Implementing e-Participation in Africa: What Roles Can Public Officials Play?

Working paper

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Paul Plantinga
Human Sciences Research Council, pplantinga@hsrc.ac.za
Nonkululeko Dlamini
Human Sciences Research Council, ndlamini@hsrc.ac.za
Tanja Gordon
Human Sciences Research Council, tgordon@hsrc.ac.za

ABSTRACT

Whilst there are many new opportunities for using emerging technology to enhance citizen engagement with government decision-making, there are still challenges using existing technologies and many failed initiatives, especially in Africa. These failures are often put down to a mismatch in culture and values, between the local African context and technologies developed in other parts of the world, and between the agile openness of digital initiatives and the bureaucratic practices of public officials. Unfortunately, little is known about the specific roles public officials do or could play in e-participation implementation, how these roles are shaped by distinctive values, and the extent to which these values may conflict or, possibly, complement each other. This paper presents results from a desktop analysis of e-participation projects, largely from the African continent, and shows how a diversity of public official roles and values would be necessary to support the realisation of e-participation outcomes. From legal specialists developing guidelines to comply with personal data protection legislation, to communications officials learning how to moderate social media conversations and technology developers exploring new ways of verifying online identity.

CCS CONCEPTS •Social and professional topics~Computing / technology policy • Social and professional topics~User characteristics • Social and professional topics~Professional topics~Management of computing and information systems

Additional Keywords and Phrases: e-participation, public administration, roles, capabilities, values, Africa

1 INTRODUCTION

e-Participation seems to offer African states an opportunity to strengthen their democratic systems and processes through more direct public involvement in decision making. In this way improve the quality of planning and implementation, but also enhance legitimacy.

There has been significant innovation around e-participation over the past decade. A number of emerging technologies (e.g. generative artificial intelligence (AI)[1]) and methodologies (e.g. citizen assemblies[2]) promise new ways of supporting citizen engagement with government decision-making. There are also significant changes in how public participation takes place. What does seem to characterise much of the recent change in how governments interact with publics is a growing influence from 'civic tech'-led, bottom-up engagement as an alternative to the 'gov tech'-led consultation processes typical of earlier e-participation eras. In the United Nations Department of Economic and Social Affairs (UN DESA) framework these 'empowered' forms of engagement include participatory budgeting, e-petitions and collaborative electoral platforms. For governance actors, this has meant a shift of interaction beyond government-owned portals into a diversity of online and social media spaces [1]. Here, much of the locus of control lies with the public or community instead of the government [2]. Inevitably, as many states and cities have explored supporting civic-led engagement through, for example, open data portals, so have there been contests about information validity and decision-making responsibility [3]. Ultimately, these changes raise important questions for what roles and skills public administrations need to harness emerging innovations, navigate wider changes and, ultimately, support effective and inclusive public involvement in decision-making.

Whilst practices evolve and new technologies are introduced, many practitioners and researchers continue to grapple with the failures of existing initiatives [4]. A large body of work in the broader e-governance space has investigated this topic, and points to two main issues concerning public administrations: first, is the mismatch between the innovative, agile practices of those developing e-governance platforms (and the changes enabled by the technology itself), and the rigid, bureaucratic culture of the organisations into which they are being deployed [4, 5]. Second, is the large geographical, social and organisational mismatch or gap between technologies developed in other regions and their adoption in local African contexts [6, 7]. Both of these point to the issue of culture and values as underlying factors affecting the motivation of public officials and other stakeholders involved in or affected by these projects.

Unfortunately, relatively little is known on the micro-level differences and strategies of individual administrators involved in e-participation. This is in comparison to the large body of work on meso and macro-level organisational and institutional processes. In addition, there is limited material on how e-participation technology diffuses or is adopted in African public administrations [8]. For those looking to implement e-participation in Africa, and for researchers looking to understand what makes these initiatives work, there is a need for a richer picture of how public officials can help to realise the aspirations such programmes. The focus of this paper is therefore on understanding the existing and emerging technology, social and organisational capabilities African governments may draw on to support e-participation implementation, and the roles that different public officials can or should play in adapting systems and processes for the local context.

Critically, we also consider what values underpin these roles and how these may align with the values embedded in specific capabilities. We argue that, whilst e-participation may intuitively be associated with values of openness

[1] https://www.oecd-ilibrary.org/governance/hello-world_726fd39d-en
[2] https://www.coe.int/en/web/participatory-democracy/-/citizens-assembly-a-path-to-democracy-that-work-1

and democracy, there is a more diverse range of capabilities and values that can intersect constructively (and destructively) in supporting e-participation project implementation.

In the following sections we first review existing literature on e-participation to develop an outline key concepts related to capabilities, roles and values. We then test these concepts by conducting a desktop analysis of a sample of e-participation projects from across the political and engagement spectrum [9]. Whilst the data collection and analysis have mainly been aimed at supporting (peer) learning by looking at e-participation initiatives originating in Africa, we have also included case studies from other regions. In this way we aim to build an initial understanding of the range of roles that public official can play to support sustainable e-participation implementation, and the capabilities and values they may draw on in their work.

2 E-PARTICIPATION CAPABILITIES, ROLES AND VALUES

The traditional approach to understanding roles in e-participation projects is to consider the goals or activities being pursued and then explore the extent to which different stakeholders are involved in or affected by the e-participation initiative [10, 11, 12]. Often, the anticipated e-participation outcomes are organised along a ladder or spectrum of participation; according to levels of engagement – from the more passive consumption of government-supplied information to bottom-up or community-led action; and/ or according to the 'political' character of participation – from more political and voting-related engagement, to less political policy and service delivery interactions [9, 13, 14].

Depending on the anticipated outcome and associated logic of intervention, different stakeholders may play more or less significant roles, whilst drawing on (or seeking to promote) certain underlying values that "prevail in the context in which it is implemented" [15: 307].

So, if values are context-specific, what do different values look like and how are they connected to different public official roles, e-participation technologies and wider social environments? Below we review previous research on the technology, social and organisational capabilities required for the implementation of e-participation projects, and their relationship to specific values and roles in the public administration.

2.1 Disaggregated capabilities

In Africa, e-participation projects have distinctive characteristics, and both research and practice can benefit from a more granular or disaggregated view of how implementation takes place, at multiple levels.

First, at a higher level, digital governance initiatives are often supported by international donors looking to encourage or promote democratic strengthening in a certain country or region. The process of e-participation implementation therefore involves negotiation of objectives between donor and local organisation, requiring adjustments to the original e-participation vision [16].

At a lower level, the technology is often developed outside of Africa, meaning that there can be a significant gap between design and reality [6, 7]. As a result, local users may resist or incrementally adapt the system to their environment or needs. This process of adaptation is called bricolage [17]. Bricolage refers to the unintended changes a system undergoes during implementation and use. Rather than relying on general schemes of how a technology is designed to be used, usually defined by external actors, the users of the system draw on local cues in obtaining ad-hoc solutions relevant to the *situation at hand* [17].

This is particularly relevant for understanding and supporting e-participation adoption in under-resourced settings where users draw on social capital to learn and adapt the available (often old) technologies for new use

cases [18]. In more flexible technology and project designs, with 'shallow inscriptions' and 'high divisibility' (i.e. more modular and configurable) there are a greater number of opportunities for adaptation to the reality of local practices and needs [6]. For donors and project managers, by seeing bricolage as a more realistic alternative to project 'sustainability', they can then look to identify and harness local innovation and recognise unintended benefits for host partners and countries [17].

When planning e-participation implementation we therefore need to think about how flexible the project design is, who the intended users are, what cues they may draw on, and how they are likely to engage with specific features and (intended or unintended) purposes of the technology. This means we will need to break open the technology (and wider project) 'black box' to explore its 'ensemble' of components, and how these are enrolled into specific uses by a network of socio-technical actors [19].

From a technology perspective, there have been many useful articles describing different types of systems and how they serve specific e-participation purposes [20, 21]. Of particular interest to this paper are the more in-depth case studies which explore detailed questions around system design [4], such as how to present voting options on a web application or whether to verify participant identity [22, 23]. A critical consideration for e-participation is how technology facilitates or undermines the inclusion of traditionally marginalised groups, and so many initiatives seek to address website accessibility and usability [24], usually with reference to a range of web and software standards such as ISO 25000 and the Web Content Accessibility Guidelines (WCAG) [25]. Being more specific about technology types and design options can empower public officials and other e-participation stakeholders to move beyond abstract promises of technology benefits to identify what could work in the local context.

However, as the above articles point out, technology is only one part of a network of socio-technical actors and associated capabilities that influence e-participation outcomes. And so, we also need to be aware of the specific social and organisational capabilities that support implementation. For example, key organisational capabilities are the skills and guidelines that procurement officials need to acquire suitable technologies [26]. An example of a social capability is the ability and tools that community outreach officials may draw on to raise awareness about an e-participation project amongst different publics, and to build skills for effective use.

These task-level capabilities are enabled by wider institutional and political capabilities. Here, it is necessary to consider the ways in which e-participation becomes embedded in a local context through the stabilization of formal or informal rules, roles and resources [8, 27], as well as through power and meaning [19]. Practically, this may include legislation and regulations that define who can participate and how, and the allocation of financial resources for establishing and maintaining a project or technology [27].

There are also more informal institutional arrangements and processes that enable the continuous learning and adaptation which are critical for the adoption of innovations in the public sector [28]. We can draw from the experiences of community-based technology initiatives which often depend on collective 'ways of learning'; including joint problem solving and ensuring a shared sense of success (and identity) between implementing team and users [29]. This includes instilling a sense of ownership locally, and in acknowledging cultural values specific to different contexts [7].

Finally, for public officials involved in e-participation and similar innovative initiatives, a core capability is being able to navigate competing organisational, professional, elite and citizen pressures [5, 30]. e-Participation projects can become contested politically, especially if participation is likely to change governance relationships or the locus of power. As a result, elected officials, in particular, need to perceive the change as desirable and actively support it

[27, 4]. Inside their organisations, e-participation champions may need to give credit to superiors for innovative ideas, and leverage citizen feedback or stories to persuade colleagues [30].

2.2 Roles and values

The contested nature of e-participation, and its failures, is often put down to differences in culture and values [2], particularly between the more open and innovative e-participation process and more arms-length and procedural bureaucratic logics. As Rose et al. observe:

> "Values and norms that are incorporated in the concept of e-participation may be in conflict with the bureaucratic logic of public administrations … To reduce the conflict – and to increase the acceptance of e-participation among members of public administrations – it is important that either the public administration changes its culture and incorporates values and norms related to e-participation or that organizational members translate e-participation's values and norms to fit them to the bureaucratic logic." [13:79]

However, the literature on both public sector innovation and digital governance has highlighted how a wholesale change in culture is unlikely, and probably unhelpful [28, 31]. More important is an awareness of values associated with different individuals and roles, how these are associated with different project or even technology elements, and how distinctive values and capabilities may be enrolled to support implementation and use. For this paper we focus on seven overlapping categories of values synthesised from the wider e-governance literature [5, 28, 31, 32]:

- Professional values (excellence, legality, accountability)
- Efficiency values (value for money, productivity, cost reduction, performance)
- Ethics values (right and wrong, integrity, fairness, loyalty, honesty, transparency)
- Democratic values (democracy, legitimacy, deliberation, equity)
- Service values (citizen centricity, service quality)
- Political values (persuasion, network or resource mobilisation, power mediation, visibility)
- People values (human dignity, caring, relationships, self-efficacy, identity, solidarity)

These values may be associated with different purposes of technology use. For example, in the case of democratic values, ICT may be used to reveal the reasoning and actions of government, with the aim of increasing political legitimacy and citizen acceptance of authority. In the case of professional values, ICT may be used to enhance information processing and to support faster decision-making, with the aim of increasing the efficiency and quality of decisions [31]. The values may also be relevant to different stages of project implementation [32]. People and political values are particularly important in the early phases of a new initiative, with e-governance champions needing to convince public officials and citizens of the meaningfulness of new practices, such as through stories and metaphors, or through the vision and influence of leaders or peers [28, 30]. In later phases of testing and rollout, professional and efficiency values become more important, in requiring individuals who have strong organisational and financial management credibility, and in ensuring efficient, transparent administrative processes to acquire and allocate necessary resources.

To highlight how these values are relevant to public officials involved in e-participation, we can look at examples for four different, ideal-type roles [33]. First, the team of designers and developers building an e-participation web application are likely to prioritise *professional* and *service* values. Their focus is on ensuring the technology is

reliable, matches users' participation needs, and that it supports equitable access for all levels of (digital) literacy. In African contexts, e-participation initiatives will continue to be affected by unequal access to broadband connectivity, unreliable infrastructure and useful devices [9]; and so values related to performance and efficiency continue to be critical.

Second, the officials responsible for creating awareness about an e-participation technology in a community are likely to draw on *people* values by promoting its use via trusted local relationships. When explaining the benefits of the technology, they may refer to a mix of *professional* and *democratic* values in describing anticipated outcomes, such as more accurate planning of services and enhanced accountability of public officials. This role may go as far as supporting the development of social capital within communities as a moderating factor affecting the use of e-participation technologies [18], and the approach to and effectiveness of e-participation [34].

Third, the supply chain officials responsible for procuring technology may emphasise *efficiency* and *ethics* values in looking to run a fair and competitive bidding process, and in trying to find the lowest cost option.

Finally, and perhaps most fundamentally, we need to consider the values held by politicians and senior managers who are championing (or resisting) e-participation initiatives. Their views on (e-)participation will be shaped by their personal relationship to power, control and status [2] and, closely related, the dominant definitions and narratives of what democracy should look like. In a recent report to the European Parliament, the authors recall that the European Union derives its democratic legitimacy from representative democracy, as its *founding* democratic principle, but also from participatory democracy. Importantly, they argue, participation is not only adopted for instrumental means, for collecting more accurate information for decision-making, but also for allowing citizens to "take part in – *and possibly control* – the process of governance to which they are subject." [35:13-14, emphasis added]. Similarly, South Africa's Constitution provides the basis for the country to function as both a representative and a participatory democracy. Subsequent legislation (and case law) has reiterated in practical terms what 'good faith' participation involves but also noted that the public's view *may not necessarily prevail* over the decisions taken by elected representatives [36]. In these two examples we see how the interpretation of democratic values could vary, especially with respect to the primacy of representative or participatory processes, and especially for those who may be affected by changes in power and control.

Understanding how values affect (or are shaped by) e-participation can help practitioners plan the design of projects, to better navigate or mediate competing priorities, and can provide a lens for researchers investigating the success and failure of these initiatives. When looking to explore values, and building on the earlier discussion, it is important that we develop a granular picture of the processes, actors and resources making up an e-participation project. Given the importance of bricolage in African use cases, our hope is that a more modular view of the socio-technical system may empower local actors to adapt and integrate specific capabilities that are relevant to their context [3, 7, 18]. For this paper, the focus is on the roles played by public officials, and how they may enroll specific capabilities to realise certain objectives that align (or conflict) with their underlying values.

3 METHOD

The above discussion has outlined key concepts that could inform a more nuanced approach to understanding the different roles played by public officials in e-participation projects, and how these roles may be linked to specific capabilities and values. To assess the relevance of these concepts, we performed a desktop analysis of a sample of projects from selected regions.

Overall, the research involved a qualitative, desktop-based analysis of document and website information regarding a selection of e-participation projects. Project case studies were selected for maximum variation, with view to developing rich insights into the diversity of technology and project types [37, 38], and to understand the broad spectrum of capabilities and values that may be drawn on by public officials in Africa.

There were two cycles of information collection and analysis. The first cycle was initially deductive; with researchers guided by a starting set of capabilities, roles and values to help them identify and code relevant features or language. At the same time, we allowed for inductive coding of emergent themes that did not match the starting set of concepts which allowed us to update our concepts and information collection in the second cycle. Each cycle involved four main steps:

1. *Define scope of e-participation activities:* Researchers used existing research literature as well as policy documents and their personal experience with e-participation to define a spectrum of e-participation activities, and tentative public official roles and values. A key starting point was the UN DESA 'spectrum of e-participation' [9] and frameworks on e-participation [10, 11, 15] which provided a basis for defining the inclusion criteria in Table 1. The scope of activities was refined in the second cycle of collection and analysis.
2. *Map landscape of e-participation projects:* This step involved sourcing data on e-participation technologies and projects globally based on the inclusion criteria. Projects and technologies were mainly identified by browsing through various e-participation-oriented directories including; the Participedia repository[3], the African Civic Tech Atlas[4], the Civic Tech Field Guide[5], the CrowdLaw Catalogue[6], and the EU CORDIS repository of funded research projects.[7] The included initiatives were then mapped onto the spectrum of e-participation in Figure 1. The placement on the spectrum was based on the description of activities on the project or technology website, with reference to examples on the UN DESA diagram [9] and in similar spectrum-based classifications [10, 21].
3. *Scan capabilities and select projects:* Researchers used the capabilities identified in the review of existing research to scan the landscape of projects for different types of capabilities. From this scan, a small set of projects was selected for in-depth analysis based on the inclusion criteria in Table 1. These projects were sampled from different areas of the mapping to allow us to explore a sufficiently diverse mix of capabilities, and potential roles and values.
4. *Analyse selected projects:* From the technology and projects landscape, a sample of technologies and projects was selected based on the inclusion criteria outlined in Table 1. Content from project websites and other sources was then reviewed and categorised according to roles and values discussed in the previous section. The coding of text involved in-depth reading and reflection to consider whether the content referred to a technology or social-organisational capability, and which ideal-type public official role or value the capability was (or could be) speaking to [34, 38]. As a result, this relied on researchers interpreting the underlying meaning of the text, in terms of which audiences and objectives it was referring to, and then reflecting on whether this was explicitly or implicitly relevant to public official activities.

[3] https://participedia.net/
[4] https://civictech.africa/databases/
[5] https://directory.civictech.guide/
[6] https://catalog.crowd.law/
[7] https://cordis.europa.eu/

Table 1: Inclusion criteria

Criteria	Step 2: Map projects	Step 3: Select projects
Level of engagement and political outcome	Using the UN DESA spectrum of e-participation, projects at all levels and for all political outcomes were included.	Only projects from three distinct thematic areas outlined in Figure 1 below: *User & machine-actionable information*, *Direct public input on debates, policy & budgets*, and *Civic education, organising & moblisation*. Up to tweleve projects evenly distributed across the three thematic areas.
Participation stakeholders	Projects or technologies must have sought to support public engagement with any branch of government. The focus was on engagement by individuals and geographical communities, but could also have included engagement by organisations and intermediaries such as civil society, journalists, researchers and industry associations.	Same
Direction of engagement	The direction of engagement could have been more top-down government-to-citizen (G2C) or bottom-up citizen-to-government (C2G) or other variations, such as citizen-with-government (CwG).	Same
Nature of technology	Both low-tech and new or advanced technologies were included. This provided an opportunity for learning what novel approaches could be of use now or in the future, and for learning what is relevant for implementation in under-resourced areas.	Same
Date and current activity level	The focus was on projects and technologies that were established later than 2010, and that are currently active (by website or news updates) as of 2023.	Same
Type of technology and implementation model	Explicit development, use or governance of any ICT, both digital and analogue. The technology may have been developed by government, private sector or non-profit organisations, and could have been proprietary or free and open source.	Same
Scale and location	Development or use at any scale, from local to international, and in any country or region. However, the focus of data collection was on Africa-based initiatives.	The priority for inclusion was Africa-based initiatives, but where there was insufficient information on certain capabilities projects from other regions were included.
Available information about capabilities	Projects were included where they have an active web page with at least basic information about features or activities, in English, whether directly or via automated translation of text from another language.	Projects were prioritised for analysis where there was a significant amount of information available about capabilities, in English, in their own or other people's words.

4 RESULTS

In mapping the landscape of e-participation projects and technologies, over two hundred initiatives were identified for potential analysis, summarised in Figure 1. These initiatives were placed on the spectrum of e-participation

according to the level of engagement they support (y-axis) and the political outcome they aim to enable (x-axis) [9]. They were also colour coded according to whether they are:

- *Tech – FOSS*: Free and open source e-participation technology from anywhere in the world
- *Tech – propriet.*: Proprietary e-participation technology from anywhere in the world
- *Use case/ project*: A use case or project implementation technology, such as by a municipality or community-based organisation
- *Africa tech, use case/ project*: A technology, use case or project from any country in Africa

In addition, the technologies and projects were grouped according to seven main themes numbered in the figure. The first of these themes is *User & machine-actionable information* which indicates that these initiatives are primarily aimed at making government information accessible in a way that different publics can use for holding officials accountable or for their own decision-making. Government websites, traditional broadcast media and mobile phone-based services, such as USSD and SMS, are the most common approach used for information sharing. A key issue with these methods of information sharing is that the information is distributed in formats and ways that are not easy to understand and use for decision-making. In response, as can be seen in the figure, a large number of technologies and projects have been established to ensure the information or data is more actionable. This includes many Africa-based projects such as the Laws.Africa[8], Mzalendo[9] and Wazimap.[10]

Closely associated with the first theme is *Analysis, simulation & modelling* which draws on the above information to answer specific questions about government plans and performance. Aside from more traditional data-driven economic, environmental and other modelling, several other areas of niche innovation have emerged that are directly relevant to participation activities. For example, policy and legal data standards have been important for enabling Rules as Code (RaC). As a use case, policy actors and citizens can now simulate the effect of proposed legislation. Through LexImpact[11], French lawmakers and citizens have been able to evaluate the impact of proposed income and fuel tax changes on both government and household budgets. In Africa, much of the attention has been on data visualisation and data storytelling which aim to make analysis more interesting and engaging for public audiences. As a result, these activities are a key focus of the Africa Data Hub.[12]

A third theme is *Indirect mining & polling of views & data*. Here, there is a range of technologies which seek to help governments understand the preferences and perceptions of different publics. One example is the mining and analysis of conversations on social media to explore public sentiment on certain social or policy issues. The webLyzard platform was developed under an EU funding initiative and is used by the United Nations Environmental Programme (UNEP) to analyse public debates related to biodiversity, air quality and water.[13] It does this by analysing and visualising topic trends and sentiment using information published on social media, news platforms and the websites of private and public organisations. The more advanced version of the platform aims to forecast future topics and helps users identify opinion leaders to amplify messages.[14] There are other areas of data mining that governments may look to draw on to indirectly explore public interests and behaviour, including surveillance

[8] https://laws.africa/
[9] https://info.mzalendo.com/
[10] https://www.wazimap.com/
[11] https://beta.gouv.fr/startups/leximpact.html
[12] https://www.africadatahub.org/
[13] https://unep.ecoresearch.net/weblyzard/
[14] https://www.weblyzard.com/visual-analytics-dashboard/

and sensor data collected as people use public infrastructure. A more direct method of sourcing sentiment or preference information is via online surveys, and there are a number of social enterprises that were established primarily on or for the African continent in this area, such as Viamo[15], Moya[16] and Zlto[17].

Under the theme on *Direct public input on debates, policy & budgets* we see many web-based platforms and projects that aim to support more a more bi-directional exchange of information between governments and citizens. Typically, a national or local government will publish a policy proposal, such as a development plan for a specific location, and the residents of that area will be invited to make comments on the proposal via web form. This can extend to deeper levels of citizen control, especially in the case of participatory budgeting where residents' votes on the allocation of funds are binding, as in Décider pour Paris.[18] The mapping suggests that there are relatively few African initiatives of this kind. In some regions there are efforts to do similar but focusing on the more political end of the participation spectrum. These may be quite open ended. Kialo[19] and Parlia[20] aim to stimulate debate on various social and political issues, and to encourage awareness about different perspectives. These platforms are very close to the theme: *Engage with political actors & vote for candidates*. Usually projects in this area aim to support public engagement with their elected representatives, but can also including voting. Vota Inteligente[21] is a web application in Chile where citizens can see which election candidates endorse specific policy proposals, in addition to commenting on them.

On the other end of the political spectrum, African countries have seen the development of many applications supporting *Public monitoring of service delivery*. From Tracka[22] in Nigeria to Govchat[23] in South Africa, these tools enable public reporting of service delivery issues, requests for services, and monitoring of project implementation.

Finally, we have mapped projects that use technology to support more bottom-up *Civic education, organising and moblisation*. Whilst participatory budgeting is a form of government-delimited citizen control, there are many other initiatives that are community-established and led, although often with the support of external NGOs. As may be expected, these tend to be more political in seeking to pressure elected representatives on a policy, budget or service delivery issue. Two examples from South Africa, Asivikelane[24] and Codebridge Youth[25], place a strong emphasis on community-based actors collecting and using data to engage with government more effectively.

[15] https://viamo.io/
[16] https://moya.app/
[17] https://www.zlto.co/
[18] https://decider.paris.fr/decider/jsp/site/Portal.jsp
[19] https://www.kialo.com/
[20] https://www.parlia.com/
[21] https://votainteligente.cl/
[22] https://tracka.ng/
[23] https://www.govchat.org/
[24] https://asivikelane.org/
[25] https://codebridgeyouth.org.za/

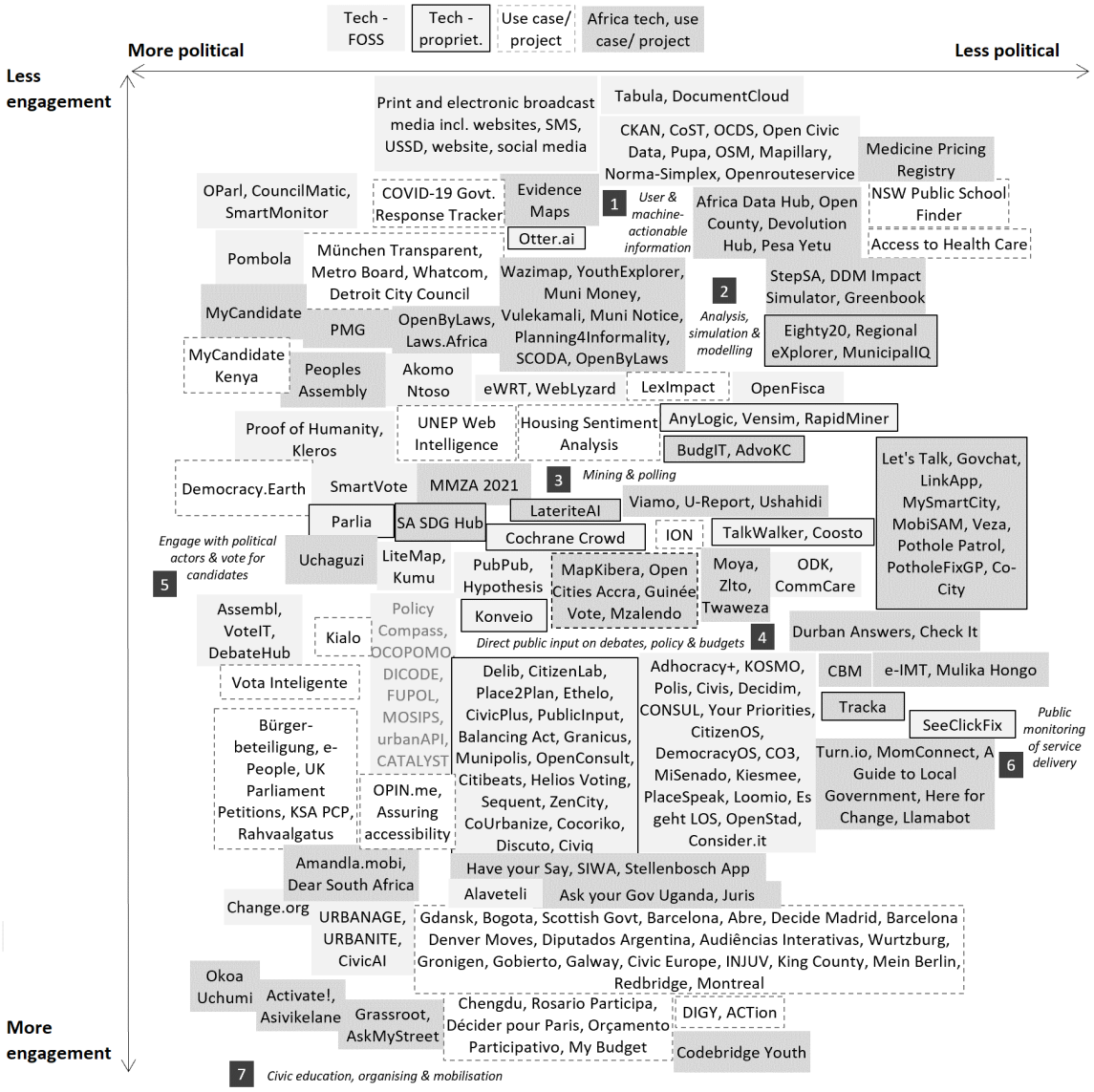

Figure 1: Mapping of e-participation projects and technologies on UN DESA spectrum of e-participation [21]

Our broader research aim is to identify necessary or useful technology, social and organisational capabilities in the e-participation projects mapped above, and to link these with typical public official roles and values. In the following analysis, an initial sample of projects is selected from three themes: *User & machine-actionable information, Direct public input on debates, policy & budgets,* and *Civic education, organising & moblisation*. For selected projects, we have collected information from websites or documents to explore distinctive capabilities that could be relevant to e-participation implementation in African public administrations. We have then mapped these capabilities to idea-type public official roles and values to provide an initial sense of who would be relevant to

implementation, and what their motivations may be. Each section concludes with a summary table listing the capabilities identified in the narrative, as well as the mapping to roles and values.

4.1 User and machine-actionable information

4.1.1Open government data

A key area of information curation relevant to (e-)participation is around open government data. The Africa Data Hub[26] aggregates data on various themes relevant to the continent. Its goal is to help public interest stakeholders make informed decisions by providing them with accessible and understandable data, usually through intuitive and interactive data visualisations or stories. Whilst the project originated as an effort to mainstream the use of data in COVID-19 reporting on the continent, more recently it has expanded to cover broader demographic and economic trends. This includes an inflation tracker and a strong focus on the climate crisis going forward.[27] A key feature for users is that they can easily combine and compare datasets on different issues and across countries or regions. Comparative data analysis is an important way to understand and communicate on social and economic issues.[28]

Data on the Hub is hosted on a CKAN instance. CKAN[29] is an open source data management system made available for reuse under an Affero General Public License (AFGL). CKAN is actively maintained by a large contributor community and is widely used for government open data platforms. Hub data is identified, extracted (such as from PDFs), cleaned and re-published in machine-readable format on CKAN. In addition, the data is published with extensive meta-data, which includes helpful guidance on what the data covers and how it is related to other datasets on the Hub.[30] Building and managing an effective data pipeline, with supporting meta-data and guidance on linked data, is critical for enabling downstream analytics activities.

The Hub targets newsrooms in Kenya, Nigeria, and South Africa by equipping journalists with the resources, data and skills they need to use data in their storytelling. The project also provides more direct support to journalists through data journalism training and fellowships, which includes mentoring, networking and funding. Interviews and blog posts from journalists are posted on the website in which they share on their data journalism journey. In this way, the project aims to build a "community of data journalists who can engage each other for support, resources and solidarity in their work".[31]

In recognising the broad geographic scope of the project as well as the diversity of partners, roles and skills involved, the Hub team has sought to define a common set of guidelines related to work practices and behaviour. Part of these guidelines are more technical in the sense of how the project works and what tools or processes are used, similar to this OpenUp handbook.[32] There are also ground rules and a Safeguarding Policy that cover interaction associated with professional and personal activities. This includes creating a welcoming and respectful environment for people from different backgrounds and outlining procedures for dealing with abuse and harassment.[33]

[26] https://www.africadatahub.org/
[27] https://www.africadatahub.org/blog/how-to-find-and-use-climate-data-about-africa-for-journalists
[28] For example, see COVID-19 Observer https://www.africadatahub.org/data-resources/covid-19-observer
[29] https://ckan.org/
[30] For example, see Inflation Data for Africa https://ckan.africadatahub.org/dataset/inflation-data-for-africa
[31] https://www.africadatahub.org/about
[32] https://openup.gitbook.io/handbook/
[33] https://www.africadatahub.org/code-of-conduct

Much of what the Hub does is built on the data, technology and governance experience of the project partners, who have independently or jointly established several similar open data initiatives. It is clear that a strong emphasis is placed on supporting an active community of users, which includes building capacity and facilitating positive interaction. These data platform initiatives are often connected to community-focused programmes, such as Codebridge Youth discussed below.

From a technology perspective, by publishing data under an open license, in a standard, machine-readable format, it is easier to integrate and compare data. It is also easier for developers to build applications that can serve specific citizen needs. For example, the MyCandidate application was developed for the recent Kenyan and South African elections to help voters identify who to vote for, and is built on data from the respective electoral commissions. The development of many e-participation platforms has been funded by grants from public or non-profit donors, on the condition that the code is made available via free and open source software (FOSS) licenses. FOSS licensing has supported local adaptation and innovation. In South Africa, the Planning for Informality[34] and Wazimap[35] platforms were built off internationally-developed FOSS. However, as the Wazimap website emphasises, localising the technology required a "huge amount of work".

4.1.2Legal and policy document markup

There are also now a number of projects on the African continent which specifically focus on making legal information more accessible through digital platforms, using common data standards. AfricanLII[36] convenes a network of country-level initiatives to digitise legislation and court proceedings which are then published online and via Laws.Africa. The digitisation is based on Akomo Ntoso, a standard data structure for representing legal documents.[37] At a local government level, Open By-laws[38] provides HTML versions of South African municipality By-Laws, which supports a number of useful features: an easy to navigate format, direct links to referenced legislation, pop-up definitions of key terms, a history of By-law revisions, and better indexing of content by search engines.

The focus of the Mzalendo[39] and Parliamentary Monitoring Group (PMG)[40] platforms is on documenting legislative processes in Kenya and South Africa. They host transcripts of parliamentary discussions and share information on draft legislation. Outside of Africa, München Transparent[41] and Los Angeles' Metro Board[42] provide regular updates on council meetings, decisions and documents in their cities. Information is organised and exchanged using the OParl standard for parliamentary information systems in Germany and the Civic Data Standard respectively. More recently, the COVID-19 Government Response Tracker developed at the University of Oxford sought to "help decision-makers and citizens understand governmental responses in a consistent way" using a transparent set of fields, values and criteria.[43]

[34] http://app.planning4informality.org.za/
[35] https://wazimap.com/
[36] https://africanlii.org/
[37] http://www.akomantoso.org/
[38] https://openbylaws.org.za/
[39] https://info.mzalendo.com/
[40] https://pmg.org.za/
[41] https://www.muenchen-transparent.de/
[42] https://boardagendas.metro.net/
[43] https://www.bsg.ox.ac.uk/research/covid-19-government-response-tracker

Whilst chief information officers (CIOs) in the public sector may have experience with data standards for ensuring interoperability between *internal*, departmental information systems, the above initiatives point to the importance of standards for enabling *external*, public engagement with information. At the same time, building data pipelines from diverse, unstructured sources is a key capability for these types of projects and most likely a focus of data specialists (or even a Chief Data Officer) in the public administration.

Many of the above initiatives are supported by transparency and accountability activists, as well as developers and entrepreneurs, outside of government. As a result, whilst public sector entities do open data, there is a often a large non-governmental community involved in defining data standards and 'liberating' data from proprietary document formats and hard-to-find sources.[44] This community is guided by frameworks and sets of principles, such as the Open Data Charter, [45] which have themselves have informed other principle, ethics and rights-based technology implementation guidelines used by developers on the Africa Data Hub and elsewhere. For CIOs or data specialists looking to build pipelines, there will be a need to define suitable models of interacting. These are likely to go beyond the traditional, transactional or corporate public-private partnership arrangements; and may be based more on commons-based principles such as mutual responsibility and shared benefit [39]. Communications or outreach managers within government could be important for supporting engagement with public data communities.

An example of such principles is contained in the Open Data Charter[46], which has informed other principle, ethics and rights-based technology implementation guidelines, such as around local government open data policy[47], and elsewhere. A key related instrument is personal data protection legislation which many African states have made progress enacting, and which more formally defines a responsible approach to data collection and sharing which public officials can draw on. This is supported by practical tools and templates such as data protection impact assessments (DPIAs).[48] Legal departments can help project managers and data specialists interpret legislation and apply these templates. Of particular interest going forward is how the developers of machine or deep-learning tools incorporate similar principles and practices when deploying generative artificial intelligence (AI) and similar applications for government-citizen engagement.[49] In India, the Ministry of Electronics and Information Technology is promoting a handbook that provides guidance on responsible AI development.[50] In the following table, we summarise the capabilities identified in the above analysis and indicate a potential public official role that would champion each capability, along with the values underlying that role.

Table 2: Capabilities, roles and values for user and machine-actionable information

Capability description	Public official role(s)	Value(s)
Establish data pipelines (manual or automated) from diverse, unstructured sources	Data specialist	Professional
Host and share information using open standards such as Akomo Ntoso or OParl	Data specialist	Professional

[44] https://www.up.ac.za/geography-geoinformatics-and-meteorology/news/post_2181233-map-driven-story-telling-joining-the-open-data-liberation
[45] https://opendatacharter.net/
[46] https://opendatacharter.net/
[47] https://c4ir.co.za/all_projects/reimagining-and-reinventing-open-data-policy-within-local-government-environment/
[48] For example, see EU guidance on how to conduct a DPIA https://gdpr.eu/data-protection-impact-assessment-template/
[49] https://www.oecd-ilibrary.org/governance/hello-world_726fd39d-en
[50] https://indiaai.gov.in/research-reports/handbook-on-data-protection-and-privacy-for-developers-of-artificial-intelligence-in-india

Capability description	Public official role(s)	Value(s)
Compile extended meta-data and guidance on data linkages to help publics understand and use data	Data specialist	Professional, People
Present information using open, standard, web-based formats to enable interaction and increased discoverability by users and search engines	Interface designer/ developer	Professional
Encourage data visualisation and data storytelling for enhanced (visual and emotional) connection with public consumers of information	Interface designer/ developer, Data specialist, Communications, Public participation	People
Support or build a community of stakeholders that can help to digitise and extract ('liberate') data	Data specialist, Stakeholder partnerships	People, Professional
Open licensing of data and tools to encourage reuse, to support an active developer community and to prevent contract lockout	Data specialist, Legal	Ethics
Interpret personal data protection legislation and develop DPIA templates to support responsible data governance	Legal, Project manager	Professional, Ethics
Handbook or guideline for developers on responsible data and AI implementation	Legal, Data specialist	Ethics
'How-we-work' handbook, code of conduct, safeguarding policy to guide practices and behaviour of team members and community partners	Project manager, Stakeholder partnerships, Legal	Ethics, people
Fellowship programme to support peer-mentoring, networking and solidarity amongst data users	Stakeholder partnerships, Human resources	People
Publish video stories by data users to help inspire other potential users	Communications	People
e-Learning and in-person training	Human resources	Professional

4.2 Direct public input on debates, policy and budgets

4.2.1Consultation and deliberation web applications

As noted, there are relatively few Africa-based projects supporting direct public input on public interest decision-making. The majority of platforms identified during the research came out of Europe, with use cases there and in other parts of the world. Ahocracy+[51] is one of these and is an end-to-end e-participation management tool. For example, during 2021, Stadt Lindau in Germany implemented a hybrid online/ offline, participation process to engage residents on development plans for the Karl-Bever-Platz area.[52] Key steps described on or supported by the platform included:

1. Formally gaining approval for the process via the City council;
2. Convening a representative 'participation group' of citizens to deliberate and make recommendations;
3. Running an online opinion survey and idea collection for the wider public;

[51] https://adhocracy.plus/
[52] https://beteiligung.stadtlindau.de/projects/karl-bever-platz/?initialSlide=0

4. A review and synthesis of online inputs by the participation group and announcement of recommendations; and
5. Submission of recommendations to City Council for decision.

If used in this way, the participation process is transparent and it ensures that people who do make inputs get feedback on how their submissions were incorporated into the final recommendations or actions.

There are several consultation and deliberation platforms similar to Adhocracy+ which have been used by towns, cities and national governments. Two of the more prominent ones are Decidim[53] and CONSUL[54] which have been adopted across Europe and South and Central America.

From an implementation perspective, CONSUL recommends "certified and collaborating companies" who can provide installation, development and maintenance services for entities looking to adopt the application. Similarly, Decidim recommends partners who have formally committed to sustaining the technology.[55]

Decidim has also formalised a community structure for the platform called Metadecidim, in which members collaborate "in the design of the platform and the construction of the project".[56] This includes transparently publishing information on meetings, decisions and the roadmap of features.[57] As a lead user of Decidim, the City of Barcelona has promoted the activities of DecidimFemDev which aims to equip women to shape the direction of the Decidim platform development.[58] This kind of initiative is important for ensuring e-participation platforms more actively respond to and reflect the priorities of traditionally marginalised actors. For governments, being able to support this type of distributed community of tech enthusiasts and associated activities, in an inclusive way, is likely to be a new social capability they would need to develop. Stakeholder engagement and community outreach officials could potentially support technology specialists in establishing these relationships.

4.2.2Automated and augmented moderation

One of the key challenges with online consultation and deliberation platforms is how to facilitate constructive inputs and debate, and to prevent abuse of the process or other participants. Reflecting the aspirations of many of these initiatives, the founder of Kialo describes how they developed the application as "a hub for civilised debate — no shouting, rudeness or irrationality allowed."[59] Uganda's Ask Your Gov[60] platform is very active, but most of the queries are related to personal internship and job applications at government entities. This highlights the immediate engagement priorities of citizens as well as the possibility that the original goals of public participation may become diluted.

As a result, the moderation of online interactions is an interesting area of innovation, and can be human or technology-driven, or a mix of both. Adhocracy+ has been exploring AI-supported moderation through Kosmo, which aims to reduce the need for human oversight, facilitation and synthesis of online discussions.[61] Similarly, Polis augments human moderation with automated 'comment routing', as a semi-random way to prioritise which

[53] https://decidim.org/
[54] https://consulproject.org/en/
[55] https://decidim.org/partnership-policy/
[56] https://decidim.org/community/
[57] https://meta.decidim.org/
[58] https://ajuntament.barcelona.cat/digital/en/iniciativa_ecosistema/decidimfemdev
[59] https://www.kialo.com/about
[60] https://askyourgov.ug/
[61] http://kosmo-moderation.de/ueber-kosmo.html

comments are displayed in the participation interface for voting.[62] Kialo[63] is a more open portal for debate on social issues and focuses on how arguments for or against a position are presented, breaking complex discussions down into layers of input. For the public participation leads and technology developers implementing public participation platforms in government, these examples provide useful insights into how interfaces and workflows can support not just information collection but also a multi-way conversation.

Another enabler of effective participation is to ensure that questions are understandable and that they elicit responses that can inform decision making. Youth Talks is a programme in which young people share their opinions and ideas, providing a space for them to express themselves and connect with like-minded individuals. It is implemented on the Assembl platform. Visitors to the platform are asked both closed and open-ended questions, with responses captured in text, audio or image formats. Through semantic analysis, similar to the modelling introduced earlier, inputs are clustered to identify areas of consensus or divergence.[64] The approach to guiding input may also be more low-tech, as implemented by the Australian Department of Social Services in its consultation on a Draft National Disability Advocacy Framework. Here, they provided an easy-to-read submission guide with plain language questions, which was available in multiple languages, as audio and as a sign language video.[65]

Closely linked to moderation is how to manage identity and anonymity in online environments. On Polis there are a few possible options. As the default setting, anyone can add a comment, as long as they are logged in via their Twitter or Facebook account. However, anyone can vote *without* logging in. Polis also offers alternative methods of identity management. For example, anyone can comment or vote without logging in, but a cookie is set on the web browser to prevent commenting and voting multiple times – although there are workarounds if someone is looking to bypass this control. By not having to log in, participants may feel more anonymous and therefore happy to share honest inputs. As a further alternative, a closed group of participants can be provided with a unique, single use URL to allow them to login and participate, whilst still remaining anonymous. Finally, participants may be linked to an identity on an external database, for a more managed approach.

In government-led initiatives there is often a requirement for more formal identifiers and geographical or citizenship limits on who can participate. The United Kingdom (UK) petitions platform only allows participation by British citizens and UK residents, and they therefore collect name, email, post code *and* internet protocol (IP) address – which can be used for location verification. Some country or region-focused initiatives may require verifying one's identity via a direct link to the national population register. More recently, there have been initiatives exploring alternative approaches to online identity verification using blockchain, such as Proof of Humanity.[66]

A final process consideration is around provenance, to ensure transparency around what comments were received, how they were moderated and synthesised, and how they link with the final policy recommendations and decisions. For Polis, the 'preferred practice' is to release the full data of a conversation when it is finished so that participants can see all (anonymised) comments, including those that were moderated out. Adhocracy+ and similar platforms encourage facilitators to document all online and offline activities, to ensure transparency and visibility into what has happened. In government environments, the choice of verification approach and publishing of participation records would likely be championed by the public participation lead, with support from legal and technology specialists who better understand the risks and technology options.

[62] https://compdemocracy.org/comment-routing/
[63] https://www.kialo.com/about
[64] https://youth-talks.org/en/method/
[65] https://engage.dss.gov.au/national-disability-advocacy-framework-2022-2025/the-framework/
[66] https://proofofhumanity.id/

4.2.3Capacity building for e-participation facilitators

As much as automated methods offer interesting possibilities, both Kosmo and Polis continue to emphasise the role played by human moderation. This leads to questions about how active the moderator will be, in seeding or guiding conversations, and their latitude in removing irrelevant or abusive comments. And highlights the importance of providing guidance to facilitators and building their capacity to manage online interactions.

DIGY is a European programme that aims to help young 'initiators' facilitate engagement via the online platform Opin.me. On Opin.me there are six digital public participation templates[67] that initiators can use, from running a poll to discussing texts and brainstorming ideas. DIGY also provides capacity building and networking opportunities for initiators.[68] An important part of DIGY are the e-learning videos that address different phases of the participation process, including one on how moderate online discussions.[69] A strong emphasis is placed on privacy and data protection, to ensure the safety of participants.[70] This includes recommending the use of pseudonyms for online registration, educating participants about the risks associated with sharing personal information, running a private participation process, and/or inviting participants to an in-person meeting. In general, as with the more automated platforms discussed earlier, facilitators are encouraged to be transparent: about how the process works and the expected behaviour of participants. Facilitators are therefore encouraged to clearly define and communicate a code of conduct. Such practices could be useful for communications or public participation officers in government entities, especially those managing social media accounts where there are comments and discussions that can be unrelated to the topic of interest or that can become abusive.

Table 3: Capabilities, roles and values for direct public input on debates, policy and budgets

Capability description	Public official role(s)	Value(s)
Approach and tools for managing online identity and anonymity	Interface designer/ developer, Public participation	Professional
Automated or augmented moderation of online conversations	Interface designer/ developer, Public participation	Democratic
Technology interface design to support multi-way deliberation using structured, multi-layered presentation of comments and arguments	Interface designer/ developer, Public participation	Service
Transparent record of participation process, inputs and outcomes	Interface designer/ developer, Public participation	Democratic
Clear depiction of online (and offline) participation steps and outputs on web page or application	Interface designer/ developer, Public participation	Democratic, Service
Process design to ensure transparency of engagements and provenance of inputs, and to provide feedback on recommendations or outcomes	Public participation	Democratic
Privacy and safety awareness, guidelines and enforcement mechanisms, especially with respect to minors	Legal	Ethics
Code of conduct outlining expected behaviour of participants	Legal, Public participation	Ethics

[67] https://opin.me/en/start-your-project/
[68] https://digy-project.eu/about-us/
[69] https://opin.me/en/help1/participation-phase/
[70] https://opin.me/en/help1/preparation-phase/

Capability description	Public official role(s)	Value(s)
Training programme and templates for facilitators of online conversations	Communications, Public participation	People, Professional
Recommended or certified service providers for platform development and operation	Project manager	Professional, Efficiency
Promoting the involvement of women and non-binary developers in the design and implementation of the platform	Interface designer/ developer, Stakeholder partnerships	People, Professional

4.3 Civic education, organising and mobilisation

4.3.1Community-led engagement

Grassroot, a South African civic tech startup, describes its USSD and app-based tools as offering "(s)imple ways to create and manage groups over low-end phones with little bandwidth".[71] The platform is designed for community organisers in marginalised areas, to enable bottom-up action and engagement with government and other external stakeholders. It allows people to participate in large-scale social campaigns, have discussions, and form their own community groups. It empowers members to collaborate and work together by facilitating communication and coordination.

This platform has features for creating groups, voting for priorities and calling meetings. It allows members to vote anonymously and quickly on decisions, and to receive results as soon as the poll ends. Technology adoption is supported by an ambassador programme for "direct outreach and fieldwork in marginal communities"[72], and for linking with broader advocacy or mobilisation campaigns being coordinated by partners.

Significantly, from an implementation perspective, as outlined in a recent guide, the founder of Grassroot describes his experience developing a 'technology-for-good'; and suggests that "the forces of contemporary thought, funding and status will push you towards building what should not be built, with teams who don't know how to build it" [31: 4]. He emphasises the need for critical reflection on whether technology is actually required, and to avoid building (or implementing or using) technology as far as possible. If the decision is made to build technology, then the focus should be on team structure, the recruitment process and having a good senior technology lead.

In a different form of bottom-up action, the Codebridge Youth initiative is "(b)ridging the gaps between government and citizens"[73] by supporting youth-led, data-driven engagement with municipal planning processes. This is done by providing training on digital literacy, data, and local planning methods; and by facilitating the establishment of youth councils to coordinate discussions and submissions to the municipality. Participants are introduced to (open) data platforms available in the South African context to help them source and assemble data related to local social issues. The implementing team works with local civil society partners and/ or public participation officials from government to institutionalise the engagement pathway.

There is a strong focus on capacity building and community building across the above initiatives. There is also a caution about using or building new technology. Rather, the emphasis is on equipping participants with the skills to navigate and use a range of existing, relatively low-tech digital and data tools to meet their engagement needs.

[71] https://www.grassroot.org.za/
[72] https://www.grassroot.org.za/about
[73] https://codebridgeyouth.org.za/about

This is similar to what is being done in other parts of the world. In Nepal, for example, researchers have been working with communities to develop videos on challenges they face with respect to health issues, and to use these for raising awareness in the community and to engage policy officials.[74]

4.3.2Government-defined empowerment

Governments in many countries have implemented petitions as a way to enable more citizen-led engagement. Petitions are usually governed by legislation which defines who can start one, who may sign it, and at what point it enters formal policy deliberation. For the UK parliament, petitions may be started and signed on a government-hosted website.[75] Only British citizens and UK residents may start or sign a petition. If a petition gets more than 10,000 signatures, the government will respond. If a petition gets more than 100,000 signatures, then it will be considered for debate in parliament. In South Korea, the e-People platform also allows overseas Koreans and foreigners living in Korea to file a petition. It is framed both as a tool for addressing issues with specific government agencies as well as for submitting ideas and making proposals on how policies can be improved or money saved.[76]

Otherwise, as noted, Paris has been a visible promoter of participatory budgeting, which is now delivered via the Décider pour Paris platform.[77] There have also been experiments integrating expert and citizen input around complex global issues. In the lead up to COP26 a global citizen assembly deliberated on a core question related to the climate crisis to develop a public statement and principles to guide policy-makers. The process included several rounds of drafting, discussion and input from speakers.[78] South Korea's My Budget process similarly included citizen submission of ideas and voting, an expert committee, and review by policy decision-makers.[79]

Whilst the above cases are community-oriented, it is important to consider the capabilities and associated values being promoted, and to what extent they could resonate or conflict with those of public officials. Also, government entities may draw on these capabilities in the design of initiatives and for organising internal teams.

Table 4: Capabilities, roles and values for civic education, organising & mobilisation

Capability description	Public official role(s)	Value(s)
Tools for creating groups, arranging meetings and managing collective decision-making on low-tech devices/ low bandwidth connections	Interface designer/ developer, Public participation	Professional
Algorithms and interfaces for organising, weighting, synthesising and presenting different knowledge types (e.g. academic vs. community)	Public participation, Interface designer/ developer	Democratic, Professional
Modular designs and open interfaces to enable data sharing and easy integration of different tools	Interface designer/ developer	Professional
Clear processes, rules and thresholds for how government responds to citizen-led engagement (e.g. petitions)	Public participation, Legal	Democratic, Professional
Clarifying the role and value of community-led initiatives and citizen knowledge amongst government stakeholders	Public participation	Democratic

[74] https://ce4amr.leeds.ac.uk/projects/caran-2/
[75] https://petition.parliament.uk/
[76] https://www.epeople.go.kr/petition/csvc/csvc.npaid
[77] https://decider.paris.fr/decider/jsp/site/Portal.jsp
[78] https://globalassembly.org/the-process
[79] https://oidp.net/en/practice.php?id=1236

Capability description	Public official role(s)	Value(s)
User and community research methods to explore how engagement does and can happen, and what technologies could be suitable	Public participation, Research, Interface designer/ developer	Professional, People
Promote active experimentation with existing, low-tech tools instead of passive acceptance and use of new platforms	Project manager, Public participation	People, Democratic
Ambassador programme for outreach and to connect e-participation with grassroots campaigns	Stakeholder partnerships	People
Support self-organised learning and identity formation around (e-)participation (in communities and inside government)	Public participation, Human resources	Democratic

5 DISCUSSION

It is evident that the implementation of e-participation initiatives involves the assembly of various capabilities. From the perspective of African governments, these capabilities are likely to be managed or adopted by a diversity of public officials playing different roles which are themselves associated with distinctive values. Much of the previous research has described the conflict between traditional bureaucratic values, such as legality and efficiency, and the democratic and people values being promoted in e-participation projects. Whilst conflicts and tensions are inevitable, we see that there is an opportunity for considering how certain values may support or complement each other. Project managers may then consciously look to mediate the interaction between different roles and values [40] as a way to actualise the capabilities identified as relevant to the local needs and context.

The case studies in this paper were selected from polar ends of the engagement spectrum, with the goal of capturing the variety of potential capabilities, roles and values that African public officials may need to draw on. The final set of projects focused on the use of technology to support *Civic education, organising & mobilisation* as the most 'empowered' form of e-participation. Here, governments need to consider how they will support and/or respond to community-led engagement. One of the key impediments, especially in the more hierarchical African government contexts [ref mismatch values old paper], is political, public administration and expert skepticism about community-driven processes and the value of local knowledge. As a result, public participation managers will have to work strategically within political and power structures to gain necessary support [Joshi ref]. At an operational level, they would need to enroll professional legal expertise and technology developers to design consistent and reliable rules, processes and systems for ensuring bottom-up engagement can be incorporated into government policy decision-making. In addition, and critical to African environments, is the need for systematic and rigorous user or community research and design processes to understand how people currently (or may want to) engage, and the ways in which *existing, low-tech* tools can be adapted to support these efforts. In summary, whilst democratic and people values are relatively prominent in this set of projects, probably because of their more advocacy or activist character, but the effective implementation of community-led processes would nonetheless depend heavily on professional and efficiency-oriented roles.

On the other end of the engagement spectrum, the selected case studies focused on *User & machine-actionable information,* usually by making government data available in a way that can enhance government accountability but also enable improved citizen decision-making. Here we see strong professional values linked to the technology and legal capabilities needed for building data pipelines, aligning with data standards, addressing privacy risks, and

managing the opening and licensing of government data. However, some of these projects have also sought to address more social challenges related to open government data - such as limited use, but also diversity in what data is sourced and who does data sourcing and communication.[80] We therefore see capabilities aimed at building peer-learning networks and solidarity amongst potential users (such as journalists), as well as handbooks and codes of conduct on acceptable behaviour in these communities. In fact, for public officials, and especially for project managers and stakeholder partnership individuals, it is important to consider how government may interface with these commons-oriented communities (instead of more traditional, transactional PPP-like partnering models) [39].

Similar findings are evident around technologies and projects supporting *Direct public input on debates, policy & budgets,* where there is an emphasis in other regions on involving more women in the design and development of platforms that affect them. In addition, there is a need for capabilities to be built around the moderation of online conversations, especially when these take place on social media. These capabilities must be supported by professional public participation and legal expertise for the development of guidelines, such as on whether comments can be deleted or participants removed. Closely linked is the need for transparency (and feedback), a democratic value, about how the participation process works and its outcomes. Technology, including AI-based tools, can play a role in automating or augmenting certain processes, but their implementation should be informed by process and ethics requirements.

6 CONCLUSION

As in other regions, African governments are looking to emerging technologies as way to enhance the inclusiveness and accuracy public participation activities. However, the implementation of e-participation initiatives can be complex and depends on several public officials playing distinctive roles; from defining requirements and procuring systems, to designing workflows and training stakeholders.

Research on e-governance in Africa has shown the distinctive challenges (and opportunities) around technology implementation on the continent, such as the design-reality gap between source and host contexts [6] and the local, social processes of technology appropriation [18, 41]. On the other hand, little is known about the specific roles that public officials play in these design and appropriation processes, and how this can lead to success or failure of e-participation initiatives in particular.

Through our analysis we aim to better understand the specific technology and social capabilities needed to implement e-participation in African public administrations, and to scope the roles that could drive adaptation for the local context and needs. Critically, we see that these roles are underpinned by certain values which may align or conflict with the values embedded in different capabilities, which can affect individual motivations and the sustainability of ongoing work. For example, many African states have enacted personal data protection legislation and government legal specialists, grounded in ethical and professional values, will need to help e-participation project managers interpret and apply privacy rules during design and implementation. Elsewhere, technology and stakeholder management officials will (need to) draw on people values in establishing and managing government collaboration with civic technology actors on the development of shared platforms.

Further research is needed on where value conflicts could arise and their implications for e-participation outcomes. A key question is whether the direct interaction between public officials and citizens enabled by technology undermines or strengthens social capital, and the extent to which it enables already powerful actors or

[80] For example, see Africa Data Hub https://www.africadatahub.org/

undermines representative democratic functions [42]. In addition, more knowledge is needed on how value conflicts have been mediated, in similar or different environments [40]. This would provide useful guidance to e-participation practitioners on how to design project teams and wider governance arrangements. Finally, we need deeper insights into what happens in practice, both at failed and operational e-participation initiatives.

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