engage in virtual meetings, discussions, and participatory activities regardless of their physical location [15]. Researchers have documented a process of co-designing public spaces in London, Hong Kong, and Lisbon [16] using the open-source 3D rendering software Blender. Herrenberg in Germany used its VR-enabled digital twin model to consult citizens on the construction of a shopping mall, for example [17]. Despite the promise of the metaverse, there are still many unanswered questions about the regulatory challenges of these environments [18] and implementation barriers [19].	

Technologies	How they integrate AI technologies	Examples and possibilities in participation	Use
Digital Twins	Digital twins are “virtual replicas” that, in the context of a city, can be used to plan, test and simulate the impact of certain urban interventions in the territory or in public services design. Using data about the city and other factors such as climate, traffic, economy and population, AI-based models design, simulate scenarios and may represent them visually in participation processes. The use of AI technologies such as AR and VR in conjunction with digital twins allows them to adapt to the data provided, going beyond the more static 3D models [20].	Despite the growing number of references on the use of digital twins in urban planning, documentation on their use in participatory processes is scarce. More often, they refer to static 3D models that do not have “real-time” data and the use of AI models. Because they are interactive, digital twins have the potential [21] to be used, for example, in land use definition processes where communities can filter information, select variables and visualize specific changes in the area. Tallin, in Estonia, has created a participation hub that allows citizens to visualize different solutions through digital models (e.g., the collaborative renewal of the design of a major street) [44].	

Understanding complex issues and opinions

Citizens can map, analyze and communicate their needs and desires. They can also identify problems based on the analysis of open data.

Technologies	How they integrate AI technologies	Examples and possibilities in participation	Use
Classification systems, Dynamic topic modeling	AI algorithms can process text from online and offline participatory processes, such as suggestions, opinions and complaints, and propose classifications and aggregations by topic (such as dynamic topic modeling). These technologies are based on natural language processing (NLP).	Using this technique, managers analyzed more than 160,000 suggestions from the Democracy Seoul platform. Previously, only the most voted ideas were read by officials. A researcher at Cornell University collaborated with New York City to test the use of AI to systematize all the contributions from the city's participatory budgeting platform (The People's Money) [23]. More than 400 municipalities in Belgium have adopted the CitizenLab system (now Go Vocal) to categorize and group citizen requests and feedback [24]. And in 2021, the city of Barcelona implemented the "Mario" module to classify citizen suggestions and complaints, which reduced the error rate in internal distribution from 50% to 15% [25].	
Machine learning	Machine learning is a subfield of artificial intelligence that encompasses algorithms capable of learning patterns in data, making predictions and making decisions with minimal human intervention.	In 2020, Barcelona carried out the participatory experiment "Mercè", in which citizens helped to create a knowledge database and a model to measure the "livability" of the city's streets – taking into account dozens of aspects such as tree cover, road width, street furniture, public activities, etc. Participants rated photos of the streets, training a mathematical model capable of classifying public spaces [26]. Berlin's CityLab integrated the Quantified Trees (QTrees) model into a platform that helps residents coordinate the care of their neighborhood's vegetation, using open data, data collected by residents and a set of climate and tree health indicators to develop the predictive model [27].	

Technologies	How they integrate AI technologies	Examples and possibilities in participation	Use
Network analysis	Structural analysis of social networks is a methodology that predates AI models for studying relationships and connections. Combining it with AI-based technologies, such as NLP and other models, expands the possibilities of analysis. Clustering algorithms help identify subgroups (e.g., participants with similar proposal profiles), and propagation models can simulate how ideas spread in a given network (helping to understand and analyze, for example, disinformation processes).	The open-source platform *Pol.is* uses statistical models and machine learning combined with network analysis to group like-minded people, identify consensus and disagreement, and provide visual insights into complex debates. It has been used, for example, in the debate over the regulation of ride-hailing in Taiwan.	
Sentiment analysis	Using NLP and related techniques to analyze texts from participatory processes, it is possible to identify emotions or attitudes in texts, such as positive, negative or neutral, and more complex emotions (anger, joy, sadness, etc.).	It can be based on data from participatory processes, interactions with public authorities or on social networks. In the context of participation, it is a complementary tool that helps to understand public opinion. Hate speech can be detected automatically, helping to combat toxic behavior and misinformation. However, It is important to consider the limitations of these tools in capturing elements of cultural context, which requires additional effort in qualitative analysis and human interpretation. In Dublin, the technology was used to identify how the population present on social networks expressed themselves on environmental issues, cultural events or the development of urban projects [28].	
Dashboards and alerts	The above techniques can be integrated into interactive panels that allow the viewing and filtering of information, as well as real-time monitoring with the generation of alerts based on the detection of a particular situation.	The civic technology tool Serenata de Amor [29] uses historical data on the spending of Brazilian members of parliament and classifies suspicious expenses in the “Jarbas” dashboard. For years, the tool has also generated suspicious spending alerts on Twitter, allowing the community to review the corresponding invoices.	

Discussing issues and arguments

Different groups of people can have their opinions collected, analyzed and grouped together in large-scale debates.

Technologies	How they integrate AI technologies	Examples and possibilities in participation	Use
Online deliberation platforms	Machine learning algorithms can be integrated into online deliberation platforms to classify and identify patterns in responses, grouping participants with similar responses [30].	The Empurrando Juntas software [6], developed in Brazil and initially inspired by Pol.is, uses machine learning to group the opinions and contributions of participants.	
AI Agents	AI agents are built from generative AI models to simulate human behavior and interact with the environment and other agents. They are capable of evaluating data and simulating scenarios autonomously to support decision making [31].	AI agents can be used in large-scale deliberative processes to simulate different positions in debates and evaluate possible consensus scenarios.	

Deepening participation and including people

Different participation processes can be linked together, expanding knowledge about them; and citizens who are marginalized or have limited access to technology have new ways to present their contributions.

Technologies	How they integrate AI technologies	Examples and possibilities in participation	Use
Recommendation systems	Recommendation system algorithms are able to identify patterns and make suggestions for related content based on data.	Based on past interactions or registration information, it is possible to suggest initiatives, policies, or public discussions that are more relevant to the citizen's profile or location, thereby expanding the reach of initiatives. In addition, it is possible to automate the process of linking documents and public information to a specific process, making it easier for citizens to find relevant information.	
Chatbot to provide information and support proposal writing	They use natural language models to process text or the user's voice and develop responses from a knowledge base.	The city of Amsterdam uses the PolyAI voicebot to interact with citizens via voice in its citizen service, replacing the traditional phone menu [32]. The Berlin City Council is testing the "Parla Berlin" prototype, an AI assistant that interacts with citizens and responds to requests for access to information that is available in the agency's public documents [33].	
Demographic segmentation [34]	Machine learning techniques allow the analysis of information from public and open sources, such as demographic censuses, social networks, and others, to identify patterns and profiles.	These practices can be used by participatory process management teams at different stages. For example, at the planning stage, to identify target audiences; or, during the process, this data can inform strategies for specific engagement campaigns for different audiences.	

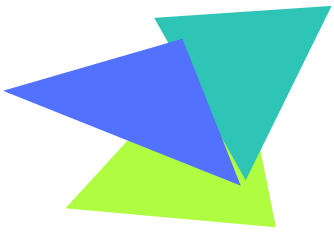
Technologies	How they integrate AI technologies	Examples and possibilities in participation	Use
Usability Tests [34]	By combining human supervision with machine learning, NLP, and computer vision, AI can help identify design issues, interaction barriers, and user preferences more efficiently. A variety of techniques are available, including automated behavioral analysis, click mapping, user simulation, and identification of inaccessible elements such as low contrast or small buttons.	Different testing techniques using AI can help improve the navigation of participatory process platforms and applications, making them more efficient and user-friendly for the general public and more inclusive for users with disabilities or low digital literacy.	
Automatic Text Simplification	Text simplification is an operation that uses NLP techniques, with or without the use of LLMs, to remove complexity from the grammatical and lexical structures used in a given body of text.	Through the “Amsterdam For All” initiative, the city of Amsterdam has been experimenting with using AI to create plain language versions of official texts and public policy documents [35].	

State capabilities: new demands

Implementing artificial intelligence (AI) in government to foster citizen participation requires state capabilities that go beyond the simple acquisition of new technologies. The use of AI for participation requires the development of capacities in several dimensions and the intervention of senior government officials, who need to make strategic decisions on the following aspects:

- **Availability of technical resources.** It is necessary to evaluate the various possibilities for using AI and choose between different solutions and forms of production or acquisition of technology. Digital sovereignty becomes a key requirement, raising the question of how much autonomy that the government wishes to maintain in the adoption of proprietary and/or foreign technologies.
- **Control over data and technology.** Governments need to be able to manage the data and technologies they use and avoid excessive dependence on suppliers. Fostering the co-creation of technological solutions requires the mobilization of civil society, academics and business actors, as well as the capacity to carry out innovative government contracts.
- **Acquisition of technological solutions.** Even in a strategy of acquiring traditional market solutions, it is crucial to have the ability to identify and understand the specific and local needs for contracting technologies. This requires the presence of professionals qualified to articulate the needs of participatory processes with the possibilities offered by AI, without passively submitting to the conditions imposed by suppliers. Cities have tested specific clauses in bidding processes to ensure transparency and the assessment of risks and impacts of contracted AI technologies — such as New York City, which requires suppliers to provide a “plain language” description [36].
- **Ability to design and implement participatory processes with AI.** The successful use of AI depends on the ability of the teams responsible for participatory processes to engage citizens in an inclusive way. The professionals involved need to be specifically trained to understand both the capabilities and limitations of AI, so that the technology does not take the lead from citizen participation. It is also necessary to review and improve existing resources, such as online participation platforms, to incorporate the innovations offered by AI. This must be done without disregarding the foundations already established, in an act of “wonder” at new technologies.
- **AI governance practices.** Effective governance is essential to ensure that the use of AI, both in government and in participatory processes, respects democratic principles such as openness, equality, rationality, transparency, privacy, respect, minority rights etc [9] . This involves identifying and mitigating risks, as well as creating mechanisms to map and correct potential biases in algorithms, and ensuring that data is handled appropriately.

These are the capabilities needed to ensure that the adoption of AI in participatory processes is not only effective, but also aligned with democratic principles and the interests of society. Other capabilities may be required depending on the context and specific situations.



Capacity-building networks

Cities have established collaborative networks to share experiences and develop common standards and principles for the use of artificial intelligence by local governments. While no initiative has yet specifically addressed the use of AI in participatory processes, these networks have highlighted the importance of transparency, accountability and citizen participation in the implementation of this technology.

Through the Global Observatory on Urban Artificial Intelligence (GOUAI) and with support from UN-Habitat, the cities of Barcelona, Amsterdam, and London have developed a set of principles and a guide for ethical self-assessment in the implementation of urban AI systems [37]. The same initiative has mapped the use of AI by cities around the world [38].

The Digital Eurocities Forum, in collaboration with the European cities of Amsterdam, Barcelona, Brussels, Eindhoven, Mannheim, Rotterdam and Sofia, has developed the Algorithmic Transparency Standard — a data model to standardize the public ledger of AI systems in an open format [39].

Risk management: key issues

The risks of adopting AI technologies in the public sector [24] and in cities [40] have been widely discussed. There are well-known ethical risks, such as discrimination and bias, and socio-environmental risks, such as the intensive consumption of energy and water in the process of expanding data centers for data storage and processing.

However, in addition to general risks, specific risks can be highlighted in the context of participatory processes conducted by governments using AI technologies. It is recommended that, when adopting AI technologies, management teams act systematically to anticipate potential risks and the factors that can trigger them, so that mitigation strategies can be developed.

The table below lists some of these specific risks, their triggers, and possible mitigation strategies.

Potential risk	What can trigger it	Possible mitigation strategies
Opinion manipulation	AI models rely on past data to make predictions or generate new content, which can lead to various types of biases. Such biases have also been identified in large-scale natural language models (LLMs), including biases of a political-ideological nature. This behavior may favor certain political views or values over others [41].	It is possible to evaluate the "outputs" of AI technologies through testing, but due to the lack of transparency of the models and the data used to train them, such evaluations are complex and their results are questionable. Risks — and therefore mitigation strategies — vary depending on the intended use. For example, AI assistants that help draft proposals may lead participants to a particular idea or introduce an unwanted bias into the final draft; or, an AI technology that scores and organizes proposals may favor a particular political agenda because it is more common. In addition to opting for more transparent and verifiable models, it is recommended to maintain a systematic evaluation and control of the results obtained.
Amplification of anti-democratic voices	In online participatory processes, the risk of over-representing opinions or inflating positions (for example, with bots participating in online voting) is already well known. Algorithms powered by AI technologies can also cause such problems [42], highlighting more frequent voices (in the case of coordinated attacks) or aggressive messages that generate more engagement from participants (a phenomenon known in social media environments). This could, for example, amplify hate speech.	These risks need to be considered from the design phase of the participatory process, so that the technologies used and their architectures avoid these incentives. On the contrary, the use of AI technologies itself can also help to isolate radicalized opinions and reduce the process of polarization in digital participation environments. In addition, the rules and moderation processes must be transparent and can be carried out with the participation of the community involved.
Exclusion of interested parties	Particularly when discussing the involvement of agency systems (AI agents) to simulate scenarios and positions, there is a risk that minority positions or positions not represented in existing databases will be excluded from the analyses.	Improving the quality of databases and ensuring the diversity of the population represented is one way to mitigate the risk. Another is to adopt open and inclusive practices for data governance and the AI technologies in use. An interesting reference on this topic is the guide developed by the City of Amsterdam to analyze and mitigate biases affecting vulnerable populations at all stages of the development cycle of AI systems [43].

Potential risk	What can trigger it	Possible mitigation strategies
Introduction of errors and biases in proposals	So-called “Generative AI” has, among the problems already mapped, the generation of answers that seem plausible in the context, but that contain factual errors or are simply “invented” - a situation better known as “hallucination”, although the term is being questioned. For example, in the context of a participatory process, the use of AI to generate process reports may create different suggestions or distort proposals made by participants.	Part of the risks can be mitigated by improving the data generated in the participatory process. In other words, the more structured and well-documented the proposal database is (e.g., with specific metadata and fields for description, justification, authors, etc.), the fewer errors will occur in its processing. Again, transparency is key. In addition to making the open database publicly available for review by anyone interested, it is also possible to configure the system to maintain references to the original data, leaving a “trail” of the proposals so they can be fully reviewed. Data processing decisions and steps can also be recorded, allowing audits and process reconstruction.
Misinterpretations	In addition to errors and “invented” content, the processing of proposals and results from participatory processes with AI can also generate misinterpretations because the models are not fully sensitive to the local context.	
Reduced public trust in the participatory process	When closed models are adopted or technologies are implemented in processes without transparency or community participation, there is a risk of undermining trust and, therefore, the legitimacy of the process. Ultimately, this can lead to a loss of trust in democracy itself.	From the decision to adopt the technologies to the evaluation of its effectiveness, all stages of the implementation must be transparent and include the participation of the community affected by the participatory process. Using open source models also helps to make the adopted technologies more transparent and auditable.
Lack of manager accountability	Risk occurs when AI technology is seen as solely responsible for decisions or errors generated in the process (“It’s the system’s fault!”). This can happen due to a lack of transparency, inadequate oversight, or overconfidence in AI’s results.	The manager in charge of the participatory process must be ultimately responsible for the decisions and results generated by the AI used in the process — not the machine. Therefore, he or she must maintain good governance practices and constant supervision, in addition to establishing a dialog with the community and reporting on the implementation.

TO DIG DEEPER

AI and the Future of Online Participation in Smart Cities

From October to December 2024, the Scope Research Project promoted a series of webinars to reflect on the Future of Online Participation in Smart Cities. The series was presented by the Brazil Chair and the Brazil Center at the University of Münster, with support from CAPES and in partnership with the International Digital Dialogues and the Goethe Institute - São Paulo.

The first webinar specifically explored how AI is transforming participatory governance in smart cities, highlighting opportunities and challenges. Key themes included AI's potential to analyze large data sets to inform decisions, its role in creating inclusive platforms for dialogue, and the risks associated with privacy, bias, and unequal access. Ethical considerations were also highlighted, with participants emphasizing the importance of transparency, accountability, and ensuring that AI tools empower rather than marginalize communities.

The full video is available on the project page. See some highlights below:

Ricardo Poppi
Instituto Cidade Democrática

AI offers a unique opportunity in demographic segmentation for public data. Opening an online participation process isn't enough—people won't naturally engage, and those who do are often already included. Small cities and organizations face high costs in identifying underrepresented groups and actively engaging them. AI can reduce these costs by processing large datasets to identify who isn't participating and who is most likely to engage, enabling more inclusive and effective strategies.

(...) Implementing AI in participatory processes **requires robust governance to prevent exclusion**. It's imperative to ensure AI systems are transparent, explainable, and accountable. Such measures not only safeguard the participatory process but also lay the foundation for sustained, equitable engagement between government and citizens.

Norbert Kersting
University of Münster

AI can be a valuable tool in supporting democracy, but it is not the solution in itself. It serves as an **assistant to democracy**, helping to foster better access to quality information—free from hate speech and fake news. It can enhance the quality of online deliberation, which is often lacking, by promoting a more thoughtful and informed discussion.

However, **AI should be complemented by offline participatory tools, particularly at the local level**, to ensure meaningful engagement. Additionally, AI excels in tailoring information for specific target groups, not just translating languages but adapting to the unique language of different communities.

Clara Iglesias Keller
Weizenbaum Institute

AI will potentially shape self-determination in varying degrees. It's important to consider what sorts of automated tools, and how their selectiveness, are going to interfere with democratic debate. We should also reflect on which platforms, AI-based or not, we should implement to include more people in democratic decision-making. Additionally, we need to recognize that these and other AI systems will be implemented in contexts where they will influence access to public services, education, and opportunities—factors that determine people's capacity to engage with these channels.

How AI will shape these rights and the collective process of participation is still up for dispute. There is a strong perception in academic and public debates that AI poses a threat to democracy. Imbalances of public and private power, especially at the global level, have been crucial in defining what AI systems look like today, what data they rely on, and so on. But ultimately, no version of AI imposes itself on democracy—these systems must remain open to dispute.

[The current regulation frameworks] also fall short of addressing the nuance in the level of private participation involved in building these systems. What does it mean to have so much private involvement in tools designed to promote inclusion? Many AI systems are purchased off-the-shelf from private actors who not only design but sometimes implement and enforce them. Yet, we lack sufficient mechanisms to hold these players accountable across their various roles in designing and providing AI systems that can significantly influence democratic decision-making.

Andreas Jungherr
University of Bamberg

AI requires an environment with abundant data to learn from and identify patterns. Without sufficient data or phenomena that naturally lend themselves to data collection and regularities, AI's utility is significantly reduced. This is particularly important to consider in the context of politics—especially local politics—where many issues of interest might not align well with the kinds of regularities that AI excels at identifying.

(...)

AI has the potential to engage effectively with the fragmented and multi-channel information environment we navigate today. It can do more than just summarize what's happening; it can also interact with people automatically, guiding them to the right points of access within the city.

For instance, when speaking with city managers, one common challenge they face is that many residents live disconnected from the city's systems. When an issue arises, they don't know who to contact or where to go, leading to frustration. Instead of using formal channels, they may take to social media to voice complaints or form unorganized groups. AI can help by surfacing these issues and interacting with citizens, connecting them directly to the appropriate channels. The advantage is that this solution could be relatively inexpensive, building on already developed AI technologies.

Watch all episodes of the webinar series in full. Access:

scope.uni-muenster.de/webinars

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