

Refreshing Singapore's Social Compact Through Citizen Engagement

Modalities, Challenges and Possibilities

CAROL SOON¹

Senior Research Fellow &
Head, Society & Culture

CHEW HAN EI¹

Senior Research Fellow

DEON TAN

Research Assistant

Institute of Policy Studies
Lee Kuan Yew School of Public Policy
National University of Singapore

¹Principal Investigator
NUS Centre for Trusted Internet and Community



Centre for Trusted
Internet and Community

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Modalities, Challenges and Possibilities

Executive Summary

Governments are increasingly replacing top-down approaches of governance through co-creating solutions with citizens, using deliberative, collaborative and participatory mechanisms. Advancements in online communication technologies in recent decades have fuelled governments' adoption of new channels to improve citizen engagement.

The current review focuses on the new modalities of civic participation made possible through developments in technology. The review begins with an overview of changing government-citizen dynamics and expanding modes of citizen participation. It examines new tech-focused deliberative processes employed by governments around the world. The section also discusses new possibilities in the online space brought about by Web 3.0 technologies.

The latter sections of the review identify the potential challenges and existing gaps through an examination of global indices for civic participation, frameworks, policies and processes. In this part of the review, we provide successful case studies that Singapore can learn from and adapt to the local context, and how our current participatory processes can evolve. The recommendations offered in the report are intended for policymakers and practitioners.

Technology and Citizen Participation in Governance

Technological advancements have had a tremendous impact on citizen participation. Tech-based tools (i.e., participation tools built on technology essential to their operation) and tech-supported platforms (i.e., existing participation modalities enhanced by technology) have provided increased opportunities for citizen participation, allowing both governments and citizens to leverage technology for alternative means of participation. For example, the Singapore Government Digital Portal created by GovTech enables designers and developers to share resources and collaborate with the government on solutions (Feng, 2020). In Brazil, the e-Democracia portal employs Wikilegis, a platform that allows citizens to collaboratively draft bills online (Simon et al., 2017). Multi-functional participation platforms that combine different tools such as ideation forums, consultations and e-petitions are an increasing trend worldwide, paving the way for smarter crowdsourcing online.

Especially promising are the innovations surrounding Web 3.0 technologies, including blockchain, decentralised autonomous platforms and, more broadly, the metaverse. Several digitally advanced countries such as South Korea and Estonia have begun experimenting with these technologies to deliver public services and enhance civic participation. In the city of Miami, the Social Coin initiative identifies community challenges using artificial intelligence and rewards blockchain-powered coins to incentivise civic participation in offering solutions. Across the globe, the Taiwan government's augmented deliberation project, Holopolis, uses virtual reality to build immersive environments that help citizens gain better knowledge of concerns raised and

participate more effectively in deliberative sessions. Even in their nascent stage, Web 3.0 technologies have shown their potential in improving government-citizen relationship while offering alternative avenues for civic participation.

Globally, the Singapore government is renowned for the efficient delivery of citizen services. Singapore's "whole-of-government" approach towards civic engagement aims to be people-centred and incorporate public perspectives into decision-making and service design. The UN E-Government Survey's E-Participation Index ranks Singapore in the 6th spot globally, following region leaders South Korea (1st) and Japan (4th). In particular, Singapore was rated highly for its provision of e-services such as a one-stop-shop government portal (Gov.sg) and specialised channels for participation online (REACH). However, the Democracy Report 2022 by the V-Dem Institute finds that deliberation is lacking in local civic participation processes, citing the lack of reasoned justification as an important factor influencing deliberative participation. Overall, there are existing gaps in the areas of transparency and justification that warrant closer scrutiny.

Gaps and Recommendations

Our review of existing engagement initiatives has shed light on several perennial challenges faced by both the government and citizens when interacting and collaborating with each other. The challenges have been categorised into: (i) those relating to existing public initiatives in Singapore; (ii) those pertaining to Web 3.0 technologies; and (iii) general challenges (e.g., ensuring inclusion and lag time to action). We identify Singapore's strengths and weaknesses with reference to global case studies, discuss the need for interventions, and make recommendations for improving citizen participation in Singapore.

Recommendation	Description
Appropriate representation and inclusion	Engage disadvantaged segments of the population by ensuring accurate representation of views, overcoming barriers to participation, as well as providing both offline and online modes for participation.
Managing citizen expectations	Build effective feedback systems between formal decision-making and participation procedures to encourage committed participation.
Digitally-secure civic engagement	Adopt a “sandbox approach” to ensure a safe and secure digital environment for citizens to participate online.
Trust and transparency	Embrace a bottom-up strategy where citizens are seen as collaborators and policy decisions are communicated with good justification.
Matching tools with the purpose and issue	Be clear about whom are being engaged and why, and then tailor activities accordingly.
Evaluating process, outcome and impact	Evaluate civic engagement through measuring the process, in particular how engagement is conceived and delivered. The METEP and Civic Engagement Framework can be adapted for local evaluative processes.
Build foundation for Web 3.0 application	Focus on developing institutional capacity, clarifying and adapting offline rules for the online space, and co-designing with citizens to build the foundation for a future powered by Web 3.0 technologies.

As the government moves to involve larger segments of the population in policymaking, they should focus their efforts on ensuring that active participation can happen across new modalities and platforms for everyone.

1 Overview

Advancements in online communication technologies in recent decades have led to the adoption of new modalities to improve government-citizenship engagement. As citizens and governments increasingly take to the digital space to interact with one another, new rules of engagement must be put in place to take advantage of the myriad opportunities to engage with different segments of the population.

Against this backdrop, this report examines the principles that should guide the development of citizen engagement processes that will advance partnerships and trust between government and the people. Drawing from case studies from both global (South Korea, Taiwan, Brazil) and local contexts, we will review the effectiveness of deploying technology to enhance civic engagement across different modalities and stages of policymaking. Most importantly, we will delve into existing gaps and challenges and explore what more needs to be done to ensure that no one is left behind in democratic processes that seek to engage citizens in co-governance.

1.1 Methodology

For this report, we conducted a literature review that synthesised about 185 secondary sources¹ comprising academic research, consultancy reports, policy research, intergovernmental research, press releases and news publications. Key search terms that were used included “citizen participation”, “deliberative democracy”, “civic engagement”, “open policymaking”, “co-governance” and other related terms specific to each section. This review was conducted online from December 2021 to May 2022. Current, Singapore-based and diverse sources were included wherever possible.

As part of this landscape review, we also conducted in-depth interviews with domain experts from around the world on their thoughts about improving civic engagement. The four domain experts comprised two professors who are thought leaders in the field, an Organisation for Economic Co-operation and Development (OECD) researcher specialising in democratic innovation, as well as a designer from the public space. They are:

¹ More than 185 sources were reviewed and only the publications used were included in this count.



Claudia CHWALISZ
Crock Public Service
Fellow at Crick Centre,
The University of
Sheffield



James S. FISHKIN
Professor of
Communication &
Political Science,
Stanford University



LIN Shu Yang
Design Consultant,
Public Digital Innovation
Space (PDIS), Taiwan



PARK Han Woo
Professor of Media and
Communication,
Yeungnam University

The interviews were conducted online in April 2022. Each interview was recorded with consent and lasted on average one hour (see Appendix for the interview guide). Direct quotes from the interviews can be found throughout the review where we thought they were most relevant.

The current review focuses on identifying the opportunities and challenges in civic engagement for Singapore. It includes the theories and frameworks for understanding different types of civic participation and discusses the components of participatory democracy as well as the factors that impact participation. We also reviewed global case studies through an examination of global indices for participation, international and local strategies, frameworks, policies, and programmes. At the end of this review, we provide evidence-based policy recommendations adapted to the local context and propose how current Singapore's social compact can be refreshed through the evolution of co-governance initiatives.

2 Civic participation and co-governance

According to German philosopher and sociologist Jürgen Habermas, a democratic society is premised on people's ability to reason and communicate freely in a shared social space that is free of political persecution or censorship (Habermas, 1989). A few decades on, the defining characteristic of functioning democracies today has evolved beyond such freedoms to the active involvement of citizens in shaping policy decisions. Citizens are increasingly involved in "collective decision-making process that combines elements of direct and representative democracy" (Metropolis, n.d., para. 1). Co-governance involves a "process of participatory management in which decisions are made at the lowest levels possible, thereby recognising the decision of each member equally" (*Co-Governance*, 2019). Citizens are placed in the position to make policy suggestions, which are then used as inputs by the government and policymakers to formulate and execute policies.

Civic participation by the people, through a variety of non-political and political actions to improve or change the society, demonstrates a sense of connection to and interest in the community (Chee, 2020). Citizens' participation often has wider and unseen effects. Their participation in the political and electoral process facilitates the resolution of issues in other parts of societal life, such as poverty and public health. For example, electing community leaders who promote low-income housing can help to alleviate the problem of homelessness in the precinct.

There have been several shifts in how citizens engage with issues, which bear implications for the community, the society and the country. First, the widespread adoption of the internet has fuelled the growth of transboundary connections and personal expression. When people get involved in causes, they are more likely to get involved in those that are personally relevant to them (Sloam & Henn, 2017). Second, civic participation is also shifting away from traditional parties and politicians and toward companies, brands and global policy forums, covering issues ranging from social inequalities, fair trade and environmental issues (Choi & Cristol, 2021). Longer-term affiliations with political parties and institutions is giving way to issue-oriented, short-term and transitory forms of activism as well as "connective action" where "taking public action or contributing to a common good becomes an act of personal expression" (Bennett & Segerberg, 2012, p. 752).

While there has been much research conducted on top-down, government-led engagement with citizens, the literature on bottom-up collaboration is more diffused and fragmented, despite growing interest in the domain (Brandsen et al., 2017; Edelenbos & Van Meerkerk, 2016). The two modalities have different dynamics and frequently, different goals. However, they can sometimes overlap. For example, engaging citizens on policy suggestions (as a type of top-down initiated collaboration) might encourage citizens to band together and come up with their own ideas, and to oppose or counter-propose government-led policies.

2.1 Government-led collaboration (top-down)

Denters (2016) refers to government-led collaborations as "invited spaces of participation". There are a variety of government-initiated processes that allow citizens to participate directly in the design and implementation of public policy, or in the delivery of public services. How governments engage citizens is largely dependent on whether citizens are treated as consumers or participants by the government (Chatwin & Arku, 2018). Citizen panels, citizen juries and participatory planning are examples of government efforts to involve individuals more directly in the creation or implementation of public policy and service delivery (see Section 3.2).

[Lin Shu Yang on collaborative democracy] I think it's very important to have initiatives from different parts of the society as well so they can help in different ways. And I think our job is to try to bring them together and give them a stage to shine because at the end of the day, the government really needs citizens' help as well. It's not like we're sending policies for everyone to follow. It's more a side-by-side collaboration. So that's why we call the work we're doing better described as "collaborative democracy".

A key feature of top-down approaches to collaboration is the fact that governments decide when, whom and how people should participate (Edelenbos et al., 2018). At various points during the decision-making process, governments initiate engagement opportunities in which citizens can respond to or provide input for highly organised decision-making governed by state rules. While traditional engagement methods can be very well handled and empowering, a common outcome is citizen dissatisfaction with the rigidly imposed standards of interaction, making them unlikely to participate actively during discussion (Kyakulumbye et al., 2019).

In Singapore, civic engagement initiatives are frequently designed and led by public agencies. The government's top-down approach in civic engagement can be characterised by the processes below:

2.1.1 Strategic and broad-based consultations in Singapore

As the Singapore government's direct outreach arm, the Feedback Unit was set up in 1985 as "a key vehicle in the government's new drive to involve the people in the making of major decisions" which aims to "act on feasible suggestions and ideas presented by the public" on top of gathering feedback for the government ("Feedback Plus Action," 1985). Under the purview of the Ministry of Community Development, the formation of the Feedback Unit "reflect[ed] the more consultative style of the younger generation leaders and underscores their efforts to forge a new consensus with the electorate" (Lee, 1985). Commentators at the time felt that it was "a bold and creative response to the need for a different quality of community between the people and the government" ("Comment," 1985).

In October 2006, The Feedback Unit was revamped to become REACH (i.e., reaching everyone for active citizenry @ home), with the goal of using new media to gather a broader range of perspectives and insights from citizens. In the shift to a more consultative and broader outreach approach, the government made use of more interactive methods such as dialogue sessions, straw polls, public forums, focus groups, telephone calls, email messages, faxes, internet relay conversations, and the short messaging service (SMS) to engage the public (HistorySG, 2011).

The 1990s was known for the launch of the first two national dialogues where citizens were asked about their ambitions and future plans for Singapore. In 1991, the Singapore government launched The Next Lap, a plan for Singapore's long-term development representing the combined efforts of government and private sector organisations. Educational reform and the implementation of the MediFund healthcare assistance programme were two important achievements that resulted from the dialogue. The dialogue also led to publications such as a book and masterplans that detailed the plans for Singapore's long-term development (Tan, 2019).

In 1997, Singapore 21 was launched. The dialogue called for a three-way cooperation between the people, the government, and the private sector to foster stronger social cohesion, a sense of belonging, and national pride among Singaporeans. Six thousand Singaporeans took part in the engagement process, speaking at more than 80 forums about the future issues they must face as individuals and as a nation. At the end of the year-long consultation exercise, five national

ideals were drawn out to form the new national vision — every Singaporean matters; strong families; opportunities for all; the Singapore heartbeat; and active citizenship (HistorySG, 2014a).

Following the success of The Next Lap and Singapore 21, the government launched Remaking Singapore in 2002 with a focus on understanding the changing aspirations and expectations of Singaporeans. The dialogue involved 10,000 participants and took just over two years to complete, with 61 recommendations out of the 74 made in total accepted by the government (HistorySG, 2014b). Policy changes such as including more flexible university admissions criteria, building an arts school, and implementing the five-day work week were some of the most significant recommendations accepted by the government (Lee, 2004).

In 2012, Prime Minister Lee Hsien Loong launched Our Singapore Conversation (OSC) as a national dialogue among Singaporeans.² Its goal was to involve Singaporeans in discussions about the country's intended future and to build widespread consensus on the fundamental challenges that needed to be addressed as a nation. Led by Education Minister Heng Swee Keat, a 26-member committee comprising Singaporeans from various backgrounds (e.g., the grassroots, private sector, non-profits, academics, the sports and arts communities) was appointed, drawing on a diverse spectrum of experiences and networks to generate conversations (Ng, 2013).

In all, approximately 47,000 people were engaged through OSC across 660 dialogues held in 75 different locations. Prominent focus groups discussions were also held on the topics of housing, healthcare and education; and review committees were convened to discuss necessary changes (Wong, 2018). Feedback from Singaporeans led to major policies such as the Pioneer Generation Package, MediShield Life and changes to the Primary School Leaving Examination scoring system (Ng, 2019). Reflecting on the intangible benefits of the Conversations, Minister Heng quipped that they have “allowed citizens to appreciate one another's perspectives, put their own in a wider context, and build a common space” (Chang, 2013a).

2.2 Non-government and citizen-led collaboration (bottom-up)

In contrast to “invited spaces of participation”, citizen-initiated collaborations are “created spaces of participation” (Denters, 2016). An example is community-based initiatives in which citizens organise themselves to provide public services for their community (e.g., operating a community facility, forming a cooperative or charity to provide community-led care for the elderly in the area, or environmental initiatives to provide local renewable energy).

Citizens may also collaborate with non-state actors such as non-profit organisations and community groups as an alternative to government-citizen engagement. For example, citizens

² The OSC was split into two parts: the first consisted of open-ended, exploratory focus group meetings, while the second filtered the inputs and organised them into coherent themes for future discussion. The themes included providing opportunities for all Singaporeans, creating a caring and compassionate society, provision of affordable healthcare, the Singapore *kampung* spirit, and trust and collaboration between voluntary welfare organisations, the government, and the community (Ng, 2013).

may volunteer at welfare organisations to address community problems or join a registered society to advocate for social issues. According to Voorberg, Bekkers and Tummers (2015), citizens play three different roles: (i) citizen as co-implementer, (ii) citizen as co-designer, and (iii) citizen as initiator of public services. Citizens are motivated to launch their own initiatives when they perceive strong external efficacy such as having genuine influence and seeing direct outcomes or when they are dissatisfied with government-led engagement or low levels and quality of service delivery.

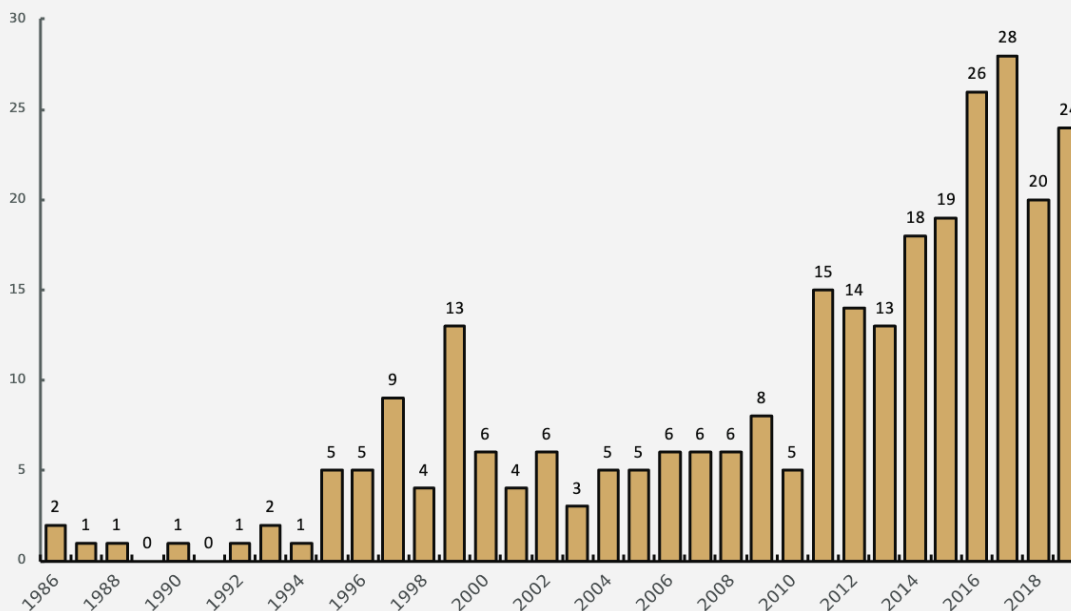
The line between private and public initiatives has also become increasingly blurred over the last decade (OECDa, 2020). Both private companies and non-profits are building platforms for participatory engagement and user feedback. For example, Uber has built a robust e-petition platform that allows passengers to sign e-petitions targeted at influencing national or local legislative processes in its favour (Ranchordás, 2017). In France, Make.org organises large-scale consultations on behalf of non-state actor groups, but also cooperates with government agencies.

2.3 Co-governance

Co-governance is a collaborative approach where citizens are given the agency to define and shape policy discussions that are subsequently used by policymakers to formulate and execute policies. Since the late 1980s, there has been a noticeable trend in the adoption of deliberative processes by public authorities for open decision-making (Chwalisz, 2021). Among developed economies, the use of deliberative processes has been on the rise. Between 2011 and 2019, there were 177 recorded deliberative processes spread across the 18 OECD countries; and an average of 25 sessions per year between 2016 and 2019, recorded by the OECD (see Figure 1).

Figure 1. Number of representative deliberative processes per year, 1986–October 2019 (OECD, 2020b, p. 20)

Number of representative deliberative processes per year, 1986 – October 2019



Note: n=282; Data for OECD countries is based on 18 OECD countries that were members in 2019 plus the European Union. Processes that spanned over multiple years are noted by the year of their completion (except for permanent ongoing processes).

Source: OECD Database of Deliberative Processes and Institutions (2020).

While deliberative processes come in different forms, they share several common features. First, there is a clear task or purpose relating to a specific decision, policy, service, project or programme. Second, discussion among participants during interactive events is core. These discussions could be held face-to-face or online and are designed to provide opportunities to participants to hear from one another. Third, the process is designed to facilitate learning, so that participants can build on and use the information and knowledge they acquire over the course of their participation. Finally, a range of resources are made available to the participants. The resources can take the form of information, and evidence and views provided by specialists or experts who have different perspectives, backgrounds and interests. Finally, facilitation is a core part of deliberative processes as they help minimise the domination of discussions by certain individuals and the exclusion of minority or disadvantaged groups and ensure a diversity of views (Involve, 2018).

[James S. Fishkin on benefits of deliberation] We have the problem of like-minded people tending to communicate on social media with the people they already agree with, they tend to look at the sources they already agree with. And so they may never hear the other side. Now, in the deliberative poll, you have the opportunity for real deliberation, because a random sample randomly assigned, you have diverse people in the group.

Deliberative democracy adds something special, it's the will of the people. It's the will of the people independent of propaganda, independent of disinformation, independent of campaign advertising, it's the will of the people where the people can step back and actually listen to each other, learn from each other about their concerns.

In general, deliberative processes elicit considered citizen opinions on a policy issue, generate informed citizen recommendations on policy question, and inform citizen evaluation of ballot measures (where a representative group of citizens identifies the pros and cons of a ballot issue to be distributed to voters ahead of the vote; OECDa, 2020).

Regardless of the form, motivation and purpose, bottom-up citizen involvement underscores the capacity for citizens to be engaged in governance. In Singapore, there has been a greater push among the public sector to engage in co-governance with the people.

2.3.1 Co-creation in Singapore

Taking in the lessons learned from the OSC, then-Minister of Finance Mr Heng Swee Keat stated that Singapore's fourth-generation leadership would enter the next phase of governance, in which the government would collaborate with Singaporeans to drive the country forward. The Singapore Together movement, launched in 2019, sought to mobilise citizens in support of a new paradigm of partnership between the government and Singaporeans from all walks of life by forming new partnerships with Singaporeans to co-create policy solutions and collaborating with them to translate the answers into action (Heng, 2019).

Unlike prior engagement activities such as Remaking Singapore and OSC, which were one-off group conversations, initiatives such as the citizens' panels under the Singapore Together movement addressed topics in greater depth and rigour (Yuen, 2021). The citizens' panels were launched as part of the Singapore Together movement to engage a wider segment of citizens in deliberative participation. Unlike the Emerging Singapore Conversations (ESCs), which were happening concurrently, participants of the citizens' panel were involved for a longer period of time and explored ideas in a more in-depth and rigorous manner. To achieve this, participants were provided with information kits and briefings before the start of the sessions, and government agencies also responded to the needs of participants during the process by connecting them with experts (Soon & Sim, 2021).

Table 1. Examples of citizens' panels convened by the Singapore government

Citizens' Panel	Period	Host agency	No. of participants
Citizens' Jury on the War on Diabetes	November 2017 to January 2018	Ministry of Health	76
Recycle Right Citizens' Workgroup	September to October 2019	Ministry of Sustainability and the Environment	48
Citizens' Panel on Work-Life Harmony	September to November 2019	National Population and Talent Division, Ministry of Manpower, Ministry of Social and Family Development & Institute of Policy Studies	55
Citizens' Workgroup for Singapore Citizenship Journey (fully digital)	April to December 2020	Ministry of Culture, Community and Youth	93
Citizens' Workgroup on Reducing Excessive Consumption of Disposables	September 2020 to April 2021	Ministry of Sustainability and the Environment and the National Environment Agency	55

The impact of the citizens' panels was clear. According to an IPS report (Soon & Sim, 2021) that was based on the first three of the abovementioned citizens' panels³, there were high levels of sustained on-site and off-site engagement where many participants were committed to do their own research and take agency of their proposed solutions.

2.3.2 Cross-sector partnerships

2.3.2.1 Alliances for Action (AfAs)

As partial fulfilment of the government's promise to involve citizens in policymaking, the Singapore Together movement also convened working groups such as the Alliances for Action (AfA), citizens' panels on specific issues, and ESC centred around the challenges arising from the ongoing COVID-19 pandemic.⁴ Such action-oriented groups are meant to encourage grassroots involvement by citizens as part of a public-private-people alliance.

Undergirded by the ESC, the AfAs are citizen-led coalitions that collaborate with the government to prototype ideas that address a common challenge or capitalise existing opportunities. The AfA model brings citizens, industry and the government together to work toward a common goal in a short timeframe of months and up to a year. While each AfA is unique, a typical AfA consists of a

³ The three citizens' panels were the Citizens' Jury on the War on Diabetes, Recycle Rights Citizens' Workgroup and Citizens' Panel on Work-Life Harmony.

⁴ Please refer to the Singapore government's official website (<https://www.singaporetogether.gov.sg/>) for a full list of the ongoing initiatives under the Singapore Together movement.

three-step process: (i) concept creation, (ii) concept testing, and (iii) scaling and conclusion. Led by the Emerging Stronger Taskforce (EST) under The Future Economy Council (FEC), the AfAs address 15 themes arising from the ESC including social support, digitalisation and technology, and family. Figure 2 lists the AfAs under different pillars of governance.

Figure 2. ESC themes with AfAs (Singapore Together, 2021, p. 2)



Launched in June 2021, a 20-member AfA on Online Ordering for Hawkers comprising hawkers, online ordering platforms, community group buy and “dapao” platforms, and the public sector (Infocomm and Media Development Authority [IMDA] and National Environment Agency [NEA]) worked closely to help hawkers identify the broader issues and challenges experienced in leveraging digital platforms to support their business — including adoption, business models, and consumer awareness. Under the AfA’s common acquirer model programme, companies such as Deliveroo, FoodPanda, Grab and WhyQ have joined hands to help hawkers go digital at no fees (Lam, 2021). A member of the AfA, DBS Bank also partnered grassroots leaders to expand their Adopt-A-Hawker-Centre initiative and sponsored weekly group buys of hawker meals delivered to front-line healthcare workers, migrant workers, and the needy (DBS, 2021).

Across 25 Singapore Together AfAs, around 16,900 diverse Singaporeans ranging from students to seniors have exchanged their views via the ESC since the series was launched in 2021 (Singapore Together, 2021). Through the AfAs, Singaporeans acted on issues and challenges in their immediate communities together with private and public sectors.

2.3.2.2 National movements

Recognising the importance of citizen action, the Digital for Life (DfL) movement strives to unite the community to help Singaporeans of all ages and backgrounds in adopting digital learning as a lifelong ambition. Through the combined effort of corporates, community groups, state institutions, and individuals, the national movement is a network of resources and expertise supporting ground-up initiatives to kickstart digital projects that benefit the community. In 2021, the DfL fund hit \$7.6 million after corporate and President's Challenge donations and a dollar-for-dollar match by the government (Chee, 2021).⁵ Success stories include community-led projects such as the Surf Safe Campaign, an initiative by non-profit organisation Cyber Youth Singapore slated to run for three years and engage about 50,000 students within the first two years (D. Low, 2022a). Initiatives and funding from five leading organisations (Engineering Good, Google, Keppel Corporation, Standard Chartered Bank and TriGen) have also increased their community outreach to mobilise university groups and volunteers passionate to participate in digital causes. As testament to the movement's success, the DfL Fund has set aside \$4.8m in 2022 to support 21 new ground-up community projects that will benefit 100,000 people (IMDA, 2021a). The main beneficiaries of these projects are seniors, children and youths, as well as persons with disabilities (IMDA, 2021b).

2.3.2.3 Community networks

Among community networks, the most notable one is the Youth Mental Well-being Network launched in 2020 that has since initiated around 22 ground-up projects. This year, plans have been put in place to broaden the Network to tackle mental health issues across a greater range of population segments (Goh, 2022). The National Youth Council's (NYC) Youth Action Challenge (YAC) is the Council's flagship ideathon-style competition that mobilises youths to solve community issues with funding from the government. The YAC has just successfully concluded its third run that saw over 80 teams and 310 youths pitch ideas (Feng, 2022).⁶ These networks and platforms have been indispensable in inspiring youth action in a nation where negative stereotypes of youth activism and volunteerism persist.

3 Technology and citizen participation

As discussed in the preceding section, public dialogues, community partnerships and consultations are examples of traditional "in-person" or "face-to-face" community interactions. Traditionally, participation was limited to face-to-face interactions and telephone communications. Prior to the COVID-19 pandemic, there has already been an increase in online civic participation, particularly among digital natives who interact primarily on digital platforms (Toh, 2021). Digital

⁵ The DfL Fund was established with \$2.5 million seed funding by the President's Challenge. It received an additional \$1.3 million in donations from Standard Chartered Bank and Keppel Corporation. With the government matching dollar to dollar, the fund is at \$7.6 million as at March 2021. The target is to grow the Fund to \$10m by 2023.

⁶ Organised by the NYC in partnership with the Citi Foundation and United Nations Development Programme (UNDP) Youth Co:Lab initiative, the YAC provides training, mentorship and grants of up to \$50,000 for youths to turn their solutions into reality.

discussion forums, social media, e-petition websites and other participatory technologies have been lauded in the last decade for their potential to bridge the gap between citizens and politicians, increase citizen participation in the legislative process, and respond to the perceived crisis in representation for democratic processes.

The crisis of representation refers broadly to questions of which citizens to involve in civic engagement (Fainstein, 2013). First, neighbourhood institutions do not consistently offer effective representation, even when they are not oriented towards middle-class concerns. Second, self-appointed leaders run the risk of alienating other potential citizens and lack the credibility that elections provide. In some cases, disadvantaged communities lack the leadership and institutions needed to effectively communicate citizens' concerns. As such, even though electronic communication has made it feasible to engage a wider audience, participation is likely to remain limited without a concerted effort to include non-citizens and minority groups in the conversation.

While technology has not totally solved the democratic inadequacies of law-making (e.g., legislative openness) or limited the power of special interest groups, it has aided civic participation in several ways (Ranchordás, 2017). First, the emergence of interactive digital platforms has lowered information costs. Second, technology has expanded and diversified the fields of action (e.g., consumer activism). Third, it has created new and apolitical spaces of discussion and deliberation, and finally, it has broadened civic participation to those who would otherwise be excluded from the law-making process. Put simply, technology is enabling and facilitating citizen participation in governance. It impacts who participates, what issues they participate in, and whether their voices are heard by policymakers.

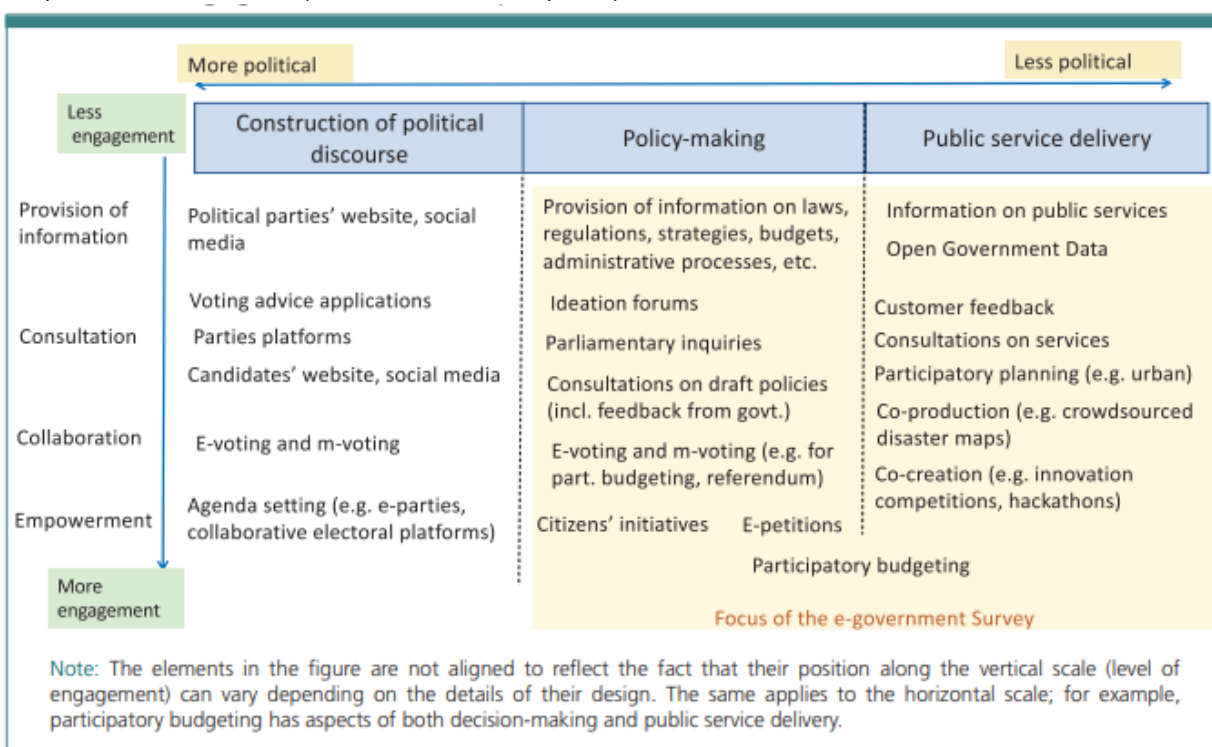
[Lin Shu Yang on new technologies for participation] Before, the public could not vote online, now we can vote online. We probably could not make petitions just over forms on the website, and now it's totally possible to do that. And maybe in the future, what we cannot do now could be performed — things like telepresence to [demonstrate] some issues the citizens are facing right now. Not just by writing or text form. It could be beyond photos or paragraphs. It could be a 360 video, which is already... we had that a few years ago. There's a motorcyclist who gave us a 360-video telling us why they want to also ride on the highway, because it's safe. And [it] was really fascinating because when we started to see the videos, we started to feel really immersed from his first-person point of view.

More importantly (and this has been both a boon and a bane for governments), expertise is no longer the sole domain of government elites because technology allows for more precise identification of those with relevant skills or expertise for various projects, resulting in increased overall productivity (Bass, 2019). For example, online wikisurveys tools like Pol.is highlight the most important issues and present the most diverse range of viewpoints to policymakers, giving attention to minority voices instead of amplifying mainstream ones — a constant challenge that traditional methods of civic engagement are still struggling to navigate.

3.1 Increased modalities for citizen participation

One of the most significant impacts of technology is the increase in participation modalities that are available to both governments (to elicit citizen involvement) and citizens (to participate in different engagement activities). According to the United Nations (UN) E-Government Survey 2020 report, most countries have put in place information frameworks, and many have implemented some type of national electronic consultation with citizens. The number of countries that provide government data on their public portals or websites has risen from 105 in 2016 to 132 in 2018 and 137 in 2020. The range of tools governments have developed is illustrated below in a mapping by UN based on two axes — the type of governance activity and the level of engagement with citizens (see Figure 3).

Figure 3. The e-participation spectrum based on the type of governance activity and engagement with citizens, with examples of associated tools (United Nations, 2020, p. 154)



The internet has also boosted deliberative participation, which has traditionally been convened face-to-face given the extent of facilitation and nature of discussions involved. For example, the OECD team has observed a shift from individual text-based interactions to group video deliberation since the pandemic (Chwalisz, 2021). Experiments have also begun to cross national boundaries. In late 2020, the European Commission and the German Bertelsmann Stiftung, a private foundation for political reform, held an online Citizens' Dialogue with 100 citizens from Denmark, Germany, Ireland, Italy and Lithuania to discuss Europe's digital and green future.

Table 2 below presents new technological tools and modalities that have been used by both government and non-government organisations as highlighted by The GovLab's CrowdLaw for

Congress project (TheGovLab.org, 2020a). We re-organised the items into tech-based tools (participation tools built on technology essential to their operation) and their tech-supported platforms (existing participation modalities enhanced by technology). Examples were provided to illustrate their use.

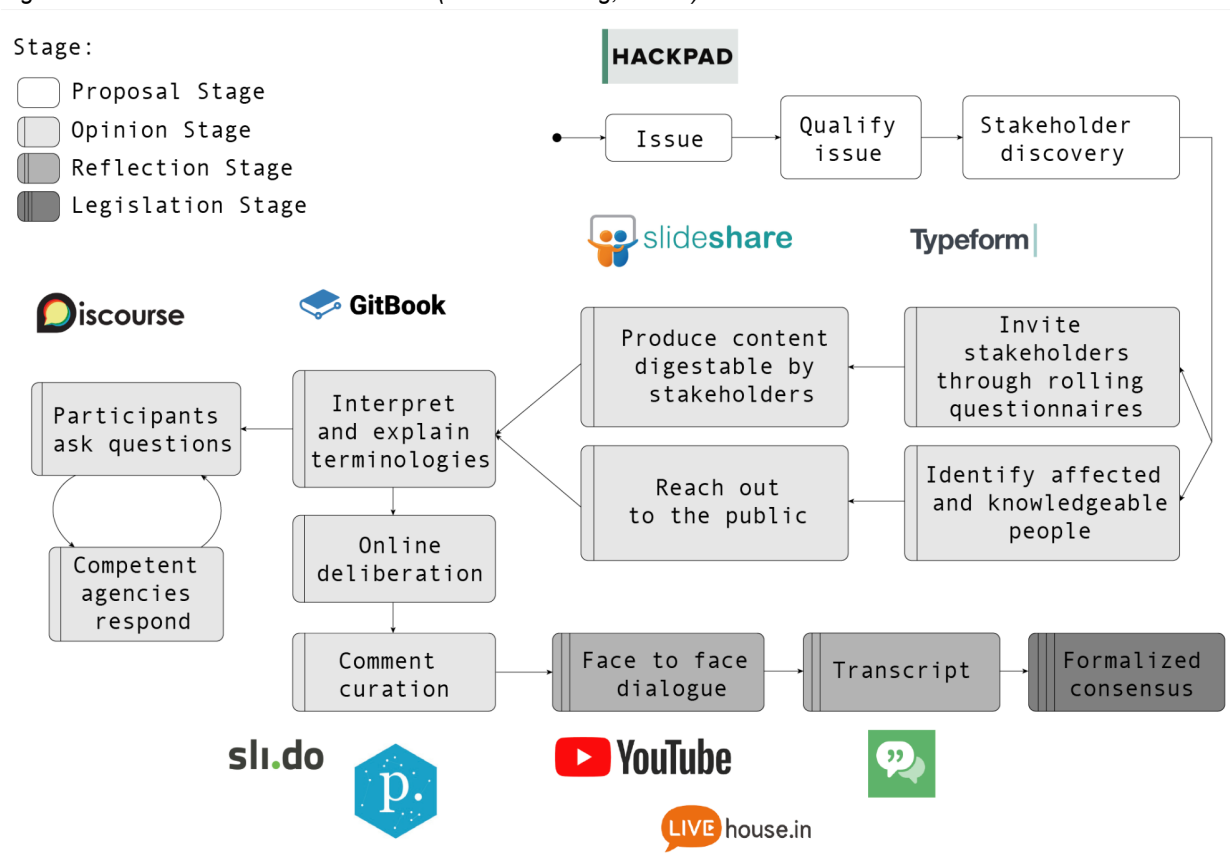
Table 2. New tech-based tools and tech-supported platforms for participation

	Purpose	Example(s)
Tech-based tools		
AI insight generation	For government to analyse large volumes of data (such as comments on a website or on social media) and create visual representations to discover trends, sort data into logical groupings, and continuously adjust these groupings as new data is gathered.	OpenText
Online social auditing	To engage the public in collectively monitoring and analysing the consequences of policies and regulations. There are two major advantages of using this technology: a) It can expand participation by incorporating a broader spectrum of expert analysis and the collective experience of individuals affected by a policy or law to shape future policy formulation; b) It can allow for real-time monitoring of effects in order to improve current service delivery.	Assembl Promise Tracker Tool TransGov
Web-based annotation platforms	Allow people to annotate web pages and other online documents in the same way that they annotate hard copy documents as they collaborate on problem-solving. Some annotation platforms include options for searching for and displaying public comments while keeping a subset of remarks (for example, from invited experts) private and only available to that group.	Mudamos PubPub Wikilegis hypothes.is
Open innovation	A type of collaboration that uses internet tools to bring together the collective knowledge and skills of widely dispersed individuals with strong ideas about how to solve an issue. The greatest applications of online brainstorming allow participants to rate one other's ideas and agree on how to improve them.	Your Priorities Democracia OS

Digital listening using social media	Includes watching and interacting with people on social media in order to obtain actionable information. More active kinds of digital listening include collecting feedback on a specific issue and assembling an evidence base about a problem using “Twitter bots” or hashtags, which can include location data, images, and comments.	<u>Sprout Social</u> <u>Brandwatch</u>
Tech-supported platforms		
Web-based town halls	To promote discussions that encourage more substantial thought on a subject, usually lasting no more than an hour. Web-based town halls are minimally regulated discussions between citizens and policymakers that take place on basic web-based discussion platforms.	<u>Zoho Connect</u> <u>AllHands</u>
Blockchain-based petitions (further examined in Section 5.1)	Online petitions that use blockchain technology to store information securely and reduce the risk of fraud. The blockchain establishes the identity of signatories (often with reference to a unique identification number issued by the government for taxation purposes). The blockchain then produces an immutable and verifiable record of signatures, with each signature linked to the signatory's identity.	<u>Ballotchain</u>
Smarter crowdsourcing	Usage of data-rich tools to help match the supply of citizen expertise with government needs. Instead of relying on a broad call for ideas and knowledge, which can result in an unmanageable quantity of low-value contributions, these technologies allow better matchmaking with those who have the most relevant talents and ground-level experiences for the situation at hand.	<u>Polis</u> <u>Discourse</u> <u>Loomio</u> <u>Decidim</u>

Besides single-use or single-function platforms, there are multi-functional participation platforms that combine different tools such as ideation forums, consultations and e-petitions on new policies, opinion polls, complaint systems, corruption reports, and idea and innovation generation. One example of a multi-functional participation platform is vTaiwan, Taiwan’s digital crowdsourcing platform that utilises a broad range of online tools to facilitate and moderate discussion throughout the entire policymaking cycle (see Figure 4). Such multi-functional one-stop platforms provide the means for citizens to be involved in different stages of the policymaking process.

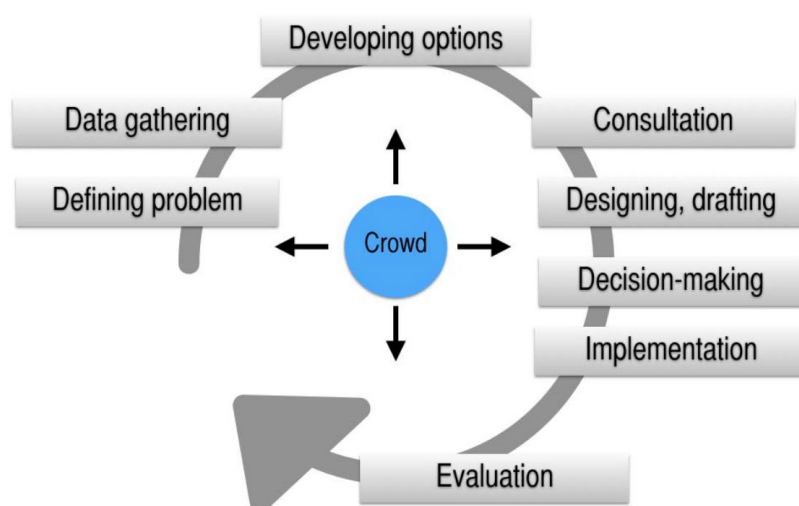
Figure 4. Various tools used for vTaiwan (TheGovLab.org, 2020d)



Crowdsourcing as a form of civic participation deserves special mention. Operating both as a tool and an organising principle, its main advantage lies in its asynchronous, distributed and depersonalised mechanism that is based on self-selection, which allows for wide reach at low cost (Aitamurto & Landemore, 2016). Governments benefit from crowdsourcing as they now have a means to tap on the collective intelligence of the public to enrich different stages of the policymaking process. Citizens have the freedom to choose when, how, and where they engage, as well as how long they participate (Chen & Aitamurto, 2019).

Crowdsourcing can be deployed in one or more phases in a policymaking process (as illustrated by Liu, 2021; see Figure 5). They range from the stages of problem identification and definition, data collection, development of alternatives and suggestions, consultation, policy design and drafting, decision-making, assessment, to implementation (Edwards, 2001; Howlett et al., 1995; Peters, 1999).

Figure 5. Crowdsourcing in a policy cycle (Chen & Aitamurto, 2019)



Both governments and citizens are driving the growing use of crowdsourcing in governance. In recent years, public problems are increasingly complex as governments juggle: (i) the various concerns voiced by an increasingly diverse group of stakeholders; (ii) the need to incorporate users' experiences into service delivery and design; and (iii) a limited budget across various industries that interface with the public. With crowdsourcing, actors outside of the government may generate information and ideas more efficiently and cost-effectively, which creates a win-win scenario for both citizens and governments (Liu, 2021).

3.1.1 Tech-driven initiatives in Singapore

The Singapore government has made significant progress at the intersection of technology and public engagement. In addition to engaging citizens on a wider array of issues, the government has also expanded its efforts via a growing repertoire of online modalities, for example, e-Meet-the-People Sessions, social media channels and feedback portals. Use of these online modalities greatly increased during the pandemic out of necessity, compared to offline ones.

First, the government's experimentation with digital engagement has increasingly relied on new social media services, platform tools and channels to better engage a broader segment of the population. For instance, at the height of the pandemic, REACH utilised a variety of social media services (WhatsApp, TikTok, Clubhouse, etc.) to understand challenges and issues faced by Singaporeans, and engaged over 70,000 people through Listening Points⁷, dialogues and digital campaigns.⁸ E-Listening Points were also jointly organised with stakeholders including healthcare professionals, private gym operators, teachers, public transport workers, food delivery riders, industry associations, professional bodies and religious organisations to gather public sentiments

⁷ In particular, REACH's Listening Points, which took the shape of mobile pop-up booths and discourse sessions, involved more than 70,000 Singaporeans in 2021 on national policies.

⁸ In the midst of the pandemic, REACH moved to the digital space and continues to collect public sentiment and feedback through e-Listening Points and online discussions as well as on social media to engage with the community on hot-button issues.

and feedback for the Multi-Ministry Task Force and relevant agencies (REACH, 2022). The unit also experimented with gamification and created Super SG Dash, an interactive web-based game to engage Singaporeans on important national policies by explaining policy trade-offs in a light-touch manner (REACH, 2022).

On top of engagement through the online portal, government agencies have also been communicating with Singaporeans through agency websites, blogs, and Facebook pages (Ng, 2011). The platform's supervisory panel was also refreshed with a stronger youth and new media representation to boost e-engagement efforts (*REACH Reaches Out to Youth and New Media with New Panel*, 2010). While both members of parliament (MP) and media observers acknowledge the importance of having an official feedback arm for the government, they opined that the outreach is limited and could be expanded to include other engagement platforms such as regular digital town hall meetings (Ng, 2011).

Second, it is partnering stakeholders to create digital solutions in the areas of public service delivery, innovation of digital products and problem-solving. The Government Technology Agency of Singapore (GovTech) leads the charge on Singapore's Digital Government project and public sector digital transformation. To improve public service delivery, GovTech collaborated with the Municipal Services Office⁹ to develop the OneService App and chatbot for WhatsApp and Telegram. The OneService chatbot increases the channels for gathering municipal feedback through innovative ways (Leo, 2021).¹⁰

In recent years, GovTech has been strengthening its ties with businesses and the community to co-create digital solutions in order to accelerate the transformation and uptake of government digital services. Table 3 lists examples of such initiatives.

Table 3. Examples of collaborative tech-driven engagement efforts in Singapore

Purpose	Initiative	Scope
Co-creating solutions	Singapore Government Developer Portal (GovTech)	To enable designers and developers to look for important information on product features, use cases, and technical specifications in order to collaborate with the government on solutions. Over 70 suggestions were submitted by 330 persons from the public and private sectors, including solutions such as building wearables for contact tracing and developing personal risk scores based on proximity data (Feng, 2020).

⁹ The Municipal Services Office (MSO) works with key government agencies, Town Councils and other stakeholders to improve municipal services delivery.

¹⁰ The app is a one-stop shop for citizens to provide feedback on community issues without having to find out which government agency or town council to approach.

	“Covid-19 Idea Sprint” (GovTech)	<p>A two-week hackathon aimed at finding solutions to community challenges caused by the pandemic.</p> <p>During the hackathon, GovTech set up a Slack channel where participants could discuss their solutions with civil servants directly (DevPost, 2020).</p>
Sharing the source codes of digital products for industry developers to experiment with and create their own versions	VigilantGantry, an AI-powered video analytics software (GovTech)	A modular software that allows private-sector companies to quickly integrate the technology and open-source software into existing infrastructure, such as at gated entrances (Theseira, 2020).
	Open Government Products in GovTech	An experimental development team within GovTech that currently offers 68 open-source software templates on GitHub for developers to experiment with (GitHub, n.d.).
Improve tech solutions	Smart Nation Co-creating with Our People Everywhere (SCOPE) (Smart Nation and Digital Government Group [SNDGG])	<p>To improve digital tools and services based on citizens’ feedback (e.g., seniors on the Active Ageing features for the Moments of Life [now LifeSG] app) (Smart Nation Singapore, 2018; 2020).</p> <p>As an extension to the SCOPE initiative, the Smart Nation Builder, a roving showcase fitted with game stations, will provide a platform to solicit citizens’ input and feedback for better digital government products (Smart Nation Singapore, 2022).</p>
	Tech Kaki Community (GovTech)	<p>A user insights community that encourages citizen interaction and co-creation. Tech aficionados have early access to new tech goods before they are released, as well as the opportunity to participate in surveys and suggest improvements.</p> <p>There are currently around 7,000 members, and GovTech regularly hosts tech events on a variety of topics ranging from cybersecurity to product management (GovTech Singapore, n.d.).</p>

Overall, good effort has been put into exploring a greater breadth of channels and platforms to engage citizens on a broader range of issues from municipal to national ones. For instance, the recently launched Smart Nation Builder offers members of the public a chance to try prototypes of new digital products as well as provide feedback to improve the user interface, accessibility,

and overall user experience for upcoming government products.¹¹ If successful, this will be the largest open public-facing consultative prototyping process following the closed-door sessions organised by the Tech Kaki community.

3.2 Unpacking tech-enabled citizen engagement

The previous section highlights key developments in the civic participation landscape, particularly how technology has improved existing and introduced new modalities for governments and citizens to interact with one another. This section unpacks how technology can be used in different citizen engagement processes for policymaking and law-making — from crowdsourcing ideas for a specific problem to implementing the policy or legislation — with use cases from different countries to illustrate how technology was deployed at each stage.

3.2.1 Stages of participation and global examples

The policymaking process consists of multiple interlinked stages that lead to policy delivery. In each of these stages, stakeholders may be involved to varying degrees. This section reviews how governments around the world engage citizens in different stages of the policymaking cycle.

The GovLab's CrowdLaw for Congress project investigates how policymakers around the world are turning to the use of modern technologies to build a productive two-way dialogue with the public that will improve the quality and legitimacy of policymaking. The CrowdLaw project organised over 100 case studies into four main categories that correspond to different stages of the policymaking cycle: problem definition, solution identification, drafting, and evaluation and oversight.

3.2.1.1 Problem definition

The law-making process begins with the government deciding which issues to address. Obtaining broad feedback from those with expert knowledge as well as those with lived experiences allows policymakers to have a better understanding of how the general public perceives problems. This is especially crucial for disadvantaged people who would otherwise be unable to participate in the legislative process. When problem definition is made public, it allows the general public to contribute expertise and information at a large scale, increasing the possibility of generating solutions that actually work. An example is provided in a table below:

¹¹ The 12-metre truck, which is designed as a roving display, is equipped with eight interactive gaming stations where members of the public can learn about Smart Nation programmes and digital government services like LifeSG, Parents Gateway app, Healthy365, and the NLB mobile app.

Table 4. Example of participation platform in problem definition stage (Participedia, n.d.)

Project	mVoting by Seoul Metropolitan Government
Period	Since 2013
Description	<p>The mVoting forum allows residents to discuss city issues and offer comments or solutions where policymakers can readily access the information. Users can browse through local policy proposals based on geographical relevance or popularity, which makes the forum more efficient. Citizens can thus voice their views on subjects or services that they are interested in or with which they have the most contact while monitoring public sentiment online.</p> <p>Some examples of the types of proposals that come up on the mVoting app include voting on the designating of non-smoking areas in the Han River Park, voting on the restriction of driving vehicles when air pollution levels rise, and asking citizens for their opinion on potential policies that will enable seniors to ride public transportation for free.</p>

The problem definition stage mainly involves soliciting citizen input and encouraging civic action by providing accessible avenues and feedback channels to lay citizens. For the process to be effective, citizens must be armed with basic skills and open data to participate both offline and online so that they can share their lived experiences with the state regarding perennial problems they face in the community.

3.2.1.2 Solution identification

After policymakers have agreed on a common and actionable definition of an issue, they can leverage technology to source creative and diverse ideas and skills. People can discuss, debate and evaluate proposed solutions to problems using online technologies, expanding public involvement beyond that available to legislators and their staff through periodic hearings. Online interaction, in particular, allows for the accumulation of valuable ideas from a variety of sources. Examples are provided below:

Table 5. Example of participation platform in solution identification stage (TheGovLab.org, n.d.)

Name	Decide Madrid by City Council of Madrid
Period	Since 2015
Description	<p>Decide Madrid is a citizen participation platform launched in 2015 that allows members of the public to submit proposals to the City Council.</p> <p>Any verified resident of Madrid can click a button expressing support for a proposal after it has been submitted. Each proposal has 12 months from the time it is posted to acquire the public support it needs to advance to the next stage of review.</p> <p>Proposals can be categorised by "most active", "highest rated", "newest" and "archived", as well as by tag categories including "cultural", "mobility" and "social rights". Most actions on the website (including registration) can also be accomplished with the help of trained professionals in one of Madrid's 26 Citizen Assistance Offices, to maximise citizen involvement and accommodate individuals without internet access.</p> <p>A 45-day period of online public discussion begins if a proposal hits the 1 per cent threshold. This is followed by a seven-day period during which verified users can vote on whether to accept or reject the proposal. A majority vote in this procedure authorises the idea to go to the next stage, which is City Council consideration.</p>

Table 6. Example of participation platform in solution identification stage (Kokeileva Suomi, n.d.)

Name	Kokeileva Suomi ("Experimental Finland") by Motiva (Finnish government's sustainable development company)
Period	Since 2017
Description	<p>In response to the government's mid-term policy review, Experimental Finland launched a call for suggestions for experiments centred on three themes: circular economy, employment and artificial intelligence. Subsequently, a new request for proposals for circular economy pilots was issued.</p> <p>As an extension to Kokeileva Suomi, Place to Experiment is a digital platform that helps people turn their ideas into tangible experiments. It was created in collaboration with the experimenting community. It allows for the co-development of ideas, the flexible funding of trials, and the exchange of findings and lessons learned. The lessons can then be duplicated and disseminated to a larger audience.</p>

This stage involves tools that aid in deliberative filtering of solutions. Many such platforms offer features that allow for upvoting and downvoting, as well as a space for users to leave comments and feedback that evaluate proposals. Adequate time should be given at this stage to allow for in-depth discussion and deliberation.

3.2.1.3 Drafting

Drafting laws entails transforming ideas deemed feasible for implementation into written recommendations for legislation. Engagement at this stage gives policymakers the chance to seek feedback on a draft and develop it jointly with citizens. When designed well, mechanisms that encourage the public to engage in the drafting process can help legislators discover new issues and guarantee that drafts better reflect the concerns of those who will be affected by them. Citizens can collaborate to write, comment on, and document proposed laws or rules through engagement opportunities. An example is provided in a table below:

Table 7. Example of participation platform in drafting stage (TheGovLab.org, 2020c)

Name	Mudamos (“We Change”) by Institute of Technology and Society of Rio de Janeiro (ITS Rio)
Period	Since April 2017
Description	<p>Mudamos is a mobile application that enables Brazil’s citizens to participate in law-making by proposing their own bills and signing on one another’s proposals using verified electronic signatures.</p> <p>Mudamos comprises three parts: i) Mudamos app’s secure and verifiable digital signature technology; ii) the process for proposing, analysing and improving proposed bills; and iii) in-person Virada Legislativa (legal draft-a-thon) events.</p> <ol style="list-style-type: none"> i. Mudamos App: Anyone with an Android or iOS smartphone can download the app and register with their electoral ID, name, and address, which Mudamos secures and validates with Brazil’s Electoral Court. ii. Legal Analysis Team: Mudamos’ developers devised a volunteer lawyer programme to deal with the volume and quality of submissions. The Mudamos volunteer legal team conducts a legal examination to see if the draft bill meets all of the constitutional conditions to be considered a citizens’ initiative bill. iii. Virada Legislativa Events: The Virada Legislativa is a one-day in-person event in which participants work together to draft bills addressing a single subject in a set amount of time (a draft-a-thon).

The above example illustrates the need for the involvement of legally trained volunteers and staff who will work with citizens and translate their contributions onto paper during the collaborative drafting phase. This is the only stage where a government-led top-down approach is the most

effective, due to the legal stipulations and specialised knowledge required to navigate the policymaking cycle.

3.2.1.4 Evaluation and oversight

Evaluation and oversight looks at how a law or policy is operating, whom it affects and how much it costs. With modern technologies, an active community can improve the outcomes of policymaking by collaboratively monitoring the outcomes and impact of laws. This kind of participatory evaluation is also known as “social auditing” or “civic auditing”. Citizens’ involvement at this stage tracks outcomes and assesses the impact of laws and policies on the community’s or societal well-being. An example is provided in a table below:

Table 8. Example of participation exercise in evaluation and oversight stage (TheGovLab.org, 2020b)

Name	Evidence Checks UK by Government of UK
Period	Since 2011
Description	<p>Evidence Checks are month-long exercises in which members of the public are invited to submit online comments on the rigour of evidence used to inform policy. This method permits a wide and diverse group of people with relevant experience and knowledge to identify research gaps that need to be looked into further.</p> <p>During an Evidence Check, government departments provide the Committee with material on a certain topic (e.g., smart cities, digital government, or flexible working arrangements). The information is published on a new page under the committee’s own official website dedicated to the evidence check, and the duty of scrutinising the evidence is shared with a larger pool of experts, stakeholders, and members of the public for discussion. The Committee typically publishes the government statement as a publicly accessible document and frames the request with particular issues and problems that they want participants to address.</p>

Openness and transparency are key at this stage. Citizens must be provided with enough data and information to evaluate the outcome of state initiatives. Governments must also be open to public scrutiny and accept constructive criticisms as opportunities to fix inadequacies. Both citizens and government can create channels where citizens can act as a third-party observer to oversee initiatives impacting society.

3.2.1.5 Integrated platforms for all stages

There are multipurpose platforms that utilise collaborative tools for every stage of the policymaking cycle to engage citizens throughout the deliberative process. Platforms like these are built on mutual trust between the state and its people, where authorities value citizen input and citizens trust in the management of their contributions. See Table 9 below:

Table 9. Example of an integrated participation platform (Simon et al., 2017)

Name	e-Democracia portal & LabHacker by Brazil's National Congress
Period	Since 2009
Description	<p>The e-Democracia website is divided into three sections — virtual communities on certain topics, "free space", and Wikilegis, a collaborative bill-drafting tool.</p> <p>Citizens can participate in online forums and live chats with legislators, attend live committee hearings and post questions and recommendations in real time, and participate in online polls and surveys in each of the virtual communities.</p> <p>The e-Democracia team subsequently organised a hackathon in 2013 to bring together designers, developers, parliamentary staff and representatives to create apps for computers and mobile devices with the goal of increasing transparency and public understanding of the legislative process.</p> <p>The event was such a success that the Brazilian Chamber of Deputies issued a resolution to establish a permanent hackerspace within the Chamber, LabHacker21, to serve as an innovation lab and generate relationships between legislators, designers and developers, and civil society players.</p> <p>LabHacker, the world's first parliamentary in-house innovation lab, is now in charge of upgrading the e-Democracia portal, including through workshops and hackathons, as well as developing new digital technologies to increase public engagement and improve legislative transparency. All the tools used on the platform and developed by LabHacker are open source, with the goal of attracting a larger community of developers to help improve them.</p>

4 Web 3.0 and implications for governance

Besides the tech-based and tech-supported public engagement initiatives presented in the previous sections, a slew of innovative digital platforms that can potentially increase peer-to-peer interaction and electronic participation are emerging and have implications on how governments conduct public administration, engage their citizens and deliver public services. Particularly promising are the innovations surrounding Web 3.0 technologies, including blockchain, decentralised autonomous organisations, and more broadly, the notion of the metaverse. Several digitally advanced countries such as South Korea and Estonia have begun experimenting with these technologies to deliver public services and increase civic participation. This section examines the applications of new technologies in the area of civic engagement and provides some inspiration for the Singapore context.

4.1 Blockchain technology

Over the last decade, governments have been experimenting with using blockchain technology on a wide range of operations and services, including land registration, educational credentialing, healthcare, procurement, food supply chains, and identity management (Lemieux & Dener, 2021). In South Korea and New York City, blockchain-protected digital vaccine passports have been issued to citizens as digital proof of vaccination (Cha, 2021; Biddle, 2021). For public organisations, blockchain technology offers the opportunity to alter citizen involvement channels and reinvigorate democratic processes.

Also referred to as distributed ledger technology (DLT), blockchain technology consists of a digital chain of blocks, each of which records the system's transactions across the entire network of computer systems on the blockchain. Multiple users can construct a federated system of recorded transactions by using these blocks, which are not bound to a central location. This way, interactions between parties are made simpler and faster with added transparency. The main features of a blockchain are summarised in a table below:

Table 10. Key features of a blockchain (Gregori & Doten, 2021)

Feature	Description
Immutable	By capturing all modifications to data entries, blockchain can make an original record unalterable. Even the tiniest changes are visible to all participants, creating accountability for the changes.
Decentralised	There is no single governing body. Algorithms (“consensus procedures”) built into the system help decentralised parties agree on the legitimacy of transactions.
Secure	Blockchains are extremely difficult to hack or alter due to the sophistication of the encryption that underpins them.
Pseudo-anonymised	In most cases, blockchain users are “pseudo-anonymised”. Users operate using a unique ID or pseudonym that is not linked to their real-world identity.
Notary	The blockchain can be used to notarise a document or data, ensuring its legitimacy in any given form at a specific time.
Useful for any type of data	Blockchain can be used to transport and secure any type of data. A blockchain can manage anything that can be converted into a digital certificate or token.
Smart contracts	Smart contracts can be used to automate processes when specific data conditions are satisfied.

Blockchain scholars have long touted the benefits of blockchain in governance. A blockchain-based digital government can protect data, increase efficiency, eliminate fraud and abuse while simultaneously increasing citizen trust and accountability. Individuals, organisations and governments can freely share resources on a distributed ledger secured by encryption in a blockchain-based government model (ConsenSys, 2022). The distributed ledger model can then be leveraged to support an array of government and public sector applications, including digital currency and payments, identity management, supply chain traceability, healthcare, taxation and voting.

4.1.1 Benefits and applications

The key application of blockchain technology is to digitise and encrypt personal identities to improve access to digital government services while increasing efficiency, data security, and voting accessibility. Experiments using blockchain technology for electoral voting have yielded encouraging results in terms of improving efficiency and accountability in voting systems. As the first nation-state in the world to deploy blockchain technology in public systems, Estonia has successfully built a decentralised architecture that provides efficient government services to its citizens (PwC, 2019). Every interaction of a citizen with their administrations is linked to a single identity verified by the state. On their national e-participation platform, *Rahvaalgatus* (“Citizens’ Initiative”), all citizen proposals and signatures are verified securely through their electronic IDs, providing an efficient and transparent way to participate in community policymaking (TheGovLab.org, 2019). In another use case, the 2016 referendum on the peace treaty between the Colombian government and the *Fuerzas Armadas Revolucionarias de Colombia* (FARC) employed *Plebiscito Digital*, a blockchain-driven online voting platform that tested a novel method of certifying and authenticating electoral votes. This provided an opportunity for Colombians living abroad who were unable to vote at official consulates to participate (Sgueo, 2020).

Blockchains have been observed to act as “civic nervous systems”, facilitating peer-to-peer problem-solving and eliminating the need for a centralised directorate (Voto, 2017). Blockchain’s use cases in the real world demonstrate its myriad benefits. With blockchain technology, citizens would be able to vote more frequently and on more focused topics, such as specific pieces of legislation or a budget plan. Experimentation of how this mechanism could work to improve civic participation and representation is currently underway through the *Democracy Earth* project (Gakhal, 2020). Actualising the philosophy of a “liquid democracy”, citizens engage in collective decision-making through direct participation or dynamic representation. With dynamic representation, citizens can securely delegate their vote to subject matter experts on the blockchain, providing a more flexible form of representation than traditional modes of decision-making.

Blockchain also opens up new ways for citizens to participate in community service. Blockchain can motivate participation by using a cryptocurrency-style reward system, whereby citizens who participate actively in their community can be rewarded with “social coins” and given a stake in the community. *D-CENT* (Decentralised Citizens ENGagement Technologies), a Europe-wide project, provides federated architecture based on open source tools and a shared identity system powered by blockchain to bring together citizen-led organisations working on transforming citizen

engagement processes (D-CENT, n.d.). Another similar initiative, Social Coin, identifies community challenges using artificial intelligence and rewards blockchain-powered social coins to incentivise civic participation in resolving those challenges (The Social Coin, n.d.). On a bigger scale, the CityCoins initiative motivates civic participation by reserving a portion of CityCoin mining¹² profits for the city. CityCoins are envisioned as a way for ordinary people to own “stock” in a city, demonstrating and rewarding civic participation and loyalty to the city in a way that goes beyond trading for local products and services (Packard & Fingerhut, 2022). At the time of writing, the MiamiCoin wallet reserved for the city of Miami has reached a valuation of US\$23 million (~SGD32 million).

4.2 Decentralised Autonomous Organisations (DAO)

A decentralised autonomous organisation (DAO) is a community that is cooperatively owned and governed by their members, and managed by a set of rules enforced on a blockchain. Using built-in treasuries that may only be accessed with members’ permission, DAOs operate without the need for hierarchical management and can serve a variety of objectives.

Put simply, a DAO is “an internet community with a shared bank account” (Locke, 2021) that uses an interconnected web of smart contracts to automate all its essential and non-essential processes (Liebkind, 2019). To obtain voting power or membership in a DAO, decision-makers need to first buy governance tokens (i.e., cryptocurrencies tied to a specific project). By holding these tokens, members possess stock in the DAO and can help steer its direction. Typically, the weight of a member’s vote is determined by the amount they contributed to the project, where members with more tokens are awarded with more decision-making power. Unlike traditional organisations, DAOs are made up of both stakeholders and token holders. Token holders have the power to make recommendations for the organisation's direction and vote on them. As such, token holders are equally incentivised to ensure the DAO's success, and the algorithm promotes fair participation based on majority consensus (Rao, 2021). Some use cases of DAO include freelancer networks (e.g., TALAO), philanthropic organisations where members approve charity expenditures (e.g., Big Green DAO, Gitcoin DAO), and venture capital funds run by small investors (e.g., The DAO) (Cointelegraph, n.d.).

The key features of DAOs are summarised in Table 11 below:

¹² Crypto mining is the process of creating new coins by solving puzzles. It consists of computing systems equipped with specialised chips competing to solve mathematical puzzles. The first miner to solve the puzzle is rewarded with a coin.

Table 11. Key features of DAOs (adapted from Cointelegraph [n.d.] & Gonfalonieri [2020])

Feature*	Description
Community-based decision-making	Anyone can propose an innovative proposal in a DAO, which would then be considered by the entire group.
Transparency	DAOs are completely autonomous and transparent. Anyone can check the code because they are built on open-source blockchains. Because the blockchain records all transactions, members can audit their built-in treasuries.
Flat hierarchy	There is no hierarchy in such an organisation. Internal conflicts are frequently resolved quickly using the voting method, which follows the smart contract's pre-written regulations.
Trustless	While a traditional organisation demands a great deal of trust in the people who make executive decisions — particularly on behalf of stakeholders — DAOs merely require trust in the code.
Majority consensus	DAOs promote fair participation through its utilitarian philosophy encoded in the smart contracts. Reaching a majority consensus ensures that most members are satisfied with the decision.

*As DAO smart contracts vary depending on the code, some features may not be present in some DAOs.

4.2.1 Benefits and applications

The biggest advantage of DAOs in motivating civic participation lies in their ability to crowdfund and co-create solutions for the community. Similar to the process of participatory budgeting, members of a DAO are given agency to propose and vote on ideas that they prefer. The only difference is that the money to fund top-voted projects comes from the community members themselves and not the government. One ongoing successful project is the Gitcoin DAO, a platform that oversees a community treasury of GTC (Gitcoin) tokens for allocation to community-led projects (Cryptopedia, 2022). On the Gitcoin platform, coders and developers get paid to work on open-source software in a wide variety of programming languages to benefit their own digital communities, and public goods projects are supported through quadratic funding.¹³ Most recently, the Gitcoin DAO distributed over US\$40 million (~SGD55 million) in grants for digital infrastructure based on community voting (Thurman, 2021). To date, the Gitcoin DAO boasts a community of 84,244 open-source developers working remotely to build in Web 3.0 (Gitcoin, n.d.).

¹³ Individual donations are matched with equivalent quantities of cash from larger pools of funds provided by bigger donors in a quadratic funding structure for crowdfunding projects. The algorithm has been tweaked to reward projects that have a higher level of community support. For example, a grant that receives 100 individual \$1 donations will receive more matched funds than a grant that receives one \$100 donation.

In a DAO, members can participate in community governance by leveraging their governance tokens to propose and vote on various suggestions. A DAO gives active agency to the community it serves, encouraging members to exercise their voting powers and participate in decision-making. The Big Green DAO, a Web 3.0 charity focusing on food justice, touts itself as “a first-of-its-kind experiment to radically reconceive and restructure grant-making, disrupting embedded power structures by putting non-profits in the driver’s seat” (Big Green, n.d.). To participate, governance token holders discuss potential projects and vote on the direct distribution of funds to non-profit organisations. In this way, members get to directly decide who gets the money and how much they receive. Another venture capital fund known as The DAO functions similarly: anyone with a project can pitch their idea to the community and potentially receive funding from The DAO (Falkon, 2018). By ensuring absolute transparency in its process and allocating decision-making powers to community members, DAOs ensure direct democracy in civic participation.

4.3 The metaverse

Numerous online tools, such as blogs and microblogs (e.g., Twitter), social networking sites (e.g., Facebook), video sharing sites (e.g., YouTube), and 3D virtual worlds (e.g., Second Life), are all part of the core internet structure. The metaverse defies exact definition but is, broadly, a simulated digital environment that integrates and combines augmented reality (AR), virtual reality (VR), blockchain and social media principles to create areas for rich user interaction that mirror the actual world (XR Today, 2022).

The metaverse can also be understood as a new digital economy powered by blockchain that offers virtual spaces for participation, connection, sharing, and collaboration between individuals, organisations and governments. In idealised conceptions of the metaverse, the world is interoperable, letting people move virtual possessions from one platform to another. Unlike standalone platforms in the virtual world featuring virtual identities, avatars and inventories bound to a single platform (e.g., Facebook profile, game avatar), the portability of the metaverse can allow users to establish a persona that they can take with them across platforms and virtual spaces (Ravenscraft, 2022). Some key features of connected virtual worlds make the metaverse an idea worth exploring in civic participatory processes:

Table 12. Key features of virtual worlds that facilitate civic participation (adapted from Gordon & Koo [2008])

Feature	Description
Immersion	Virtual worlds are more accessible as social spaces to more people because they mirror physical spaces through 3D graphics and spatial mechanics. The avatar serves as a point of identification for participants, extending their sense of presence into the virtual environment and creating a strong sensation of being physically present with others.
Group formation	3D virtual environments favour group activities because they allow avatars to exchange representations of space in real time. Intentionally formed groups foster a sense of belonging to something with a common goal.
Constructive ownership	By offering a new mode for communicative action, virtual environments encourage participants to reconfigure relations of power omnipresent in the real world. Its man-made nature allows participants to take ownership of spaces and redefine relationships with others.
Playfulness	Unlike traditional design processes, virtual environments stimulate the spirit of play to imagine new possibilities. Play stimulates the imagination by proposing “what-ifs” or potential realities that could be even better than existing ones.

The creation of the metaverse has several implications. In addition to two-dimensional digital platforms, users now have an immersive world that they can occasionally inhabit. This creates a new economy where wealth can be created, traded and enhanced using currency (e.g., cryptocurrency, non-fungible tokens [NFTs], items) that is separate from and yet related to real-world currencies. In order to take advantage of the benefits offered by the metaverse, the development of new technologies, particularly in artificial intelligence and machine learning, is vital. Replicating real-world identities, objects and interactions requires an automatically updated “digital twin” that shares the same features as its real-world counterpart.¹⁴

4.3.1 Benefits and applications

Beyond simply advocating for disadvantaged groups within the virtual community, civic participation can be made more inclusive in the metaverse. This includes developing specialised public services and capacities to allow traditionally underrepresented groups such as the elderly and handicapped to participate virtually, which South Korea has drafted plans for (Chandran, 2021; Seoul Metropolitan Government, 2021).

[Park Han Woo on applications of the metaverse] New technologies such as metaverse would alter governance, particularly in the sector of the MICE, like

¹⁴ A digital twin is a virtual representation that serves as the real-time digital counterpart of a physical object or process.

government news meetings, like meet-up events. The non-fungible token and NFT certificate are just a couple of examples of how the metaverse might be used to perform public service.¹⁵

In particular, augmented deliberation, a process in which “groups deliberate in a face-to-face setting while simultaneously interacting with digital information” (Gordon & Manosevitch, 2011, p. 89), can transcend the dimensions of space and time to bring the discussion to the people, enabling more “trustful communication” (Porwol & Ojo, 2019, p. 330).

[Park Han Woo on government-citizen interaction on the metaverse] First and foremost, the metaverse has the potential to be another social media platform for the government to interact with each population. So it is possible to transmit not only textual, but also multimodal graphic interactive messages. Like the usual AI avatar in the metaverse, for example, [this] can partially substitute for one-on-one phone call and integrate and increase the frequency of communication between the government and the citizen.

In Taiwan, the government’s augmented deliberation project, Holopolis, has seen some promising results. Using virtual reality technology to build immersive environments that aid online participants to gain a better knowledge of local concerns, session officials have noted a reduction of power imbalance and overall increased participation, most notably among young participants who previously avoided participating in traditional face-to-face meetings (Tang, 2016; Democratic Innovations, 2019). With the right training and information, augmented deliberation has the potential to include seniors and other vulnerable groups in the community more effectively.

Contrary to concerns of creating an uncivil and lawless virtual world, past studies of deliberation and collaboration in multi-user virtual environments (MUVEs) have demonstrated its “unique nature of participation in respect to discursive equality, reciprocity, and respect” (Kasap, 2016, p. 671). Despite high levels of anonymity, researchers across different studies (Kasap, 2016; Gordon & Koo, 2008; Bers & Chau, 2006) have noted the increase in overall discursive quality, particularly in the area of freedom of expression. In a youth study conducted with another MUVE, it was found that “participants were able to cooperatively build a virtual community through engaging in meaningful civic actions and civic discourse” without facilitation by adults (Bers & Chau, 2006, p. 761). In the area of urban planning, the Hub2 initiative in the city of Boston was successful in encouraging participants to reimagine the public spaces they occupy and solve the community problems they identified. Most importantly, the digital playground allowed participants to freely manipulate the environment and reimagine spaces beyond the traditional confines of collaborative design (Gordon & Koo, 2008).

¹⁵ NFTs are encoded, or “minted”, on to a blockchain (such as Ethereum), which provides a digital certificate of ownership for a specific asset. They can be sold or exchanged like other cryptocurrencies (such as Bitcoin) via platforms such as Opensea.io or mintable.

5 Benchmarking and conditions for participation

Conversations between the Singapore government and citizens have evolved in form and scale over the past decades. Under the leadership of then-Prime Minister Mr Goh Chok Tong, the Singapore government took on a more consultative approach in the 1980s and 1990s and solicited citizens' feedback on a variety of policy concerns. They include the Nominated Member of Parliament scheme, the Feedback Unit and Town Councils. Televised feedback programmes by the Singapore Broadcasting Corporation enabled "viewers to express their opinions and ask questions of public interest" ("Feedback Show on TV to Be in Mandarin," 1985).

Globally, the Singapore government is renowned for the efficient delivery of citizen services. In the most recent Chandler Good Government Index, Singapore came in third internationally and first in Asia for government effectiveness.¹⁶ Singapore's high ranking was mainly attributed to the government's strong financial stewardship amidst a global pandemic. In 2020, Singapore ranked fifth on the Online Services Index — a global recognition of the nation's strong track record in government service delivery. Given the global trends relating to governments' technology use to engage citizens and the emergence of Web 3.0 technologies, how is Singapore faring in terms of harnessing different modalities to tap on the views, interests and energy of its citizens, beyond employing technology to deliver its services?

In earlier sections, we reviewed key initiatives to examine the progress and gaps of current engagement efforts in Singapore. These government initiatives to engage citizens in issues key to the country's progress fall broadly into three types — strategic and broad-based consultations, co-creation, and tech-driven initiatives (see Table 13 for a summary).

¹⁶ The index, in its second edition and published by Chandler Institute of Governance, a non-profit organisation based in Singapore, measures government capabilities and outcomes across 104 countries.

Table 13. Summary of civic participation types in Singapore

Type	Traits	Example(s)
Strategic and broad-based consultations	Consultation processes involve in-depth discussions between the government and participants. Participants are actively invited to share alternative viewpoints with one another. Participation is deliberative in nature and requires high levels of commitment. Often, topics of discussion are defined by the government and participation is voluntary in nature.	REACH National Dialogues
Co-creation	Co-creation builds on the principles of co-governance. Citizen inputs are considered at most stages of policymaking and integrated into participatory design. Participation is active and encourages open sharing of networks and resources within the partnership. Civic participation of this type is open and collaborative in nature.	Singapore Together Citizens' Panels Alliance for Action (AfA)
Tech-driven initiatives	Tech-driven initiatives involve digital tools and services to engage with citizens. Typically, participation requires citizens to be digitally competent to participate effectively.	Singapore Government Developer Portal Smart Nation Co-creating with Our People Everywhere (SCOPE)

Executing these engagement efforts typically take up significant resources such as manpower, time and money and the resource-intensive nature of the endeavour can be made more efficient if there is systematic benchmarking and evaluation. Instituting benchmarks and an evaluation framework will help governments measure and keep track of their progress in public engagement.

5.1 Global indices

Organising service delivery around citizens necessitates considerable interagency coordination that extends beyond functional silos. This is known in Singapore as a "whole-of-government" approach, in which agencies work on cross-cutting challenges based on common outcomes (Ganesan et al., 2019). By incorporating public perspectives into decision and service design, government agencies become more people-centred.

5.1.1 UN E-Government Survey 2020

The United Nations Department of Economic and Social Affairs (UNDESA) has been publishing the UN E-Government Survey since 2001. It is a benchmarking and development tool that allows

countries to learn from one another, identify areas of strength and challenges in e-government, and modify their policies and plans in this field.¹⁷

The UN E-Government Survey's E-Participation Index (EPI) is a supplementary index to the UN E-Government Survey.¹⁸ By the UN's definition, e-participation is a subset of both participation and e-government. The scope of e-government has expanded beyond the delivery of public services over time, as evidenced by the semantic shift from "e-government" to "digital government", as well as a growing emphasis on the role of information and communication technology in public administration. The EPI covers three dimensions in ascending stages of citizen engagement:

- ❖ Stage 1 — E-information: Enabling participation by providing citizens with public information and access to information without or upon demand
- ❖ Stage 2 — E-consultation: Engaging citizens in contributions to and deliberation on public policies and services
- ❖ Stage 3 — E-decision-making: Empowering citizens through co-design of policy options and co-production of service components and delivery modalities

In 2020, Singapore scored 98.15 per cent (Stage 1), 95.24 per cent (Stage 2), and 100 per cent (Stage 3). Singapore ranked sixth overall on the EPI, following Estonia, Republic of Korea, United States of America, Japan and New Zealand (see Table 14). In particular, Singapore was rated highly for its provision of e-services such as a one-stop-shop government portal (Gov.sg) that provides access to specialised portals in charge of e-participation (reach.gov.sg), e-services (citizenconnectcentre.gov.sg), open data (data.gov.sg), and public procurement (gebiz.gov.sg). The Ministry of Health's website, which used to display all public comments received in their entirety, has also been used as an example to illustrate transparency in the policymaking process. However, the respective scores for the different EPI components indicate the existence of gaps in the areas of e-consultation and e-information.

¹⁷ The ranking compares countries' e-government performance to one another rather than being an absolute measure.

¹⁸ The survey collects data on the supply side of e-participation (government opportunities), but it does not assess the demand side (uptake of opportunities and e-participation quality). The outcomes of e-participation (including its impact on the quality of policies and choices, as well as the quality of public services), the costs and benefits of e-participation, and the "e-democracy" component of e-participation are all areas not covered by the survey.

Table 14. Countries ranked highest in the 2020 E-Participation Index (United Nations, 2020, p. 364)

EPI rank in 2020	Country	EPI value in 2020	EPI rank in 2018	Change in EPI rank from 2018 to 2020
1	Estonia	1.000	27	+26
1	Republic of Korea	1.000	1	0
1	United States of America	1.000	5	+4
4	Japan	0.988	5	+1
4	New Zealand	0.988	5	+1
6	Austria	0.976	45	+39
6	Singapore	0.976	13	+7
6	United Kingdom of Great Britain and Northern Ireland	0.976	5	-1

As the regional leader in e-participation, the Republic of Korea leads the globe in online services provision and has the highest EPI value in the world alongside Estonia and the United States of America. The country's e-Government 2020 Master Plan guarantees that national policy is evidence-based, with an emphasis on providing citizens with open, creative government. Further, the government provides platforms for e-participation (e-People), open data (data.go.kr), and e-procurement in addition to current projects (KONEPS). Seoul's Policy Sharing Initiative also exemplifies the city's willingness to share knowledge, experience and lessons learned.

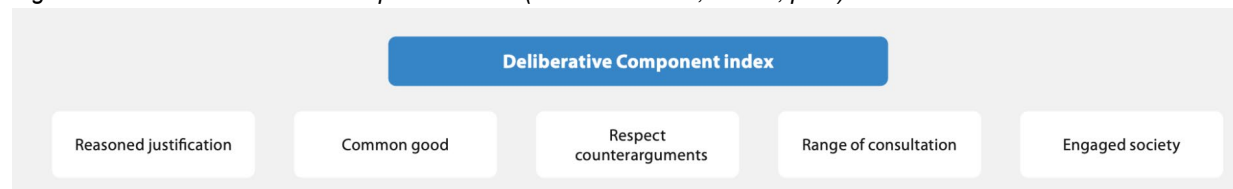
Global e-participation leader Estonia is regarded as one of the world's fastest-growing digital transformation countries. Eesti.ee is a one-stop shop for information and e-services from the Estonian government. The government also has a Civil Society Development Strategy, which involves citizens in policy and legal development. Citizens can, for example, propose suggestions, organise discussions, compose and deliver digitally signed petitions to the Estonian Parliament using the Citizen Initiative Portal (rahvaalgatus.ee).

To leverage opportunities offered by new technologies, the UN recommends continuous monitoring and evaluation of digital services within government and across society. Evidence-based governance requires the adoption of an iterative strategy that uses statistics and public feedback to inspire continual improvement of digital government services. According to the report, only 58 of the 193 UN member states give proof of user satisfaction with online or mobile services. While it is critical to solicit user feedback, it is also critical to publish the findings and close the feedback loop. When citizens know that their voices are being heard and that their input is leading significant change, it increases transparency and encourages trust in government.

5.1.2 Democracy Report 2022 by V-Dem Institute (University of Gothenburg, Sweden)

The V-Dem Liberal Democracy Index (LDI) captures both liberal and electoral dimensions of democracy based on 71 factors contained across five component indices: Electoral Democracy Index, Liberal Component Index, Egalitarian Component Index, Participatory Component Index and Deliberative Component Index.¹⁹ For the purpose of our review, we focus on the rankings scored on the Deliberative Component Index (DCI), the index most relevant to civic engagement.

Figure 6. V-Dem Deliberative Component Index (V-Dem Institute, 2022a, p. 55)



The DCI measures how far the democratic concept of deliberation has been implemented. It assesses the process by which a polity makes decisions. Ideally, there should be respectful dialogue among knowledgeable and competent participants who are open to persuasion at all stages, from preference development to final decision. The DCI attempts to determine how much public justifications governments give (if any) for their positions on issues of public policy, justify their positions in terms of the public good, acknowledge and respect counter-arguments, as well as how broad the range of consultation is to measure the level of deliberation in policy-making. Overall, deliberative characteristics deteriorated significantly in 32 countries, signalling “toxic polarisation”, a major increase from five a decade ago.

Table 15. Top 10 country scores for the Liberal Democracy Index (LDI) and all components indices based on 2021 data (V-Dem Institute, 2022a, p. 46)

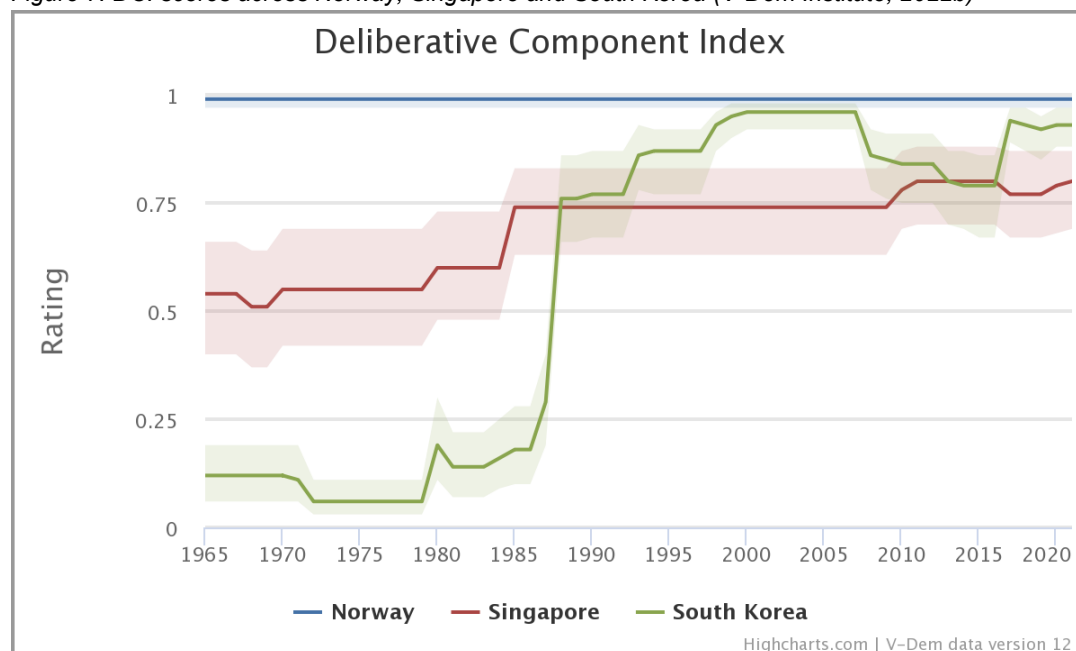
COUNTRY	LIBERAL DEMOCRACY INDEX (LDI)			ELECTORAL DEMOCRACY INDEX (EDI)			LIBERAL COMPONENT INDEX (LCI)			EGALITARIAN COMPONENT INDEX (ECI)			PARTICIPATORY COMPONENT INDEX (PCI)			DELIBERATIVE COMPONENT INDEX (DCI)			
	RANK	SCORE	SD+/-	RANK	SCORE	SD+/-	RANK	SCORE	SD+/-	RANK	SCORE	SD+/-	RANK	SCORE	SD+/-	RANK	SCORE	SD+/-	
Sweden	1	0,88	0,04	2	0,91	0,036	2	0,98	0,015	11	0,91	0,043	25	0,66	0,023	15	0,93	0,629	
Denmark	2	0,88	0,042	1	0,91	0,038	1	0,98	0,014	2	0,97	0,024	7	0,71	0,014	5	0,97	0,643	
Norway	3	0,86	0,044	4	0,9	0,04	4	0,96	0,017	1	0,97	0,025	28	0,65	0,018	1	0,99	0,635	
Costa Rica	4	0,85	0,042	3	0,9	0,036	9	0,95	0,025	18	0,89	0,049	18	0,66	0,037	-1	7	0,96	0,63
New Zealand	5	0,84	0,045	6	0,89	0,039	10	0,95	0,026	21	0,89	0,057	5	0,73	0,035	38	0,84	0,629	
Estonia	6	0,84	0,046	5	0,89	0,04	11	0,95	0,027	20	0,89	0,054	38	0,63	0,036	32	0,87	0,628	
Switzerland	7	0,84	0,049	7	0,89	0,042	6	0,96	0,028	5	0,94	0,039	1	0,88	0,016	3	0,97	0,643	
Finland	8	0,83	0,047	14	0,87	0,043	3	0,97	0,018	13	0,91	0,046	24	0,66	0,018	17	0,93	0,63	
Germany	9	0,82	0,048	13	0,87	0,043	7	0,96	0,025	4	0,94	0,033	20	0,66	0,013	2	0,98	0,628	
Ireland	10	0,82	0,05	9	0,88	0,043	14	0,93	0,032	16	0,89	0,051	21	0,66	0,041	11	0,94	0,641	

The top ranks in the *Democracy Report* were dominated by Scandinavian countries known for their direct and transparent civic engagement processes. Of these countries, Sweden, Denmark

¹⁹ With over 30 million data points for 202 nations from 1789 to 2021, Varieties of Democracy (V-Dem) creates the largest worldwide dataset on democracy. The EDI measures the extent of free and fair elections, freedom of expression, alternative sources of information, as well as suffrage and the degree to which government policy is vested in elected officials. The LCI captures the protection of civil liberties by rule of law, independent judiciary, and strong parliament. The ECI measures political participation in terms of equal access and distribution of resources across groups. The PCI captures the involvement of civil society organisations, mechanisms of direct democracy, and participation and representation through local and regional governments.

and Norway stand out as leaders in the overall LDI. Within the DCI, Norway, Germany, and Switzerland are the top three global leaders. Among Asian countries, South Korea is the region leader, coming in at 17th in the overall LDI and 14th on the DCI. On the same ranking, Singapore is ranked 97th on the overall LDI and 57th on the DCI — this was a slight improvement from the 102nd overall rank and 59th position (DCI) obtained the previous year (V-Dem Institute, 2021, p. 52).

Figure 7. DCI scores across Norway, Singapore and South Korea (V-Dem Institute, 2022b)



In South Korea, one of the most significant advancements noted was made in the increased variety and range of consultation methods. Deliberation has become actively encouraged for all, and a large number of non-elite groups now participate in national consultation exercises (Andersson & Mechkova, 2016).

[Lin Shu Yang on capacities for improvement] The first part is the society, including the government and citizens' side. Government needs to be more open minded, for citizens to have more momentum. They are eager to share, they're eager to contribute, such as the motorcyclist, and such as the civic tech community who are eager to help with their coding skills. The second part, I think, will be the channel. The fact that we're setting up this stage or channel, this space for people to join us. I think that's really important. And having enough capacity to facilitate that is really important as well. So that has to be there. And the third part, I think, will be technology. So for me, with the current technology we have, we can do a lot already.

South Korea scored the lowest in the reasoned justification indicator²⁰ in terms of public deliberation, indicating that elites tend to offer a single and simple reason when justifying why they expect proposed policies to have positive outcomes, rather than a more nuanced and complete justification for their decisions. In order to respect the time and effort offered by citizens through their participation, better thought needs to be given to justifying policy decisions. This development was also cited in the country brief of Germany as one of the key changes in the nation's steady improvement in deliberative engagement (Olander et al., 2016).

The reviewed reports indicate gaps in the areas of transparency and justification for Singapore, which needs to be addressed to increase trust between government and citizens and improve the quality of deliberative processes.

In the course of our review, other reports such as The Global Open Data Index and Freedom in the World were considered but omitted as they are beyond the scope of our current discussion due to their focus on political engagement and freedom of expression. In this report, we focus on indices relating to civic engagement to better identify existing gaps in current engagement efforts in Singapore.

6 Challenges and gaps

Besides learning from the success stories of other governments, policymakers should also pay attention to existing and future challenges to ensure that civic participation remains fair and inclusive. In this section, we identify the challenges that policymakers face, such as Singapore-specific challenges, threats that accompany emerging technologies, as well as perennial issues that diminish public engagement.

6.1 Existing public engagement initiatives in Singapore

6.1.1 Differences in approach and appetite

Our review of existing engagement initiatives also shed light on perennial challenges faced by both the Singapore government and citizens when interacting and collaborating with each other. One area where the government and some segments of the population have differing views on the approach is governance issues relating to sensitive topics such as race, religion and sexuality. As early as when The Next Lap and Remaking 21 were launched, some quarters of the society had already held the view that “politically sensitive issues have not been touched”, and out-of-bounds (OB) markers for public discourse remained undefined despite calls to reduce ambiguity (Lee, 2004).

While the government prefers to tread carefully given the sensitivity of such issues to multi-racial and multi-religious Singapore, some groups, particularly the younger generation, prefer more

²⁰ The reasoned justification indicator is one of the five indicators that make up the DCI. The indicator represents the core value that policy decisions must be reason-based.

candid and upfront conversations. At the 2020 President's Address at Parliament House, President Halimah Yacob noted that "younger Singaporeans prefer talking about issues more candidly and openly, which is a positive development" (Chin, 2020). However, she also reminded Singaporeans about the importance of "restraint and mutual respect" in discussions about sensitive topics such as race or religion. Similarly, in his opening remarks at a 2020 online dialogue on "Changing Times, Transforming Relationships" organised by OnePeople.sg, Law and Home Affairs Minister K. Shanmugam said that "young people have to decide what the nature of the discussion should be", emphasising the existence of generational differences with regards to their approaches towards public discourse on sensitive issues (Ho, 2020). Such observations underscore the point that there is "no one-size-fits-all" solution and that there is a need to design different processes to cater to the expectations and preferred modes of various segments of the population.

6.1.2 Perceptions of government's intent

Another challenge lies in people's perceptions of the government's intent. While feedback and public consultation channels allow citizens to provide input and suggestions, they are frequently perceived by the public as ways for the government to direct dissent and unhappiness through institutions that the government either controlled or has the capacity to depoliticise policy debate (Sim, 2011). For instance, the 2012 Bukit Brown meeting between interest groups and government agencies was seen as "an inadequate effort at genuine engagement" which "demonstrate[d] the old practice of presenting decisions" instead of being a genuine discussion (Chua, 2012).

One recent incident was the REACH survey on people's views towards LGBTQ issues and Section 377A. Intended as an online Listening Point discussion with specific groups, the survey link was leaked beyond its intended audience and received an overwhelming response of more than 36,000 responses over the course of one day (Ministry of Communications and Information, 2022). Disappointed individuals who were unable to submit their responses also voiced criticisms highlighting the methodological flaws of the survey and its dissemination (Y. Low, 2022). Such unclear attempts at engagement without satisfactory justification or follow-up may negatively impact the trust that citizens have in the government's sincerity in future engagement efforts.

6.1.3 Representativeness of views

Over the last three decades, the government ramped up its efforts to engage as diverse groups of people as possible. Such efforts were evident in the larger scale of more recent national conversations such as OSC. However, despite involving significantly more citizens in the exercise, questions on the representativeness of the insights drawn from the conversations remained, particularly along the levels of income and education (Chan, 2013). Similar criticisms about addressing repeated concerns were also raised by participants who have been monitoring conversations both online and offline (Chang, 2013b). The lack of representation of some segments could lead to their needs, challenges and aspirations not being considered.

[James S. Fishkin on representation] Governments all around the world engage with citizens, but they're self-selected, mobilised meetings, or self-selected comments online. So governments engage with citizens typically, with unrepresentative groups, who purport to speak for the rest of the people, but they don't actually represent the rest of the people.

For instance, while pre-engagement and post-engagement polls for several citizens' panels pointed to an increase in citizens' trust in the government, as well as an increase in participants' internal and external efficacy, some participants felt that there was insufficient time to work out certain complex issues and there was a lack of representation from the low-income and low-education groups.

6.2 Web 3.0 technologies

Despite the myriad benefits that Web 3.0 technologies offer, new platforms inevitably bring about new challenges. In a pilot study on collaborative building in a MUVE, researchers noted that "the technology itself presents a formidable barrier, even with a relatively tech-savvy pilot group" (Gordon & Koo, 2008, p. 217). There are also concerns that Web 3.0 technologies may potentially exacerbate the digital divide, replicating socioeconomic disparities in the virtual world that may result in "virtual exclusion" (Sharma, 2022). In his interview, Professor Park Han Woo highlighted the potential issues that communities of online users may face, stressing the importance of safeguarding regular users against anti-social behaviours which may prohibit them from participating actively:

[Park Han Woo on challenges in the metaverse] There are some of the obstacles. For example, it is essential to safeguard regular ordinary online users against various anti-social behaviours, such as identity theft, virtual assault and child pornography. On this line, a qualified moderator is required in the public sector or the metaverse platform. But we are actually short of this kind of moderation on metaverse in the public sector and in terms of Korea, the discrepancy between Seoul and the other areas of Korea is very substantial.

Tables 16 and 17 below examine the challenges of DAOs and the metaverse in the context of improving civic engagement.

Table 16. Challenges of DAOs for civic participation

Characteristic	Challenge
Decentralised and trustless	<p>Consensus-building: Despite the transparency offered by the blockchain, numerous information asymmetries are present among participants. Participants had no idea who one another were, what their goals and motivations were, or what their values and priorities were. In the case of The DAO, it was clear that some people could not put their faith in the different proposed solutions to their situation in a way that allowed them to vote effectively and efficiently for or against them. Their priorities and values clashed, and there were no plans in place to define, manage or control the situation (Morrison et al., 2020).</p>
Smart contracts	<p>Conflict resolution: In June 2016, The DAO was “hacked” anonymously and US\$60 million (~SGD\$84 million) was stolen within a few hours. Some attempts were made to prevent the cryptocurrency from being taken, but the majority vote consensus from the DAO members could not be attained in such a short period of time. As a result, the hacker made use of a loophole in the smart contract to drain the DAO fund without incurring any legal consequences (Falkon, 2018).</p> <p>The significance of this attack raised questions about the supposed efficiency and effectiveness of conflict resolution, as nothing could be done to stop the malicious attack without altering the code (on majority consensus) immediately, which even if were done, would violate the fundamental nature of the DAO and blockchain being a truly decentralised platform. Smart contracts, in theory, should not necessitate interpretation, monitoring or enforcement, and hence should not require conflict resolution, all of which are significant in traditional group governance (Morrison et al., 2020). Since there is no central governance or legal structure in place, it might be difficult to resolve disputes or manage unforeseen events involving smart contracts.</p> <p>Design: Because smart contracts follow a set of established rules and logic and make assumptions about the working environment, it is difficult to design them expressly for all possible situations. This shows that the existence of implicit work contracts as a fail-safe mechanism in the event of bad conditions or organisational crises may be critical to DAOs’ long-term organisational survival (Morrison et al., 2020).</p> <p>Legal issues: As terms in a written legal contract cannot readily be “translated” straight into the computer code of a smart contract, even by professional lawyers or developers, the ambiguity of the natural language on which smart contracts are built will make legal interpretation problematic (Wright & de Filippi, 2015).</p>

Table 17. Challenges of the metaverse for public engagement

Characteristic	Challenge
Immersion and interoperability	<p>Accessibility: The biggest threat is the lack of agreed-upon criteria for producing third-party metaverse accessibility tools. In fact, interoperability of software tools across the metaverse could become a problem for everyone, not just disabled people, and undermine the entire project. If big tech companies refuse to work together, the metaverse will wind up looking like a collection of advanced but non-integrated video game experiences instead of a brand-new technology paradigm providing a consistent framework for engaging across different touchpoints (Li, 2022).</p> <p>Engineering challenges: Significantly more computational power will be necessary to sustain such a sophisticated web of large immersive activities (Gartenberg, 2021). The World Bank posits that a quantum leap in data capture, transport, and storage will be necessary to accompany the adoption of augmented deliberation methods, necessitating large expenditures in digital infrastructure. This includes wide adoption of 5G technology along with significant improvements in XR (extended reality) and communication technologies that merge the physical and virtual worlds (Sudan et al., 2022).</p>
Community ownership	<p>Content moderation: All social networks face content moderation challenges. Recently, DAO mechanics have been proposed as a solution to the problem of content moderation, where participants who are willing to spend more tokens are given more power to speak.</p> <p>While the notion is enticing, distributed governance lacks a clear mechanism for resolving governance issues when they escalate. According to proponents, a “healthy and successful” decentralised application is one that generates greater usage; therefore, moderation would occur spontaneously without regulation since a toxic atmosphere would turn away participants. However, the idea has yet to be proven true (Li, 2022).</p>
Digital twin/ Virtual avatar	<p>Inclusivity: While the metaverse promises enjoyable experiences, its user base may be problematic in terms of diversity. According to studies, the majority of metaverse users are males between the ages of 18 and 34, with the majority (73 per cent) being Caucasian. This raises concerns about gender fairness and safety for female or gender-fluid participants (Castleberry, 2022).</p>

	<p>Representation & Diversity: While progress is being made, questions about actual representation and inclusion in the metaverse continue to arise. Adoption has not kept up with our cultural reality in terms of gender fluidity, LGBTQ+ representation, or accessibility. There is still a long way to go, particularly in terms of equitable physical entrance into digital realms, avatar options, and representation in virtual influencers and creators.</p> <p>Many users share similar concerns. Gender representation within virtual experiences was important to 70 per cent of poll respondents in a 2021 research from the Institute of Digital Fashion titled “My Self, My Avatar, My Identity: Diversity and Inclusivity within Virtual Worlds”. In the report, 60 per cent of respondents were concerned about the increasing possibility of bullying and discrimination against disabled persons in virtual worlds (Jones, 2022).</p>
	<p>Data-intensive: One of the possible hurdles for the efficient usage of digital twins is that these projects are data-intensive, and it is difficult to get clean and complete data (Clark, 2022).</p>

6.3 General challenges

Changes in how individuals communicate, mobilise, and engage with decision-makers are being driven by demographic trends and technology advancements. Governments are undergoing transformations as well, adopting digital tools to improve the quantity and quality of participation channels. The increasing migration of civic participation will come with its own attendant issues and challenges, and civic organisations must continue to be engaged in person, especially at the grassroots level.

Many scholars argue that aiming for full citizen participation mis-characterises the role of democratic institutions, fails to protect minorities from the whims of majorities, and places too much power in the hands of people who cannot be reasonably expected to wield it responsibly (Dacombe & Parvin, 2021). As governments increasingly shift civic participation online, some believe that digital democracy will disproportionately represent male, young, white, affluent and educated citizens, who are more likely to be politically engaged and possess the skills necessary to fully exploit the digital space (Beacon, 2021).

6.3.1 Ensuring inclusion

The relationship between socio-economic status and civic participation is the clearest and most consistent finding of empirical work on the subject. The low-income are the least likely to engage in a wide range of civic activities, such as voting, political party membership, or civic activism (Dacombe & Parvin, 2021). In all kinds of citizen participation, well-educated, civically active and politically concerned persons are overrepresented. Due to self-selection, biases are likely to persist even in mini publics that try to attract a diverse range of participants. Citizens who are less

interested in politics, less civically active and more cynical may have an impact on the outcome of participation, undermining the legitimacy and democratic value of participation (Michels & De Graaf, 2017). Research has also argued that the gender gap in participation is not only related to incentives and civic skills, but also is a result of lower levels of economic and social resources (Stadelmann-Steffen & Dermont, 2016).

Another perennial concern for policymakers, aside from one's availability of time and age, is the digital divide. Three interconnected processes contribute to unequal access to technology (Sgueo, 2020). First, internet access inequality limits participation to those with the proper technology, leaving others without a voice. Second, certain groups (e.g., LGBTQ+ persons, the handicapped) are systematically underrepresented in (if not entirely excluded from) online political and social discourses. Third, digital technology, particularly social media, is responsible for the dissemination of hoaxes and disinformation, as well as the polarisation of political views. Citizens who are misinformed not only harm themselves by having erroneous ideas of reality and polarised opinions, they also contribute to the erosion of trust in policymakers.

When using processes that rely purely on the number of votes to pass a proposal, there is a risk of certain interest groups dominating the process. Individual citizens or disadvantaged groups may be outbalanced by powerful collectives, resulting in increased isolation, exclusion and inequality (Andersen et al., 2019). For example, in 2017, members of a rugby club proposed the construction of a rugby stadium on the Decide Madrid platform. During the voting round, club members banded together to generate support and won as the district's most voted plan. The stadium's construction expenditures exceeded the district's entire annual budget, preventing the district from completing any other projects that year, effectively shutting out other disadvantaged individuals from getting their proposals considered. In South Korea, there are concerns about the increasing rural-urban divide, where citizens residing in rural areas are being left behind by national efforts to engage them ("Rural communities in South Korea face 'extinction' amid low birth rates and urban flight," 2016).

[Park Han Woo on implications of the changing metaverse landscape] So in early 2000, metaverse like Second Life did not emphasise the digital twin, it was like isolated from reality or separated from the digital world. On the other hand, the current metaverse highlights the digital twin. As a result, the metaverse platform will widen the gap between, you know, generations, regions, and geographies.

Table 18 below summarises the key factors affecting participation identified by deliberative scholars.

Table 18. Factors influencing extent of citizen participation

Factor	Description
Time and motivation	<p>In a study of young adults' civic participation in Singapore (Diehl & Chan, 2021), one of the most critical deciding criteria for participation was time. In another similar study, Toh (2021) observed that non-interest, combined with a lack of time and a lack of awareness of engagements, was commonly given as a reason for non-participation by respondents who had not attended any government-organised engagement sessions.</p> <p>Lack of platform incentives during the Dutch e-participatory budgeting process led to a loss of motivation in deeper participation (Bos & van der Does, 2021). When participants are not motivated by incentives to compensate for their efforts, participation levels are generally low (especially for disadvantaged groups).</p>
Ability and knowledge	<p>Individuals and organisations may require greater information, skills and resources before they may achieve control and influence and become collaborators in tackling social challenges (Ang, 2015). In Germany, marginalised social groups with scarce resources such as time, knowledge, and finances were found to have not participated in their open forums (Kersting, 2021).</p> <p>A number of participants invited to G1000 deliberative forums in the Netherlands did not turn up as they lacked the required expertise or knowledge to contribute (Michels & Binnema, 2018). Globally, individuals with poor-paying occupations and poor education are less likely to participate and commit for long periods of time (Sguelo, 2020).</p>
Conducive environment that values participant input	<p>Hacker (1996) observed that citizens prefer to play a more active and authentic role in the political process rather than simply be better-informed bystanders. In general, people must believe that their opinions are respected and sought in order to participate (Soh & Yuen, 2006). Citizens participate when they experience a sense of belonging — for example, when they regard their involvement and the issues as significant and worthwhile, and when they consider the participation process and atmosphere as open and supportive of their right to have a say in the process (Ang, 2015). When interviewed, participants of the Decide Madrid process agreed that the most important motivation is the possibility of seeing their contributions implemented or taken into account (Royo et al., 2020). As such, people feel empowered when they have the authority to act, influence and make decisions on important problems.</p>

6.3.2 Lag time to action

Large volumes of civic data have accumulated as a result of the rise of digital communication. As a result, governments experimenting with digital democratic innovations must now contend with the challenges that arise due to the size and complexity of civic data. Crowdsourcing exercises, for example, frequently encounter the problem of analysing enormous amounts of unstructured text generated by participants, which can be challenging for analysts to generate meaningful insights (Beacon, 2021). Governments must develop systematic methods for listening to and responding to participants, overcome the lag time between data collection and analysis, comprehend the large amount of unstructured civic data, and consider the quality of citizens' input. Until these issues are addressed, governments will not be able to gain insights from the crowd's input, harness its benefits, or meaningfully respond to it (Chen & Aitamurto, 2019).

NESTA, UK's innovation agency for social good, also emphasised the need for governments to communicate and give feedback (Simon et al., 2017). Specifically, participants must understand how their contributions are used especially in situations where progress is slow since people may lose interest and trust in the platform or project if communication is not done properly.

7 Policy recommendations

To address the challenges in the preceding section, seven policy recommendations are proffered and discussed below.

7.1 Appropriate representation and inclusion

The majority of studies in the NESTA Digital Democracy report (Simon et al., 2017) reveal that civic participation is skewed towards individuals who are already politically active, and also well-educated, metropolitan young men. A poll of those who participated in the French Digital Republic crowdsourcing exercise, for example, revealed that the majority of participants (77 per cent) were male, between the ages of 25 and 34, and well educated (82 per cent of participants had received some form of higher education) (Republique-Numerique, 2016). Participants in the Estonian People's Assembly process were much more likely to be educated, professional, right-wing males who already engage in politics both formally (i.e., contacting politicians and working in political organisations) and informally (i.e., signing petitions and boycotting brands) (Jonsson, 2020).

7.1.1 Designing for representation of different views

One of the experts we interviewed highlighted the need for governments to pay special attention to vulnerable communities, such as people with special needs.

[Lin Shu Yang on appropriate representation] One of the participants in our workshop was actually carried by his mom, because he had a car accident, and he cannot speak, he cannot express anything. And his mom carried him to a workshop and started to speak for him. And that's the moment when we feel okay,

is this correct? Because it's one person speaking for another person who cannot express for himself. And what do we want to do? Do we want to believe the mum? Or do we want to just observe him? Or do we want to help him to express through other ways? Maybe just sense the emotions or sense other things. So from that case study, we started to think about involving people who cannot express themselves.

In Singapore, including citizens who lack proper internet access or digital skills is a recurring challenge. The Singapore-based Ideas! portal does not allow for paper votes to be mailed or delivered in person when this is a feature enabled on other platforms such the Decide Madrid platform (Andersen et al., 2019). This bias towards digital participation will lead to disparities in civic participation, with a disproportionately larger number of educated, high-income, and tech-savvy adults dominating the online discourse. This has already been noted in local studies: most of the panel applicants in both the Recycle Right and Work-Life Harmony citizens' panels came from well-educated and affluent segments of the population (Soon & Sim, 2021).

When it comes to the deliberative process, Professor James Fishkin emphasised in his interview the importance of recruiting "a really representative sample", pointing to how many kinds of participatory democracy (e.g., participatory budgeting) do not yield representative samples as they are based on self-selection. He suggested using stratified random sampling instead of quota sampling so that the people in a given category will be randomly selected from that category.

[James S. Fishkin on fair representation] We have to make special efforts as there are special challenges in certain cases. For example, we did a project years ago on the aboriginals in Australia and policies affecting them. The percentage of Aboriginals in the population is very small and so, if we just recruited the normal percentage of Aboriginals in there, we wouldn't have even one in each small group, and they would feel isolated. So with our Australian partners, we recruited an over-sample of Aboriginals. But we weighted them back, because we wanted to make inferences about the Australian people, what they as a whole would think.

Moving forward, the question of inclusiveness will have to be revisited when we involve more stakeholders in different environments and for different issues.

[Lin Shu Yang on including non-humans] Do we invite non-humans in the workshop as well? For example, if there's a topic around the aboriginal people in Taiwan and their rights to use the land, because actually for the aboriginal community, there's no such a concept as land uses, the land is from nature and is not owned by anyone. So our structure as Taiwanese government, it's just very strange to them, why is the government owning land? And in that context, it just made us wonder, should we invite the land as part of the conversation? Should land have a seat there as well? Should the environment have a seat there as well, and how do we make that happen? Yeah, a lot of times we discuss but we're all humans. So how do we invite non-humans as part of the conversation?

7.1.2 Overcome barriers to participation

Citizens who are more likely to participate in civic life have privileged access to three key resources — time, money, and expertise (Sgueo, 2020). Furthermore, persons in underprivileged groups are less likely to commit for lengthy periods of time and are less interested in traditional forms of participation. For those who are less privileged, defraying the cost of civic participation and providing a conducive space for contribution can be effective ways to overcome the barriers to participation.

[Claudia Chwalisz on participation incentives] Consider paying people a small honorarium, not enough that it becomes the incentive to participate, but enough that, you know, it doesn't prevent some people from certain demographics from being less likely to be able to accept such an invitation. The same goes for providing childcare or providing transportation costs if it's happening in person. If it's happening online, providing technical support to someone who might need it to be able to participate, you know, these things all contribute to such a process actually being a truly democratic exercise.

[James S. Fishkin on providing a comfortable environment] We adopted the process in Uganda, Ghana, Senegal, Malawi — which is the poorest country in Africa — and Tanzania, on a national basis. We did deliberative polling projects in all those countries very successfully with excellent samples and inputs to the government were accepted and implemented, in most cases. We had to adapt the process, we couldn't have written surveys, we had individually administered oral questionnaires before and after. We had video versions of the briefing materials, which the people played several times. And other than that, it was about the same, but we had to adapt the process.

Table 19 contains an example of a participatory process that showcases the need to offer incentives to encourage active participation.

Table 19. Incentivising participation (Bos & van der Does, 2021)

Participatory process	Policy lessons
<p>Online Participatory Budgeting in The Hague (Netherlands)</p> <p>An e-participatory budgeting process that allowed citizens to decide the allocation of €30,000 to projects aiming to improve the quality of life in the neighbourhood.²¹</p>	<ul style="list-style-type: none"> ❖ Participation must be personal, open and cheap. According to the findings, high voter turnout can be achieved by personally encouraging citizens to vote and keeping voting requirements to a bare minimum. The process gathered so many proposals in part by lowering participation rules in the early stages of the process, allowing non-residents to participate freely. ❖ Citizens need incentives to participate in online discussions. The platform did not provide a clear incentive for users to participate in online discussions. A key recommendation is to link the posting of an argument or response to concrete benefits that can be expected in return (for instance, online social status or points that can be used later in the participatory process) (Gastil & Richards, 2017). ❖ Citizens can be nudged to participate in online debates. Nudging appears to be a viable alternative to (active) moderation of online debates for stimulating thought. In some situations, moderation may signify a lack of public control over the process or even lead to “accusations of political repression” (Wright, 2006). However, nudging individuals towards deliberation may not always be enough to prevent objectionable remarks from being posted.

The success of civic engagement initiatives is dependent on people’s ability to see themselves as integral members of the community and, as a result, to see society’s problems as at least partially their own. These individuals are aware of the moral and civic implications of community problems and are prepared to help resolve them.

7.1.3 Combining offline and online engagement

Despite the increasing digitalisation of tools and participation, traditional outreach and engagement plays an important role (Simon et al., 2017). This involves establishing relationships with civil society organisations and pre-existing networks in order to raise awareness of the public’s right to address authorities and provide feedback. Experiments in Paris, France to adopt a proactive combined approach to raise awareness through social media and offline points of connection have demonstrated how engagement can be increased by combining traditional offline outreach with digital activities (Asher et al., 2021).

²¹ The authors base their reflection on their observations of the ePB process, semi-structured interviews with 11 neighbourhood residents, a study on the usability of the online platform carried out by the municipality of The Hague among five citizens, and descriptive analyses regarding users’ activities on the online platform.

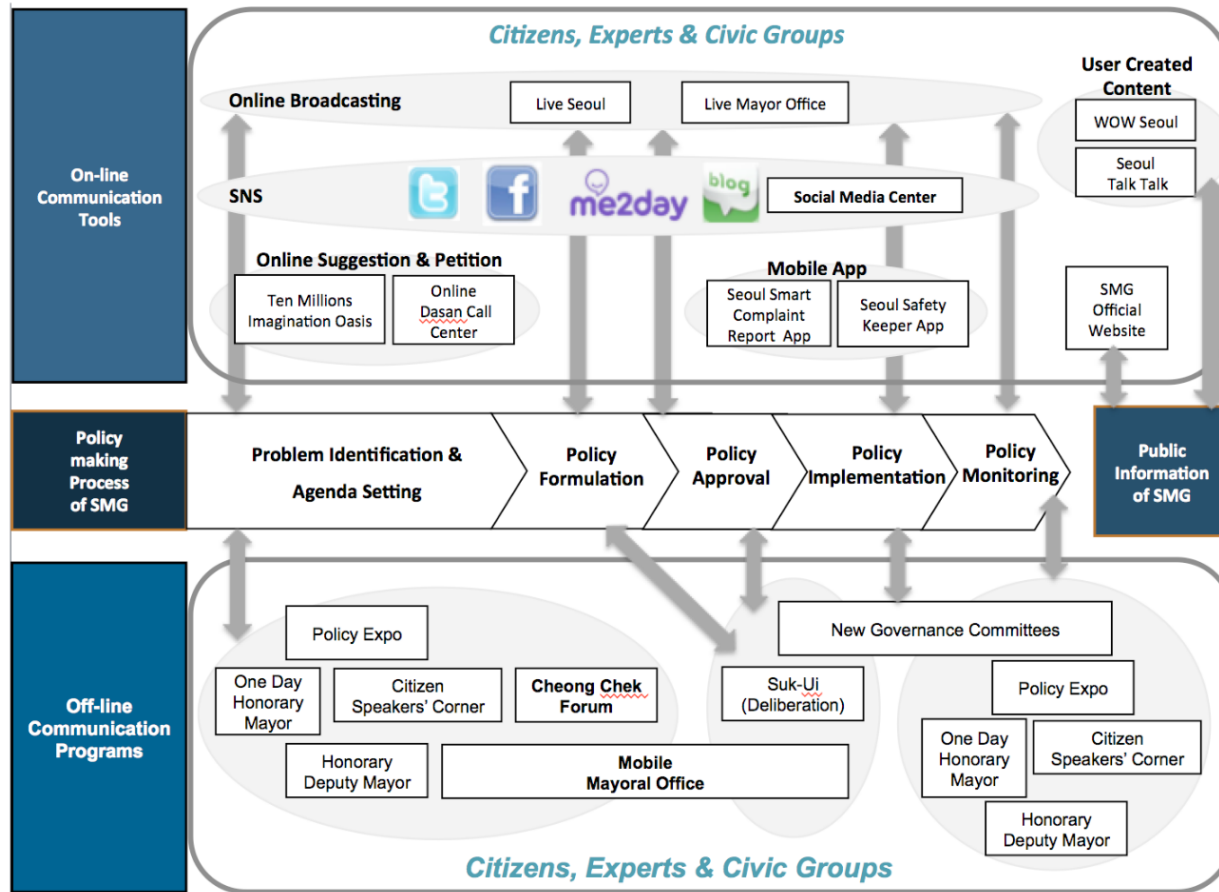
The UN E-Government Survey 2020 found that successful e-participation projects often combine online and offline activities. In policy fields including e-rulemaking, environmental impact assessment, climate change action and participatory budgeting, well-developed e-participation projects have integrated “packages” of online and offline activities. Activities that support e-participation include advertising the initiatives, developing and disseminating outreach plans, alternating virtual and physical meetings, providing educational material on the issues being discussed, and establishing connections with other programmes or initiatives. These actions are inextricably tied to the successful institutionalisation of e-participation efforts inside organisational processes.

[Lin Shu Yang on establishing proper networks] The PO (Participation Officers) Network becomes a very good vehicle for both ministries to invite citizens, because every month, we have teams and capacities, to organise workshops to coordinate and facilitate brainstorming workshops with citizens as well. We use that platform to open up for people, whoever wants to participate in this kind of conversation and have them participate.

The Seoul Innovation Bureau, established and run by the Seoul Metropolitan Government (SMG), is focused on civic cooperation and is responsible for overseeing public-private partnerships, innovation planning, youth and human rights policies, conflict resolution and the development of active local communities (Smith, 2018). The Bureau functions on a number of levels, one of which being the city's civic engagement. Individuals are asked to debate current and important policy topics, as well as participate in problem-solving for issues that affect their community, both online and in “field offices” visited by the mayor, where the officeholder can address matters directly with the citizens who are affected.

To engage citizens, both online and offline communication methods are used by the SMG. The majority of internet channels have been designed to make policy-making procedures and information more accessible to the public, as well as to receive real-time citizen feedback and comments. Meetings and events are aired live on several web broadcasting platforms, and real-time information is distributed through several social networking sites.

Figure 8. Online and offline communication tools and programmes used in Seoul's policy-making process (Han et al., 2013)



7.2 Managing citizen expectations

Necessary conditions from both the state and community must be met to ensure effective civic participation. The mismatch between participants' expectations and their actual impact on decision-making and implementation is a common issue in the top-down pathway. Top-down involvement could be jeopardised if there are no feedback systems between formal decision-making and participation procedures. Additionally, citizens' low levels of perceived efficacy might deter broad or committed participation.

[Claudia Chwalisz on clear communication and managing expectations] Usually, the best processes have a public response, and acknowledgement of those recommendations in the moment. But then there's like a follow-up maybe six months later, or later down the line, because it takes time, as you probably know, in the policy world, to be able to actually make those kinds of decisions, see how something could be implemented. So reconvening that group of people, or at least communicating to them what has been done with your recommendations, or how are we going to proceed and providing a rationale for yes, or why or how we're going to do this. It is also really important actually, because it respects the time

that people contributed. And yeah, and gives them a sense of like, actually, okay, this was worth it, and also communicates to a wider public that we are taking the views of other people like you seriously, that this wasn't an exercise just to tick a box to say, okay, we listen to people, and then we do whatever we want.

7.3 Digitally secure civic engagement

Related to the challenge of digital inclusion is the state of Singapore's digital infrastructure. In 2021, the Monetary Authority of Singapore (MAS) *Report on Critical Infrastructure for an Inclusive Digital Economy* highlighted four key pillars that underpin effective foundational digital infrastructures needed for Singapore to function efficiently as a smart nation (Monetary Authority of Singapore, 2021). The report stressed the need to ensure authentication and validation of an individual's identity while protecting privacy and security of information. The implication for civic engagement is that greater effort must be put into developing critical digital infrastructure such as blockchain technology and 5G connectivity if Singapore is to harness the power of new digital tools.

While trying to achieve islandwide 5G coverage by 2025, policymakers must also learn to maintain meaningful online presence against growing threats of a changing digital landscape. The 5G networks are now virtualised and software-driven as opposed to being centralised on hardware as with the 4G LTE. This means that the network infrastructure becomes more vulnerable to hacking and manipulation with the increase in attack surface (Bahari, 2021).

As civic participation increasingly moves online, ensuring a safe and secure environment for participants will be critical in earning public trust and cooperation. In March 2022, the Singapore government announced that it would be updating the Cybersecurity Code of Practice (CCoP) for the 11 Critical Information Infrastructure (CII) sectors as part of its move towards building a digitally secure, economically vibrant and socially stable Singapore. While the government seeks to plug existing vulnerabilities (e.g., ransomware that threatens national security and disrupts critical services), it also needs to plan for new threats that come with Web 3.0 technologies like blockchain, DAOs and the metaverse. What needs to be considered is extending its scope of regulation of cryptocurrency (beyond the promotion of Digital Payment Tokens), and the collection and use of personal data by platforms (Monetary Authority of Singapore, 2022).

[Park Han Woo on concerns with employing decentralised infrastructure] The metaverse is great on the regular internet network, but as you previously stated, the metaverse needs to be built on the blockchain network. Okay, so the blockchain network implies cryptocurrency. But the Korean government is also very cautious in adopting cryptocurrency-mediated metaverse. Because I do know cryptocurrency is a very debated topic right. But we need to actually distinguish between metaverse without cryptocurrencies and metaverse with cryptocurrencies. So for example, you know, existing legal law, existing legal provisions in South Korea prohibits online games to provide or to offer users, cryptocurrencies. But in the Philippines, a number of the youngsters, they're enjoying *Axie Infinity*. This is

a cryptocurrency-mediated online game on the metaverse. So, these existing laws or existing rules need to be modified in order to facilitate adoption of the metaverse particularly that requires blockchain and cryptocurrencies. This we have to think about. Why the metaverse with blockchain and cryptocurrencies? Because in order for the metaverse to be truly decentralised, they need the blockchain network. In order to be centralised, the metaverse can be built on a regular server and client structure. So in order to be decentralised, the metaverse should be rebuilt. Why does it have to be decentralised? Decentralised structures have more security reliability than server client network models. So this is also a more controversial issue in Korea as well.

Online harms such as harassment, bullying and scams also threaten the safety and security of online spaces. To mitigate this, institutions must establish clear rules for engagement that go hand in hand with infrastructural security. Professor Park suggested adopting a “sandbox approach”, where moderators hired by private companies developing the metaverse receive training through publicly funded government programmes that follow standardised frameworks for regulation.

[Park Han Woo on training for moderators] Companies will not invest in preparing educational training curriculum for the moderators because companies are still very much occupied with developing platforms, instead of protecting ordinary users. So governments should prepare for this kind of training, manuals, training resources, educational resources. And these resources must be shared among the moderators. The moderators need to be paid, or nobody will apply. That is the government should have some kind of training programme or education programmes for moderators.

7.4 Trust and transparency

7.4.1 Cultivating trust

When it comes to implementing effective civic participation mechanisms to ensure good local governance, stakeholders should be encouraged to participate in a way that is both inclusive and transparent (Council of Europe & Institute of International Sociology of Gorizia, 2020). It is observed that citizens are unlikely to be encouraged to participate if the government takes a top-down approach. Public engagement increases if the government embraces a bottom-up strategy and citizens are seen as participants (Kyakulumbye et al., 2019).

[Claudia Chwalisz on commitment] So I would say that one of the key factors of success actually comes down to there being a genuine commitment, and a genuine task that comes from the government to people. So people are more likely to participate if they have a sense that they will actually be able to influence a decision that is affecting their lives, their community.

The Council of Europe's *Civil Participation in Decision-Making Toolkit* (Council of Europe & Institute of International Sociology of Gorizia, 2020) stated the importance of responding to citizens as a main factor in any successful civic engagement process. In particular, citizens must see evidence that their views have been considered for them to continue participating actively in future processes.

Similarly, NESTA emphasised the need for governments to engage citizens early, and to communicate and give feedback (Simon et al., 2017).

- ❖ **Engaging people early:** The need to engage individuals as early as possible, to offer them the opportunity to establish the agenda and frame the problem, was one of the most consistent lessons from the case studies (e.g., vTaiwan process).
- ❖ **Communicate and provide feedback:** Participants must understand how their contributions are used even if that means simply receiving an email explaining why an idea was not accepted. This is especially crucial in situations where progress (such as the legislative process) is slow. People may lose interest and trust in the platform or project if communication is not done properly. The lack of visibility of the outcomes can lead to frustration on the part of citizens.

7.4.2 Demonstrating transparency

Even with access to channels to provide feedback, many of the channels through which people can express themselves outside of the categories and topics set by authorities are directed to relevant government departments or state agencies for a private response (Rodan, 2022). Recent initiatives, such as MCCY's Singapore Citizenship Workgroup²² and the Singapore Together team's AfAs,²³ point to the government's recognition of the need to improve the feedback loop in the engagement process.

This is an area where technology can be used to scale up such efforts for more transparency. Embedding the consultation, implementation and evaluation process on an online platform (e.g., v-Taiwan) will help keep citizens abreast of the progress of policy recommendations and instil trust in the policymaking process. Furthermore, leveraging technology in a more holistic manner where technology facilitates citizen participation in every or more policymaking stages helps the government to reach out to the young. The method of engagement becomes an important means of reaching out to a larger proportion of the younger generation, as many of those polled by Diehl and Chan (2021) expressed interest in engagement methods not currently used by the government, such as open-source platforms or online discussions — methods that do not require a set amount of time or specific venue for participation.

²² After the conclusion of the 2019 Citizens' Workgroup for Singapore Citizenship Journey organised by the MCCY, the ministry released a report acknowledging the time, commitment and effort that participants had contributed throughout the deliberative dialogue and elaborated on how the ministry would use the Workgroup's report to guide the update and development of various components of the Singapore Citizenship Journey.

²³ Similarly, the Singapore Together team periodically releases updates on ongoing AfAs in Singapore, allowing citizens to keep track of progress on topics that interest them.

As demonstrated in the case of Decide Madrid (see Table 20), unclear communication and a lack of transparency of the entire policymaking process can cause citizens to lose interest in future participation.

Table 20. Decide Madrid and its associated policy lesson (Royo et al., 2020)

Participatory process	Policy lesson
<p>Decide Madrid (Spain)</p> <p>A participation platform carried out through five sections: debates, proposals, polls, processes and participatory budgeting. Citizens can participate in three stages of the policy cycle: (i) agenda setting, (ii) policy analysis and preparation, (iii) policy formulation and monitoring.</p>	<p>❖ The most serious complaints about Decide Madrid appear to be transparency and communication. The possibility of seeing their contributions implemented or taken into account is the most important motivator for all citizens interviewed, despite the fact that they do not have enough information about internal workings to understand fully. Lack of openness makes it harder to legitimise participation programmes and may have a detrimental impact on citizens' future involvement levels, which is a major concern for long-term participation efforts.</p>

7.5 Matching tools with the purpose and issue

The plethora of engagement tools leads to the question of which engagement tool is most suitable for use in what context. According to NESTA, governments have to be clear about who they are engaging and why, and then tailor activities accordingly; it is critical to distinguish between problems that demand specialised knowledge, information, or expertise from those that require citizens to make a value judgement (Simon et al., 2017). When it comes to matters where everyone has an opinion based on firmly held values and where polarised argument is unlikely to change people's minds, there are risks to engaging the public. For topics where people may not have strong ideas or a lot of expertise, well-structured online deliberation activities could be more beneficial.

The most appropriate deliberative model is often determined by the policy issue. The more complicated the subject and its ramifications are, the more comprehensive the recommendations needed, and hence the more intricate the deliberative processes that are to be used. Citizens' Assemblies, for example, are well suited to address constitutional questions and issues of greater importance because this model allows for extensive learning and in-depth deliberation about the policy issue. A Citizens' Council can be a realistic solution for citizens at the local and regional levels to build a collective vision for the community and to address less complex communal concerns.

Another key factor to consider is the amount of flexibility participants should have during the deliberative process. More open-ended and flexible arrangements, such as Citizens' Councils, which allow participants to shape the process, may lead to more innovative and out-of-the-box ideas, and might be more well-suited to shape bigger visions. The commissioning public authority

must be willing to seriously consider all choices that arise as a result of the process. If decision-makers want specific, well-informed recommendations for a critical policy issue, they must first define the task for participants clearly. Figure 9 lists the properties of different representative deliberative models for various engagement purposes.

Figure 9. Properties of representative deliberative models (OECD, 2020, p. 17)

	Complexity of the policy question		Depth of recommendations		Flexibility given to participants		Resources necessary		Length of the process		Level of government for which used so far				So far used as permanent or ad hoc	
	Simple	Complex	Broad	Detailed, extensive	Rigid format	Flexible, participant-led	Low-cost	High-cost	Short	Long	Local	Regional/State	National/Federal	International	Ad hoc	Permanent
Informed citizen recommendations on policy questions																
Citizens' Assembly	—	—	—	—	—	—	—	—	—	—	✓	✓	✓		✓	
Citizens' Jury/Panel	—	—	—	—	—	—	—	—	—	—	✓	✓	✓	✓	✓	✓
Consensus Conference	—	—	—	—	—	—	—	—	—	—			✓		✓	
Planning Cell	—	—	—	—	—	—	—	—	—	—	✓	✓	✓		✓	
Citizen opinion on policy questions																
G1000	—	—	—	—	—	—	—	—	—	—	✓				✓	
Citizens' Council	—	—	—	—	—	—	—	—	—	—	✓	✓	✓		✓	✓
Citizens' Dialogues	—	—	—	—	—	—	—	—	—	—	✓	✓	✓	✓	✓	
Deliberative Poll/Survey	—	—	—	—	—	—	—	—	—	—	✓	✓	✓		✓	
World Wide Views	—	—	—	—	—	—	—	—	—	—			✓		✓	
Informed citizen evaluation of ballot measures																
Citizens' Initiative Review	—	—	—	—	—	—	—	—	—	—		✓			✓	✓
Permanent deliberative bodies																
The Ostbelgien Model	—	—	—	—	—	—	—	—	—	ongoing		✓				✓
City Observatory	—	—	—	—	—	—	—	—	—	ongoing	✓					✓

Source: OECD Database of Representative Deliberative Processes and Institutions (2020).

[Claudia Chwalisz on process design] Because participatory processes are usually designed in a way to try and engage as many people as possible to be open to anybody concerned by an issue, usually everybody in the community. So there's this emphasis on that breadth of participation.

[Claudia Chwalisz on which process to use] I think most often, where we've seen more participatory approaches used [is] in the early stages of policymaking, in gathering ideas and crowdsourcing inputs [...] they're even often used in collaboration with a deliberative process in the sense that at the very early stage of gathering evidence, some of that evidence might come from a more participatory process where the wider public is able to also contribute their ideas and inputs for the consideration of a more representative group. Whereas I would say that deliberative processes are really useful when there's a really hard problem that needs to be solved. And it requires weighing trade-offs.

Deliberative processes are useful when governments are genuinely interested in soliciting public sentiment and views of different segments of the population, which may be diverse and conflicting. For example, the deliberative poll on Japan's energy and environmental policy options resulted in increased knowledge among participants and a clear policy decision to eliminate nuclear energy dependence by 2030. Through the exercise, participants were educated on the historical background of Japan's current energy policy, allowing them to engage in a more informed discussion.

[James S. Fishkin on benefits of deliberation] We're allowing communication across differences, because people are talking to a random sample randomly assigned, they encounter diverse points of view that they never would have encountered before. And that allows them to weigh the competing arguments, the competing reasons. The root of the word "deliberation" is weighing, weighing the competing reasons, and we show that people weigh the competing reasons.

7.6 Evaluating process, outcome and impact

There is a growing corpus of research that focuses on evaluating civic engagement through measuring the process, in particular how engagement is conceived and delivered (Building Movement Project, 2019; City of Pitt Meadows, 2018). As public engagement already takes up significant resources such as manpower, time and money, the evaluation aspect is often neglected. This is especially the case when public engagement assumes a new form and is done on top of regular work. Specific procedures, such as evaluating the design of an engagement strategy, the success of achieving the engagement's objective, and the reach of the engagement, can be made more effective if meaningful statistics and insights are collected (Minnesota Department of Human Rights, 2018).

7.6.1 Measurement and Evaluation Tool for Engagement and e-Participation (METEP)

The United Nations Department of Economic and Social Affairs (UNDESA) has extensive expertise in promoting good governance around the world and aiding UN member states in reforming their public administration systems to increase transparency and accountability. The UNDESA's Division for Public Administration and Development Management (DPADM) established the METEP to enable member states to better assess the current state in leveraging information and communication technologies (ICT) for citizen engagement and public participation (UNDESA, 2014).

The METEP includes three important components of citizen engagement: (i) providing citizens with information, (ii) consulting citizens on development issues, and (iii) including citizens in decision-making. UNDESA proposes that the primary dimensions of public involvement assessment be conducted within the following areas of government activities:

- ❖ **Legal frameworks:** The existence or absence of legislative frameworks influences whether public organisations will have the ability and support to pursue engagement and e-participation in terms of resource allocation and development. Governments' focus on e-participation development and capacity building can also be seen in legal frameworks. It is critical to develop such frameworks in a collaborative manner in order to improve citizen involvement by increasing motivation, ownership, and satisfaction.
- ❖ **Organisational frameworks:** The use of resources provided for engagement and e-participation activities is influenced by organisational frameworks, which govern their efficiency, productivity, and responsiveness.
- ❖ **Channels/Modalities:** This includes addressing the cultural and financial implications of prioritising and utilising specific communication means for engagement and e-participation. For example, smart investment in ICT development in a cost-effective manner may result in significant efficiency impact for public organisations.
- ❖ **Outreach:** This has a direct impact on the inclusiveness of the e-participation endeavour, with a particular focus on stakeholder needs, particularly those of individuals who are disabled, displaced, aged, or otherwise marginalised (e.g., minority groups), whose lives are particularly touched by policy decisions. Engagement and e-participation outreach efforts must be coordinated with complementary education and ICT skills development.

Within these areas of government activities, the METEP questionnaire includes fact-based questions, agency-specific questions and experience-based assessment directed at government officials to assess their own agency's capacities.²⁴ As a self-evaluative tool, METEP can assist governments in reviewing their performance in the various dimensions of involvement under each building block of citizen engagement. The findings of such an assessment can serve as a valuable source of policy and practice recommendations aimed at involving citizens more directly in critical areas of development planning and government management. The presence of legal and organisational frameworks attests to the degree of institutionalisation of citizen engagement within government.

The experts we interviewed made similar recommendations to institutionalise civic engagement processes as an inherent part of policymaking.

[Lin Shu Yang on the importance of institutionalised processes] It's very important to institutionalise the work we have been doing as well. So in our office, when we think about open government in the office, we're mostly working on making it as a demand, making the citizen participation channel to be a part of the regulation as well. So citizens must have the right to participate in collaborative meetings when they want. And that's part of the regulation we set up in the government space.

²⁴ The full METEP questionnaire can be accessed online at this link: <https://publicadministration.un.org/Portals/1/UNPAN94222.pdf>

[James S. Fishkin on making citizen engagement an inherent part of policymaking]
This process is now required by law in Mongolia. They passed a law in Mongolia called the law on deliberative polling, where the text of the law is there. And if you look on the website, you'll see that we got an almost perfect sample of more than 700 people in Mongolia to deliberate about changes in the constitution. And the results were very helpful. And the parliament passed the changes by more than two thirds as recommended by the people.

7.6.2 Civic Engagement Framework

The METEP focuses on evaluating government efforts, both internal and external. Research on deliberative engagement found that the process should meet several criteria in order for citizens to arrive at an informed and considered position on a policy issue and for governments to build an informed citizenry and get buy-in for the government initiative in question. The criteria include inclusivity and diversity, fairness and equality, knowledge gain, efficacy (internal, external and political trust) and applicability (of the proposals) (Smith & Wales, 2000; Armour, 1995; Fishkin et al., 2000; Luskin et al., 2002; Hansen & Andersen, 2004; Barabas, 2004; Grönlund et al., 2010; Warburton et al., 2007).

The Civic Engagement Framework by the City of Pitt Meadows in Canada lists a comprehensive range of criteria — for process design, process implementation, outcome criteria and impact criteria — that governments should consider when evaluating their own processes:

Table 21. Civic engagement process and outcome evaluation criteria (City of Pitt Meadows, 2018, p. 63-64)

PROCESS EVALUATION CRITERIA	IMPACT / OUTCOME EVALUATION CRITERIA
Process Design Criteria:	Outcome Criteria (short-term observable changes of conditions or behaviours caused by the process):
<ul style="list-style-type: none"> ❖ Purpose: The type and level of engagement was appropriate for the desired results ❖ Approach: Approach and techniques reflected the organisation's goals ❖ Timing: Timing of participation was congruent with stages in the decision-making process ❖ Scope: Goals were established and process and decision constraints were identified at the beginning of the process ❖ Context: The process design responded to resource limitations, the local context, type of decision, and issue at hand ❖ Resources: The budget, resources and timeline was sufficient to achieve engagement goals 	<ul style="list-style-type: none"> ❖ Responsiveness: Community and/or stakeholder input made a demonstrable difference in decision-making ❖ Effectiveness: The process and techniques were effective to achieve the desired results ❖ Cost-effectiveness: The process was cost-effective; the value is justified for the time, energy and resources spent; could also be compared to similar processes ❖ Values/opinions: Participants' values or opinions changed throughout the process ❖ Education: Participants are educated or informed by the process ❖ Acceptance: The decision was broadly accepted ❖ Conflict reduction: Conflict among participants or between participants and the organisation was reduced ❖ Quality of decisions: The substantive quality of decisions is improved
Process Implementation Criteria:	Impact Criteria (long-term impacts of the programme/process):
<ul style="list-style-type: none"> ❖ Participation rate: The number and type of participants involved ❖ Outreach: The type and amount of outreach and communications to encourage or invite participation or raised awareness of the issue or process ❖ Representativeness: The process included a mix of participants that was representative of the diverse interests of a larger group ❖ Inclusivity and accessibility: The process was inclusive and accessible for a diverse range of people (this may include special considerations to ensure a safer environment for participants of different age, gender, ability, ethnicity, sexual orientation, etc.) and efforts were made to reduce barriers to participation ❖ Balanced and complete information: Information was easy for participants to understand, easy to access, made available in a timely manner, accurate, and unbiased/balanced; participants had the information they needed in order to participate 	<ul style="list-style-type: none"> ❖ External capacity building: The engagement process provided participants with additional skills, knowledge or experience on the issue; develops dialogue skills; or develops relationships or ongoing opportunities to work on the issue (with staff or with other stakeholders) ❖ Internal capacity building: The engagement process provided staff with additional skills, knowledge or experience on the issue or in engagement ❖ Trust: The engagement process helped to build trust in the organisation and build or strengthen relationships with community and stakeholders ❖ Social impact: The engagement process resulted in a social impact for participants or the broader community

<p>in a meaningful way</p> <ul style="list-style-type: none"> ❖ Fairness: The process was fair and unbiased; selection of participants was fair and legitimate ❖ Transparency: The process was transparent and participants can clearly see what was done, who was involved, what was heard, and how feedback will be used ❖ Flexibility: The process was able to respond to changing circumstances as needed ❖ Continuity: Participants were involved early in the process and there were opportunities to participate in multiple stages throughout the process ❖ Respectful: The process incorporated two-way communication that is respectful ❖ Values: The process incorporated values and beliefs into discussion questions ❖ Effectiveness: The process and techniques were effective to engage participants ❖ Appropriateness: Roles for community members, stakeholders, staff and decision-makers were appropriate for their skills, knowledge, and experience ❖ Satisfaction: Participants were satisfied with the process ❖ Accountability: Decision-makers were accountable and directly involved in the decision-making and participatory process 	
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[Lin Shu Yang on citizen capacity] So one side is citizen capacity to acquire the hard skills in understanding government structure and rules and regulations, using the right terminologies and so on, but also soft skills of participating in workshops, which is like, you know, be open-minded and listen to other people's needs and hopes and fears.

[Claudia Chwalisz on measuring impact on citizen efficacy] There's also some really interesting things to measure that have to do more with what impact this has had on the people who've been involved in such a process, because there is some research in the field. But I would say not enough.... And there's evidence which shows that, I mean, for everyone who is part of it, it really increases their sense of agency, their sense of political efficacy. So people become a lot more engaged in society more broadly after being part of something like this. And so better understanding the impact on people in that sense, in the short term, but I think it would be interesting to understand this also in the longer term, like five years later, you know, what has been the lasting impact of this, because to me, this is also part of the aim of wanting to create institutions, which would allow everybody to experience something like this in their lives.

7.7 Build foundation for Web 3.0 application

In the course of our review, we came across myriad applications and explorations of Web 3.0 technologies by governments and groups around the world. While such new technologies are still in their nascent stages, their potential to advance government-citizen relationship and revolutionise civic participation spaces is clear. As such, to prepare Singapore in our journey towards co-governance, policymakers should lay down the groundwork and look towards adopting these technologies at different stages of collective policymaking in future. Table 22 below contains suggestions for consideration and research as we move towards an increasingly digital world.

Table 22. Recommendations for Web 3.0 application

Characteristic	Recommendation
DAO	
Decentralised and trustless	<p>Developing capacity: Local capacity building — enhancing a group’s or an individual’s ability to fulfil needed responsibilities effectively, efficiently, and in a sustainable manner — is the cornerstone for successful decentralisation (Cheema & Rondinelli, 2007).</p> <p>Different types of trustless DAOs are likely to require varying configurations of separation of trust depending on their distribution of decision rights and claims. These new forms of governance will necessitate some type of ownership and control separation, but their most distinguishing feature will be how they alienate trust from the organisation’s owners and managers.</p> <p>The case study of The DAO raises serious concerns about who should be held accountable in DAOs, whether trustless systems are truly "trustless" and what organisations like The DAO will look like in the future after governance, legalities, ethics, and logic faults in the code are addressed (Morrison et al., 2020).</p>
Smart contracts	<p>Clarifying laws: If smart contracts are to remain loyal to their theoretical foundations, the only legally binding agreement should be located in the code. First and foremost, courts must determine if DAOs are protected by any legal jurisdiction and, if so, what is the entity’s legal standing (Hinkes, 2016; Gudkov, 2017).</p>
Metaverse	
Immersion and interoperability	<p>Strategic Partnerships: Delivering the capabilities and capacities that the metaverse requires will necessitate a collaborative ecosystem of partners. Cloud service providers will assist to swiftly scale,</p>

	<p>compute and enable rapid, reliable data migration, while network service providers will help reduce bottlenecks and virtualise important tasks. Finally, vendor-neutral interconnection partners will tie everything together (Lordelo, 2022).</p> <p>An effective partnership must take advantage of each partner's respective capabilities, resulting in increased combined capacities to meet people's needs and priorities, enhanced service quality and coverage, and cheaper costs. Partnerships can help promote local development by improving the state's ability to respond to people's needs (Cheema & Rondinelli, 2007).</p> <p>Nvidia and Meta have teamed up to improve the technical infrastructure and components required to keep the immersive worlds running. Intel and echo3D are also collaborating to explore 3D-first content management and distribution technologies and develop a Metaverse backend (Echo3D, 2022).</p>
Community ownership	<p>Adapting offline rules: Real-world law, as well as a balanced approach to limits and sanctions, may play a vital role in content moderation. However, we must be cautious about relying too much on automated moderation, suspensions, and bans, which only constitute a part of the process of creating healthy virtual environments (Sparrow, 2021).</p>
Digital twin/ Virtual avatar	<p>Inclusive co-designing: Those who are excluded from virtual worlds are frequently underrepresented in virtual-world research and development teams. As a result, it is critical that we recognise and address the barriers to inclusion that people confront in the early stages of the development process (Sparrow, 2021).</p> <p>Embrace grassroots innovations: One way to ensure that virtual environments accurately reflect the people who use them is to build on the work of those who are driving innovation from the ground up. Such grassroots initiatives are instructive in that they emphasise the concerns of individuals who are at risk of marginalisation as the metaverse expands (Tsai, 2022).</p>

To conclude, despite improvements made in recent years, gaps in civic engagement still exist. Preparing for a future with new digital tools and platforms requires that Singapore be among the frontrunners while also making sure that vulnerable individuals do not get left behind. Table 23 below summarises the recommendations offered in this section.

Table 23. Summary of recommendations

Recommendation	Description
Appropriate representation and inclusion	Engage disadvantaged segments of the population by ensuring accurate representation of views, overcoming barriers to participation, as well as providing both offline and online modes for participation.
Managing citizen expectations	Build effective feedback systems between formal decision-making and participation procedures to encourage committed participation.
Digitally-secure civic engagement	Adopt a “sandbox approach” to ensure a safe and secure digital environment for citizens to participate online.
Trust and transparency	Embrace a bottom-up strategy where citizens are seen as collaborators and policy decisions are communicated with good justification.
Matching tools with the purpose and issue	Be clear about whom are being engaged and why, and then tailor activities accordingly.
Evaluating process, outcome and impact	Evaluate civic engagement through measuring the process, in particular how engagement is conceived and delivered. The METEP and Civic Engagement Framework can be adapted for local evaluative processes.
Build foundation for Web 3.0 application	Focus on developing institutional capacity, clarifying and adapting offline rules for the online space, and co-designing with citizens to build the foundation for a future powered by Web 3.0 technologies.

8 Conclusion

In this review, we observed how developments in digital technology have facilitated and revolutionised existing civic engagement processes around the world, enhancing their efficiency, effectiveness, and overall experience for diverse segments of the population. On the other hand, they pose new threats and challenges particularly in the areas of digital inclusivity and cybersecurity.

In the case of Singapore, a digital leader even among the developed economies, the foremost challenge lies in closing the feedback loop between citizens and state, both offline and online. To close this gap, official communication channels must strive to be transparent and sincere in their justifications for policy issues. One way to do this is the institutionalisation of participatory processes as informed by the work on deliberative democracy at the OECD.

[Claudia Chwalisz on institutionalising participatory processes] Looking into the ways in which the use of deliberative democracy is becoming not just something that is ad-hoc and one off and dependent on political will, but something that actually becomes like a normal part of how certain types of public decisions are taken, by creating, by establishing legislation that either requires a deliberative process on certain types of issues, or by creating more permanent deliberative bodies that play an ongoing role and are connected to our existing representative democratic institutions.

Even in their nascent stage, Web 3.0 technologies have shown their potential in improving government-citizen relationship while offering alternative avenues for civic participation. However, substantial risk must inevitably be borne by policymakers who experiment with new technologies not yet thoroughly researched or understood. Instead of giving full attention to the applicability of different technologies, policymakers ought to also focus their efforts on enhancing digital inclusion and ensuring that active participation can happen both online and offline.

As Singapore forms new partnerships to build the metaverse (D. Low, 2022b), policymakers should continue to offer new opportunities for citizens to upskill and build digital efficacy. This review and the accompanying recommendations are our contribution to understanding the ever-evolving nature of civic processes, and we hope some of the insights will remain useful when civic engagement evolves along with new waves of digital technology.

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10 Appendix

1. The term “participatory democracy” refers to a model of democracy in which citizens have the power to decide directly on policy, and where politicians are responsible for implementing those policy decisions. It reflects the transition we observe in many countries — where governments are shifting from a closed model of decision-making to an open model of decision-making. In your opinion, what are the necessary components or ingredients of successful participatory democracy?
2. Are there good practices that you have seen from policymakers that have been effective in engaging citizens in policymaking?
 - ❖ How should governments decide whom they should include or exclude during open policymaking?
 - ❖ When should we be encouraging broad, mass-scale participation and when should we be tapping into more specific communities of expertise? When should citizens be consulted and when should they be invited to formulate policy?
3. What are the current gaps in engaging citizens and what should be done to close those gaps? In other words, how can participatory democracy processes be improved? What resources are required?
4. Can you think of any successful collaborations involving the government, the private and the people sectors in policy co-creation or co-implementation?
5. What do you foresee as some of the greatest challenges facing participatory democracy?
 - ❖ E.g., In an increasingly polarised/divided society where people retreat to their own tribes?
 - ❖ E.g., An increasing reliance on interest groups or experts to reflect public opinion, whereby there is a danger of them becoming exclusive “elite stakeholder networks” that exclude other members of the public who do not share the same interest or vision of the group, or possess similar expertise.
6. Looking to the future, how do you think participatory democracy will evolve (e.g., in terms of who is involved, the tools and processes)?
7. What advice or recommendations do you have for governments who are looking to adopt more open policymaking? What role can the private sector or civil society play to support such a shift?
8. What outcomes are meaningful to measure and track with regard to participatory democracy?