Leveraging GovTech for citizen participation

Innovative policymaking for the digital era

Digital Future Society

About
Digital Future Society

Digital Future Society is a non-profit transnational initiative that engages policymakers, civil society organisations, academic experts and entrepreneurs from around the world to explore, experiment and explain how technologies can be designed, used and governed in ways that create the conditions for a more inclusive and equitable society.

Our aim is to help policymakers identify, understand and prioritise key challenges and opportunities now and in the next ten years under key themes including public innovation, digital trust and equitable growth.

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Executive Summary

Over the last two decades, public innovation has become a top priority for governments across the world and is increasingly recognised as a vehicle to achieve the UN 2030 Agenda and the 17 Sustainable Development Goals (SDGs). Local and national administrations are developing digital government initiatives in attempts to be more open and place citizens at the centre of public policy. At the same time, citizens' expectations of public service delivery are changing, with growing demands for opportunities to participate meaningfully in public life.

In this context, the emerging concept of GovTech — an ecosystem in which startups and small and medium enterprises (SMEs) provide technology products and services to the public sector — is catching the attention of policymakers, investors and innovators alike. They view GovTech as an opportunity to generate economic growth, improve public services, increase efficiency and reduce costs. Emerging GovTech ecosystems — communities of stakeholders committed to public sector digitalisation — enable government agencies to move away from working predominantly with traditional, large technology vendors, and bring in new participants such as startups, SMEs, entrepreneurs, academics and communities. These new interactions encourage innovative ways of working within the public sector and foster novel ways of doing business.

Beyond internal innovation, GovTech offers governments new opportunities to engage with citizens. A growing number of governments are using digital-based participation tools developed by GovTech startups. These tools have the potential to increase participation, foster transparency and accountability, and strengthen citizen trust.

That said, consolidating a strong GovTech ecosystem is not free of challenges. A lack of funding opportunities and complex and long public procurement cycles are two key obstacles for startups entering the public sector marketplace. For government staff, four-year political cycles, the lack of project ownership, and working in silos can jeopardise the continuity of any participatory GovTech initiative.[1] Managing citizen expectations, preventing participation fatigue, striking a balance between quantity and quality of citizens' answers and ensuring inclusiveness are all challenges found in using tools such as online voting and participatory platforms.

This report presents the key findings of the Digital Future Society Think Tank Working Group on GovTech and citizen participation in the context of public innovation. With an audience of policymakers in mind, this report examines the opportunities and challenges presented by GovTech in the area of citizen participation. It concludes with a checklist of key recommendations for policymakers which can be grouped into four areas of action:

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[1] GovTech projects that focus specifically on the development of participatory processes whereby the values, concerns, and the needs of citizens are incorporated into government decision-making.

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1   Stimulate the GovTech ecosystem

- **Set up a dedicated GovTech programme or agency as a reference point** for all public sector levels (state, regional and local), private initiatives, startups and other actors in the GovTech ecosystem.

- **Create specialised investment funds and tax incentives** for investments in GovTech solutions development.

- **Establish procurement frameworks** that allow all government levels to pilot and experiment with new solutions.

- **Establish GovTech regulatory sandboxes** to allow GovTech solutions to be tested and integrated in operations and services provided by governments.

- **Set GovTech quality standards** according to the technology readiness level (TRL) of each product or service.

- **Establish more flexible procurement processes for GovTech** by launching pre-commercial procurement initiatives and exploring new ways to procure on-demand digital assets.

- **Establish citizen-centric GovTech accelerators**, bringing together civil servants and citizens to prototype solutions that can be replicated and scaled.

2   Build capacity within public administration

- **Make recruitment processes more flexible and adapt professional frameworks to attract tech, digital, innovation and citizen participation professionals** to the public sector.

- **Build internal capability to develop digital solutions** within government and encourage experimentation.

- **Build staff capacity in managing and using data** sourced from participatory GovTech initiatives.

- **Build internal capabilities in speculative design and futures visioning** to inform public policies in a proactive way.

- **Recognise public innovators within government** and support them to teach other public servants.

3   Create a national participatory GovTech strategy

- **Publish guidelines and toolkits for government managers to build better services through public participation**, whether they are digital or analogue.

- **Create a legal and administrative framework** to grant existing citizen participation tools and mechanisms continuity beyond political changes.

- **Include digital participation in existing digital governance strategies.**

- **Enhance cross-departmental coordination** by creating a GovTech and citizen engagement council, specialised units in Ministries, or coordination units.

- **Establish a product development framework:** Approach participatory GovTech solutions as a product development project where investment in the go-to-market phase (outreach and PR) is as important as technology development.

- **Standardise processes and methodologies** across the GovTech ecosystem.

- **Promote or mandate the use of open standards for technology** and open licenses for content.

4   Encourage citizen participation and foster communities of practice

- **Create a national participation platform** listing all online participation initiatives at national and local levels.

- **Develop a Right to Contribute protocol** based on urban commons and open data principles.

- **Design tools in collaboration with target citizen groups and include offline options** to ensure inclusiveness.

- **Build inspiring narratives, stories and case studies around citizen participation.** Each country, region and city will need to find its own inspiring local narrative built upon local history, characters, projects and specific challenges.

- **Gather best practices and learnings** on GovTech participation processes.

- **Foster continuous knowledge exchange** and trust building among ecosystem participants.

Introduction

GovTech, participation and public innovation

Digital technologies are driving the transformation of our public services, economies and societies. Across the world, public innovation is at the forefront of government agendas with national and local public agencies developing digital government (e-government) initiatives,[2] striving to be more open and transparent, and placing citizens at the centre of public policy making.

The United Nations emphasises the need for public innovation as a vehicle for governments to achieve its ambitious 2030 Agenda and 17 Sustainable Development Goals (SDGs): "Without public administration modernisation and transformation to adapt to today's needs, realising a better future for all will be impossible. Where capable administrations are lacking, governments are incapacitated; and where governments are incapacitated, sustainable development falls short."[3]

On 22 May 2019, Ministers from 40 countries adopted the Organisation for Economic Co-operation and Development (OECD) Declaration on Public Sector Innovation, which includes five principles and related actions to inform public innovation efforts.[4] These are:

- Embrace and enhance innovation within the public sector
- Encourage and equip all public sector servants to innovate
- Cultivate new partnerships and involve different voices
- Support exploration, iteration and testing
- Diffuse lessons and share practices

Public innovation and the growth of the GovTech sector are two sides of the same coin: a more sophisticated level of demand encourages more competitive and innovative supply. In other words, developers and startups need an innovative public sector counterpart that can recognise potentially co-created value. Governments can in turn benefit from a pluralistic marketplace from which to buy, avoiding traditional contractual lock-in.[5]

Historically, "large technology providers have reportedly negotiated multi-year sector contracts that increased in price year-on-year, even as the price of technologies fell."[6] Such lock-in has led to additional financial costs and reduced the capacity of the public sector to leverage new innovations on the market. The emerging GovTech field offers governments additional opportunities to cultivate new partnerships and involve different voices, an essential ingredient of public innovation and aligned with the OECD Declaration's third principle.

[2] UN E-Government Knowledgebase 2018

[3] Public Institutions for SDGs 2019

[4] OECD Declaration on Public Sector Innovation 2019

[5] Ortiz de Artiñano 2017

[6] Filer 2019

At the same time, public innovation and the digital transformation of the public sector imply new opportunities to strengthen the relationship between governments and society. **One of the ways in which GovTech can change how governments relate to citizens is by producing technology-based citizen participation tools that facilitate collective problem solving at city, state, national, and international levels**.[7]

In the United States and Europe, an increasing number of GovTech startups and SMEs are entering the citizen participation space. For instance, the Greek startup Novoville now operates in over 45 European cities. Through the use of an app, citizens can apply for services, report problems and voice their opinions. This information is fed in real time to a dashboard controlled by city councillors, who can act on the issues and update the citizen who filed the report.

An additional example is Insights, a crowd-consulting app that uses AI to collect, analyse, and respond to feedback from citizens, customers and employees.[8] Public sector clients include the German, Israeli and US governments. Another example, Cityflag, provides technological platforms (apps and web services) to encourage citizen participation and facilitate transparency and accountability within public management.[9]

Often, the founders of GovTech companies are concerned citizens with technological capacities and skills.[10] In addition to opening opportunities for economic development, GovTech can also bring new talent, people and perspectives to the public sector, and can build bridges between government and citizens.

This is especially relevant at a time when trust in government is low,[11] citizens' expectations of government delivery are changing, and more opportunities for participation is a growing demand voiced by citizens.[12] As the Open Government Partnership declaration states, citizen participation in public affairs is critical for making governments more effective, accountable, and inclusive.[13] At the European level, the Lisbon Agenda of 2000 already included the goal of fostering participation and social inclusion. More recently, the 2017 Tallinn ministerial declaration on e-government prioritised the modernisation of public services and user centricity, stating that "digital transformation can foster the [sic] trust in governments by increasing the transparency, responsiveness and reliability, and integrity of public governance."[14]

According to the World Bank, GovTech has the potential to increase participation, foster transparency and accountability, and build citizen trust. This potential is not limited to one specific region of the world; GovTech can be an effective enabler of transparency, efficiency and participation across developed and developing economies.[15]

That said, consolidating a strong GovTech sector is not free of challenges. For one, the existence of startups per se is not enough to establish or maintain a thriving GovTech sector. GovTech is not a panacea for all public administration needs, nor are GovTech tools inherently sufficient or even always the right tools for achieving successful citizen participation. Although undertaking public participation is relatively easy, doing it well is quite difficult. Many of the challenges found in offline citizen participation initiatives also arise in participatory GovTech initiatives.

About this report

This report presents the key findings of the Digital Future Society working group on public innovation. It begins with an introduction to GovTech and citizen participation. Part two presents four cases of citizen participation initiatives from countries with different levels of GovTech ecosystem development. The cases illustrate how GovTech is often used in tandem with other methods of digital participation - for example, partnerships with not-for-profits, and products and services built in-house. In other words, GovTech may add great value to participatory processes, but does not operate in a silo. Part three examines the opportunities and challenges faced by public and private actors when undertaking participatory GovTech initiatives. The report concludes with key recommendations for policymakers to capitalise on the opportunities and address some of the most pressing challenges raised by GovTech in the area of citizen participation.

Audience

With this report, our aim is to inform and offer insights primarily to policymakers - anyone working within government worldwide who must write or implement rules, governing frameworks and regulations that intersect with technology, and especially those who are working in the area of citizen participation. The contents of this report may also be useful for technology creators and providers that work closely with governments in deploying citizen participation tools.

Defining key concepts

What is GovTech?

There is no consensus on a universal definition for GovTech. This report considers GovTech to go beyond the technology tools used by government and understands it as an "emergent innovation ecosystem, in which startups and SMEs provide technology products and services, often using new and emerging technologies, to public sector clients. [...] The priorities of the GovTech ecosystem include improved efficiency and greater accountability in the public sector and its interactions with citizens. Building trust across diverse stakeholders in the ecosystem is crucial for developing a thriving GovTech industry to serve the domestic public sector and to contribute to national economic growth."[16]

The boundaries between GovTech and digital or e-government can at times be ambiguous. While GovTech refers to an ecosystem, e-government or digital government is a process that happens inside government when information and communication technologies (ICTs) are used to improve public services. The priorities of GovTech go beyond the delivery of a specific technological product to include industry creation or building new companies specialising in the public sector or SDGs through government competitions and startup accelerators.

[7] O'Reilly 2010

[8] Insights.us 2019

[9] Cityflag.co 2019

[10] Filer interview 2019

[11] Chwalisz 2017

[12] Open Government Partnership 2019

[13] Ibid.

[14] Joint Research Center of the European Commission 2019

[15] The World Bank 2019

[16] Filer 2019

Another distinction worth clarifying is that between GovTech and civic tech. Experts often refer to technologies developed by SMEs and startups for the purposes of citizen engagement as civic tech. The difference is that in GovTech, the client is always the public sector whereas in civic tech, the client might also be a private company, a charitable foundation, a community organisation, or even individuals. For example, a participatory online platform procured by a charitable foundation would be civic tech. However, if the same platform was procured by a government, it would be considered GovTech. Since the same organisation can provide participatory tools to governments and other clients, a civic tech company could also do GovTech, and vice versa.

What is citizen participation?

Experts define and classify citizen participation in different ways. For the purpose of this report, citizen participation is defined as the process through which "the values, concerns, and the needs of citizens are incorporated into governmental decision making processes. This implies a bidirectional interaction and communication which aims at improving decisions made in the public sphere with the support of citizens."[17]
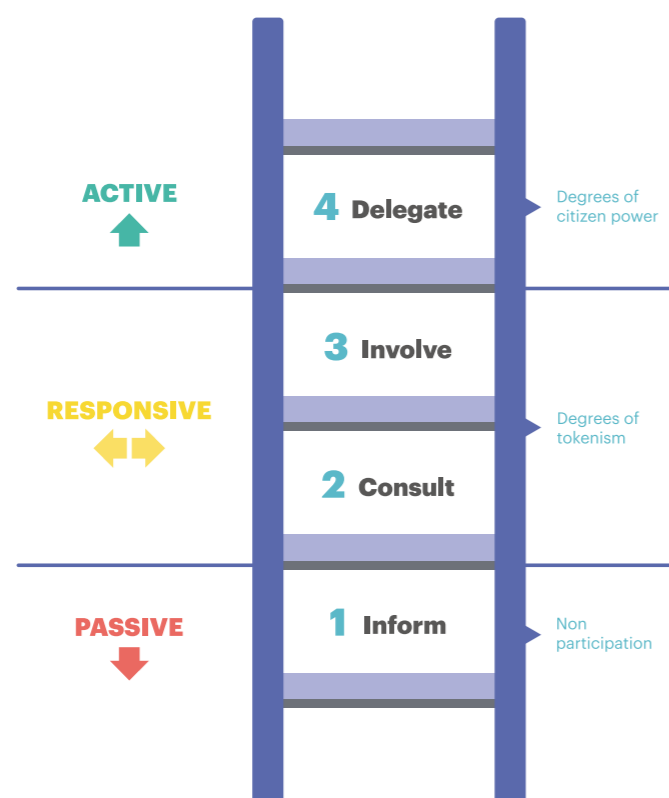

ACTIVE

4 Delegate — Degrees of citizen power

3 Involve

RESPONSIVE

2 Consult — Degrees of tokenism

PASSIVE

1 Inform — Non participation

Image source: Arnstein 1971

In general, participation can be offline and online, bottom up and top down, formal and informal, and occur at the local, national and international levels. Governments typically encourage citizen participation in the drafting and approval of new laws, the elaboration and evaluation of policies and budgeting.[18] Citizens' involvement can go from being simply informed on one end of the participation spectrum, to being fully empowered by having the final decision delegated to them.[19] Participation also covers a wide range of mechanisms and includes citizen assemblies, citizen juries, surveys, online platforms and portals, Q and A sessions, consultative documents, forums, etc.[20]

Scope

GovTech cuts across different sectors such as health, justice or education, and across different public sector domains including administration, digital infrastructure, service provision, citizen participation, and regulation.

The focus of this report is on the area of citizen participation and specifically, on the potential of GovTech in supporting citizen participation, strengthening democratic processes and increasing citizens' trust in governments, through technology-based citizen participation tools.

Why focus on citizen participation?

Citizen participation is a key ingredient of public innovation and essential for increasing government responsiveness, efficiency, accountability, and trust. Over the last two decades, against a backdrop of growing inequality, low voter turnout rates, political apathy and general disengagement, governments have increasingly sought novel ways of engaging citizens and integrating participation processes into policymaking. Furthermore, citizen participation is not only a tool for generating trust, but can also enhance legitimacy, create a greater sense of belonging and increase commitment to public policies.[21]

Acknowledging that digital technologies have enabled new "passive", tech-based forms of engagement to emerge (such as Transport for London collecting passengers' data to improve its services), this report focuses on government-driven, tech-based, citizen participation initiatives, built in collaboration with or by GovTech actors at local and national levels, where participation is understood to imply an active and conscious involvement on the part of the citizen.

17 Güemes and Resina 2018

18 Rubio 2018

19 Hughes and Varga 2018

20 Rubio 2018

21 Manville 2014

1

State of the art

GovTech and citizen participation in context

Citizen participation is a vital part of democratic governance. It is closely connected to the notion of active citizenship, which "implies working towards the betterment of one's community through participation to improve life for all members of the community."[22] In its political and cultural dimension, citizen participation is also conceived as a right in the Universal Declaration of Human Rights.[23]

Citizen participation in the digital era

In the digital era, the internet has allowed for the motto "if citizens don't come to your town hall, we bring the town hall to your citizens" to come true.[24] In addition, social media has fuelled the virality of movements such as #metoo and the success of online platforms such as change.org.

In recent years, an increasing number of startups and SMEs have begun to develop participatory tools for public administrations, especially in Europe.[25] This growth can be attributed to increasing dissatisfaction among citizens towards institutions and political leaders perceived to be technocratic, elitist and distanced from the citizen perspective, as well as a growing demand for better access and more influence in public decision-making. Finally, citizens are calling for public administrations to be more accountable and transparent.

As the case studies in the following section illustrate, digital technologies have allowed for participation to take on new dimensions by enabling citizens to report issues in their neighbourhood through a mobile app, vote online, provide feedback on municipal policy, or use sensors to collect data and get deeply involved in finding solutions to problems which affect them.

Globally, two leading frameworks, the Open Government Partnership (OGP) and the UN Agenda 2030, have placed citizens centre stage and reinforce the democratic values of citizen participation, trust and transparency. The OGP was created in 2011 and now has over 75 government members. It promotes the use of new technologies to strengthen governance and fosters "a global culture of open government that empowers and delivers for citizens, and advances the ideals of open and participatory 21st century government."[26]

22 Council of Europe 2017

23 UN.org n.d.

24 CitizenLab.co 2019

25 Filer interview 2019

26 Open Government Partnership 2019

The UN Agenda 2030 also calls for inclusive, accountable and responsive governance. A recent UN survey found e-government to be a powerful tool in promoting transparent and accountable institutions, such as through open data and participatory decision-making, with significant potential to support the implementation of the 17 SDGs.[27]

GovTech as an emerging ecosystem

GovTech ecosystems are just emerging and include government and public agencies, startups and entrepreneurs, funders, incubators and accelerators, universities, consultants, contractors and citizens. Ideas for GovTech companies and solutions come from a range of sources including government challenge programmes and ideas competitions, public-private sector joint competitions, incubators and accelerators, government hackathons, and multi-lateral and third sector initiatives.[28]

THE GOVTECH INNOVATION ECOSYSTEM

Startups & entrepeneurs · Funders · Incubators & accelerators · Citizens · Contractors · Consultants · Universities · Government & public agencies

Image source: Digital Future Society

Data source: Filer 2019

[27] UN News 2016

[28] Filer 2019

GovTech and the SDGs

The SDGs are being used as a driver for public innovation across the world. In Uganda, the government and social enterprise CTI Africa runs the Buikwe Project, a GovTech innovation challenge calling for distributed ledger technology solutions linked to the SDGs.[29] In Azerbaijan, the 2018 National Innovation Challenge[30] called for startups to present solutions related to the SDGs and in Nigeria the SDG 16 innovation challenge seeks to find creative solutions for peace, justice and strong institutions.[31]

Within the GovTech field, startups and companies have begun to develop products and services that directly address the SDGs. For instance, to reach SDG3 on good health and wellbeing, Statwig in India uses blockchain to enhance supply-chain management and ensure the efficient delivery of vaccines.[32] Regarding SDG 15 Life on Land, the Portuguese company Farmcloud is building a cloud-based platform for farm management, allowing farmers to track and control climate and feeding controllers.[33]

GovTech startups and companies working on products that help achieve the SDGs may be eligible for SDG-focused funding such as blended finance, defined as the use of public development capital to de-risk SDG-related investments in order to attract commercial capital from private investors who would otherwise not have participated.[34]

In addition, international challenges and hackathons encourage startups and companies around the world to develop products and services aligned with the SDGs. For instance, the GovHack series, a competition held annually in eight cities across the world, awards the GovTech Prize to startups developing technology for governments to better serve their citizens.[35]

In terms of national initiatives and competitions, Portugal is leading by example in showing how a government can further encourage the GovTech and SDG connection with a public competition that rewards innovative startups addressing at least one of the 17 SDGs. The first edition of the competition was held in 2018 and the goal is twofold: to promote the SDGs nationwide and to stimulate the GovTech ecosystem.[36]

[29] Government of Uganda – The Buikwe Challenge 2019

[30] Sil.vc 2018

[31] Accountability Lab 2019

[32] Filer 2019

[33] Jorge 2018

[34] Blended Finance Taskforce 2018

[35] GovHack 2019

[36] Observatory of Public Sector Innovation 2018

Portugal

Farmcloud

Cloud-based farm management platform for tracking climate and feeding controllers

INFORMAT

Winner of the Portuguese govtech competition. Develops intelligent forest management technologies

15 LIFE ON LAND

Azerbaijan

National Innovation Challenge

Call for startups to present SDG-related solutions

United States

Votem

Provides a mobile voting platform designed for securely casting votes

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Govtech

Public competition rewarding innovative products and services provided by startups addressing at least one of the 17 SDGs

India

Statwig

Uses blockchain technologies to ensure efficient delivery of vaccines through enhanced supply chain management

3 GOOD HEALTH AND WELL-BEING

Mexico

Cityflag

Provides technologies to facilitate direct interaction between local governments and citizens

11 SUSTAINABLE CITIES AND COMMUNITIES

Nigeria

SDG 16 Innovation Challenge

Innovation challenge for young people to find creative solutions for peace, justice, and strong institutions

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

South Africa

Isizwe

A non-profit partnership with government to roll out free WiFi in low-income communities

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Uganda

Buikwe Project

Innovation challenge calling for distributed ledger technology solutions linked to the SDGs

Image source:
Digital Future Society

Data sources:
Government of Uganda - The Buikwe Challenge 2019
Sil.vc 2018
Accountability Lab 2019
Filer 2019
Jorge 2018

GovTech across the world

In general, the extent to which GovTech is recognised as a field in its own right, and the extent to which it has formally developed as a sector or ecosystem, varies across countries.

The fact that 85% of all GovTech deals made in 2018 were in the US and only 7% in Europe[37] indicates how different investment levels and barriers startups face in entering the European public sector market. In the US, the GovTech market is growing at a compound annual rate of 1.46%.[38]

In Europe, the UK is one of the countries leading the way with both the government and corporations actively stimulating the GovTech sector by providing support and financial incentives and innovating procurement processes. GovTech is seen as an opportunity to revitalise the public sector and as a source of economic growth; investment in GovTech suppliers reportedly grew 189% between 2014 and 2016.[39]

Through its 20 million GBP GovTech Fund, the UK GovTech Catalyst challenge "supports public sector organisations at central and local levels in finding innovative solutions to operational service and policy delivery challenges."[40]

The UK government has also made efforts to improve and open up procurement processes to smaller tech firms. It has simplified contracts and proactively encourages small and medium enterprises to supply to the public sector through its UK Digital Marketplace portal, launched in 2014.

By 2018, 90% of suppliers on the portal were SMEs and the initiative has reportedly led to lower prices as well as more specialised and local providers.[41] It has also resulted in the creation of a public sector digital buying community that has regular meetings, and a global digital marketplace programme that aims to develop an international procurement reform playbook supported by the OECD.[42]

PUBLIC, a leading venture firm, helps tech startups transform public services, offering them support and advice through its GovStart scheme. PUBLIC has recently established Public Hall, the first technology-focused co-working space in the heart of Westminster. This new space aims to generate a greater exchange between politicians, civil servants and technologists, and helps to position London as "the global GovTech capital."[43]

Elsewhere in Europe, the GovTech Poland government agency has run hackathons since 2017 to find solutions for challenges faced by Ministries and local governments. As a result of the flexible procurement system, startups, small companies, research teams and even individuals can compete with Forbes 500 companies. The initiative tries to make Poland more startup friendly by focusing on the quality of the idea, not the creator's market power.[44] In the past, an average of 43% of tenders would receive only one offer. Today, hackathons generate an average of 50 offers per tender.

Thailand provides another example of a government that recognises the opportunities offered by the GovTech sector ("worth over 1 billion USD")[45] and is taking steps to stimulate its growth. Until recently, businesses needed to have a 10-year track record to be eligible to tender. With changes in procurement, a dedicated track will free startups from having to compete under the same criteria as larger firms. This is similar to Singapore's case where startups accredited by the government enter a "green lane" to sell to public agencies.[46]

In other countries, GovTech is still in its infancy, yet to be recognised as an ecosystem or sector in its own right and therefore its potential is largely still to be realised. While there may be tech startups and small companies, there are no GovTech accelerators or specialised investors. No concerted efforts are made to stimulate the ecosystem, and existing initiatives are scattered across different sectors.

In these contexts, many of the new technology-based solutions provided by startups and SMEs for the public sector are thus not identified as GovTech. And with no specific frameworks or institutions (such as the GovTech agencies in Poland and Singapore) to support the needs of SMEs and startups in their interaction with the public sector, these entities often find themselves in a David vs Goliath scenario when competing for public contract opportunities.

[37] Jandel 2018

[38] Haisler 2019

[39] PWC 2016

[40] GOV.UK 2019

[41] Smith 2018

[42] Grant 2018

[43] Startacus 2019

[44] Observatory of Public Sector Innovation 2017

[45] Rohaidi 2019

[46] Basu and Rohaidi 2017

2

Case studies

GovTech and citizen participation in practice

Advancements in digital technologies have enabled citizen participation tools to evolve in recent years, allowing governments to interact with their citizens in new and more sophisticated ways. In parallel, GovTech startups and small companies are increasingly specialising in this niche area.

This section presents four examples of recent, tech-based, government-led citizen participation initiatives from four countries with varying levels of GovTech ecosystem maturity: Spain, India, Singapore, and the UK.

Except for Spain, each country has some form of a GovTech ecosystem:
- In 2014, India launched various initiatives that would become its nascent GovTech ecosystem, such as open data initiatives or the creation of an API[47] to communicate with public services.[48]
- Singapore has a specific government technology agency called GovTech embedded directly within the Prime Minister's Office.[49]
- As we have seen in Section 1, the UK is leading the way with programmes such as its GovTech Catalyst challenge, accelerators like PUBLIC and open procurement efforts.

The following case studies illustrate how GovTech partnerships (startups and small innovative firms working with government) can effectively be engaged either as the main mode of participatory project delivery or in tandem with other methods of citizen participation, such as partnerships with not-for-profits, or products and services built in-house. In other words, GovTech can add great value to citizen participation initiatives as long as it does not operate in a silo.

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[47] API stands for Application Programming Interface, a software intermediary that allows two applications to talk to each other (Pearlman 2016).

[48] NextBigWhat 2014

[49] Government Technology Agency 2019

Spain: Decide Madrid

Democracy was called into question in May 2011 when thousands of people took to the streets in Madrid and chanted "they call it democracy, but it isn't!" The 15M, or "Indignados" movement turned the city into a laboratory of new techno-political practices, digital platforms and an international point of reference for urban commons, new forms of city governance and local alternatives to centralised policymaking.[50]

In 2015, the newly created municipal party Ahora Madrid was elected to the City Council, which sparked the creation of a new Department of Citizen Participation, Transparency and Open Government. That same year, in line with the party manifesto's ambitions in the area of citizen participation, the Department launched a new portal called Decide Madrid.

This portal was built using agile software development methods, starting from scratch and iterating to add new features. All software was licensed using free software licenses, so other developers or municipal bodies could contribute to the development of this new platform and implement it in their cities. This complete package was released internationally under the name Consul.

Initially, Consul could only handle public debates (discussion threads much like a Facebook group), but in the last four years its capabilities have expanded to include citizen proposals, participatory budgeting, secure citizen voting, and collaborative legislation. If a submitted proposal is supported by at least 1% of the population, it is put forward to a popular vote. If there are more votes in favour than against, the proposal is then implemented by the institution (in the case of Madrid, by the City Council).[51]

The development and maintenance of the platform requires technologists, civil servants and legal experts to work closely together and thus ensure maximum legitimacy in the development of the tool. Changes made on a technical level often require legal and regulatory adjustments. For example, the initial threshold which proposals had to reach in order to pass to a popular vote was 2% of the population. Over time this threshold was deemed too high and was brought down to 1%, a change that was made on the platform itself but also reflected in Madrid City Council's legal regulations governing citizen participation.
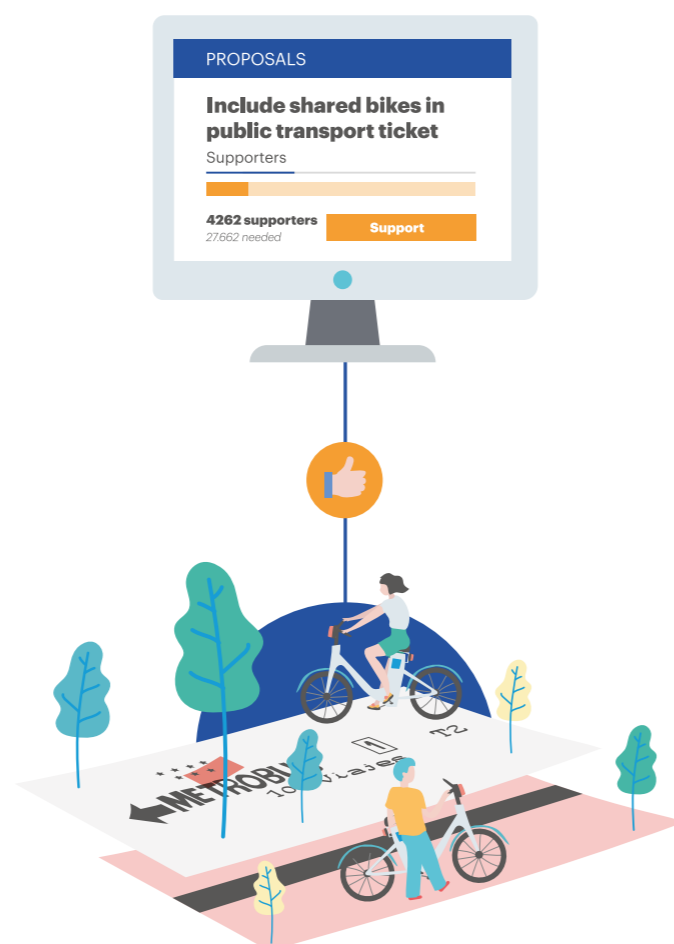

Image source: Digital Future Society

Results

- At the time of writing, Decide Madrid has been visited over 11 million times. 26,227 proposals have been made, which have received over 3 million votes of support. The 452,823 registered users have generated 5,630 debates and 193,000 comments.
- Consul has scaled worldwide, becoming one of the largest institutional participatory democracy platforms. Thanks to its open-source software, the Consul project has been implemented by 130 institutions in 33 countries, reaching 90 million citizens. 200 million EUR have been spent on initiatives linked to proposals put forward on Consul.[52]
- All institutions using Consul belong to the same network, a community of users who share experiences, best practices and knowledge and who regularly contribute to the tool's improvement and growth.
- The United Nations awarded Madrid City Council the Public Service Award in 2018.[53]

Key takeaways

- Using agile software development methods enables new features to be added incrementally, based on citizen demands.

- To prevent a digital gap and guarantee citizens' right to vote, Consul provides ways to incorporate digital as well as paper ballots and so that potentially excluded citizens can vote by post.

- Free open source software licensing facilitates the replication and adoption of this platform by new cities and regions.

- Open development processes enable third parties to submit issues while simultaneously allowing developers from the wider community to propose code-based solutions.

- Citizen participation platforms such as Consul require both technical and legal experts with the capability to implement all the legal mechanisms that underpin its technical features.

- Enabling participatory platforms requires support from all levels in the municipal structure, from city mayors to civil servants.

- Working group experts noted a major challenge in boosting data literacy — ensuring individuals and organisations not only understand the consequences of data collection and use, but also its value.

[50] Bermejo and Gutiérrez 2019
[51] Madrid City Council n.d.

[52] Madrid City Council n.d.
[53] El Mundo 2018

India: I Change My City

I Change My City is a location-based online platform for civic action formally launched in Bangalore in 2012. It fosters "active citizenship to facilitate action, and to bring about change on the ground."[54] Today, the Janaagraha Centre for Citizenship and Democracy operates the platform in partnership with urban governance agencies and citizen organisations.

The complaint posting process is relatively easy for citizens with basic digital literacy. After creating an account and selecting a complaint category, the user is asked to provide a brief description of the problem and link it to a location on a Google map. The portal also allows for the uploading of images. Users can get their complaint upvoted by mobilising support from other users.

The complaints become visible to the corresponding government agency, who can respond and report action on the complaint. The complainant can then confirm or refute their claims, which leads to stronger engagement between citizens, organisations such as resident welfare associations (RWAs), and the government in the resolution of civic issues. Janaagraha's team works closely with local urban organisations and the RWAs to facilitate interactions, including face-to-face meetings. The platform also provides information about relevant laws and regulations related to urban governance and data about sanctioned projects within a neighbourhood which can be used by the citizens to report non-compliance or discrepancies.

Results

- At the time of writing, the platform has 16,194,065 users across more than 100 municipalities in India who have posted more than 33,774,959 complaints related to various aspects of urban governance. Complaints range from issues involving waste disposal services, the condition of city roads and street lights, traffic congestion, construction of footpaths and bus shelters and supply of electricity and water.

- The complaint resolution rate is reportedly 92.84%.

Key takeaways

- The guiding principle of promoting active citizenship by encouraging citizens to participate in the process of maintaining civic infrastructure in partnership with government agencies is important in attaining a high adoption rate.

- Online participation platforms like I Change My City stand to benefit from a strong offline component of local-level engagement. In this case, mediation by the Janaagraha team in following up on complaints with civic authorities and helping them connect with citizen collectives to enable richer discussions have helped build trust and may have contributed to high rates of complaint resolution.
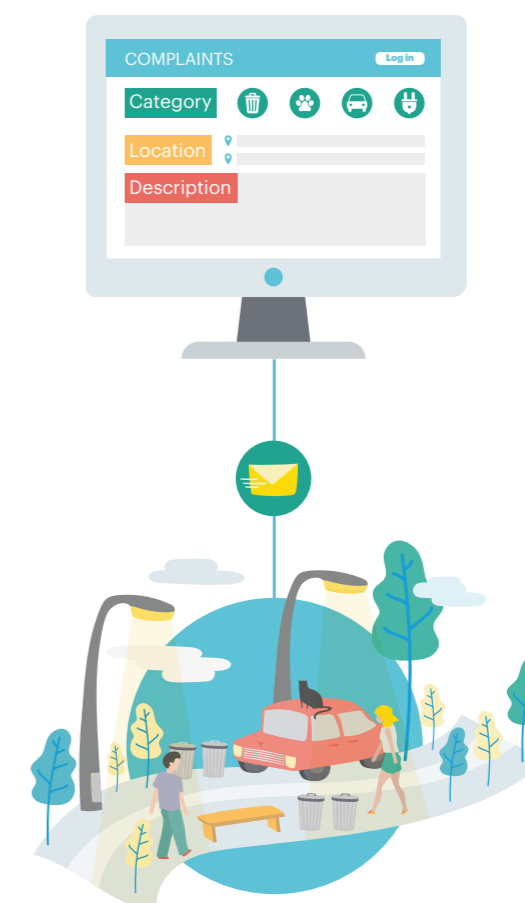

Image source: Digital Future Society

Singapore: The Ideas! Crowdsourcing Platform

The Ideas! platform, a government portal used for crowdsourcing ideas, is an emblematic example of Singapore's vibrant GovTech sector and its drive to improve public services by capitalising on collective intelligence and using technology as an enabler.[55]

In 2014, senior leaders within the government realised that different agencies were launching separate engagement campaigns and building their own micro-sites for ideation and crowdsourcing ideas. On average, 15 individual campaigns were launched per year.

Recognising that the intricacies of the internal government structure were of little interest to the wider public, the government decided to aggregate all the engagement initiatives into one platform. Cautious not to build a white elephant, they first built a beta platform based on the American IdeaScale citizen engagement platform[56] and spent three months engaging government agencies and reaching out to citizens to understand their views on ideation, crowdsourcing, and the trial platform.

Following the trial period, the government decided to build the platform in-house to meet security standards and to maintain control over the site's features and functionality.

Ideas! has since evolved beyond a crowdsourcing platform to now include initiatives to engage with businesses and industry (including GovTech firms) and the gathering of ideas to feed into hackathons and offline initiatives. For instance, ideas and information can be gathered from citizens which can then be filtered into an offline initiative, such as a citizen jury. Looking forward, the plan is now for the platform to support citizen-led activities so that citizens can launch their own campaigns.

On a technical level, the Ideas! Portal is managed by the tech experts working at the GovTech agency, allowing other departments and agencies to focus on content and participation campaigns.

Results

- An increased number of agencies are using the platform year on year while launching a consistent number of campaigns.

- The annual savings generated by the implementation of this consolidated platform has been evaluated at over 0.5 million SGD annually.

- To date, 1,284 ideas have been submitted by 7,574 contributors, with 86 completed challenges, and 100 prizes won.
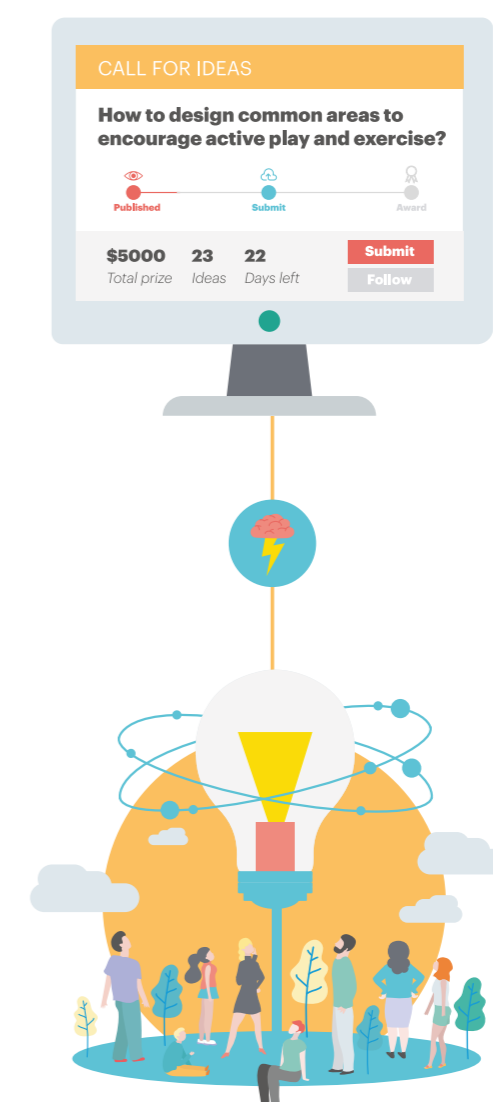

Image source: Digital Future Society

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[55] Collective intelligence is a form of universal, distributed intelligence, which arises from the collaboration and competition of many individuals (Levy 1997).

[56] IdeaScale 2019

Key takeaways

- One of the main pitfalls of crowdsourcing is underdeveloped ideas. Adding a panel of subject matter experts to the workflow was found to be crucial in providing useful information and encouraging critical thinking, both of which have helped develop good ideas.[57]

- Developing an idea through proof of concept, piloting, prototyping, and engaging industry partners takes time: anywhere from six months and up to two years. Citizens' expectations must be managed carefully throughout the iterative process.

- When the National Youth Council (NYC) first started using the Ideas! portal, the volume of ideas increased by 200% compared to when the process was offline. While this was anticipated by the NYC, it is worth noting how outreach capacities grow exponentially when campaigns are brought to the digital space. Since the number of ideas put forward may increase, public administration agencies should ensure their ability to respond.

- Altruism is a key driving force behind citizens' desire to participate. Citizens often state during the regular focus groups that they participate in the Ideas! portal because they want to support their community.

- Citizen participation must be a two-way process. During the face-to-face focus group discussions held every other year since the portal's inception, many citizens expressed a willingness to accept their idea might not be the best, and that the acknowledgement of their idea was more important than its selection.

United Kingdom: The Bristol Approach to Citizen Sensing

The first wave of smart city initiatives in the UK ten years ago was characterised by a top-down, private sector approach. Smart city solutions were largely tech-driven and often failed to address citizens' real needs, while data and knowhow was largely kept within large IT corporations.[58]

Bristol City Council was keen to explore how to ensure citizens remained at the heart of public service and policy transformations fuelled by digital technologies. In 2016, the council commissioned Knowle West Media Centre (KWMC) to develop a framework for placing citizens at the heart of policy-making. KWMC is a not-for-profit organisation working in a community that faces challenges such as poor health, underemployment, and fuel poverty. Since its inception in 1996, KWMC has supported people to harness the power of technology and creativity to develop new tools and ideas. Working with technologists, community organisations, artists, universities and citizens, KWMC developed the Bristol Approach to Citizen Sensing framework.[59]

The Bristol Approach draws on collective intelligence and altruism, two untapped resources found in communities. Built on participatory research methods, the six-step framework upskills and empowers citizens, brings together communities and strengthens relationships between citizens and local administrations. The process starts with the identification and framing of the problem, the design and deployment of a tool, the orchestration phase that happens when the data is being collected and local media and other members of the wider community get involved and finally, the outcome stage.

The first pilot project using the Bristol Approach was the 2016 Dampbusters project, designed to address the problem of damp which affects 30% of homes in the city and poses serious health risks, among other problems.[60]

KWMC supported citizens in east Bristol to work with artists and technologists to create frog-shaped sensors which citizens placed in their homes to collect temperature and humidity data.

[57] Ecquaria.com 2016

[58] Holtaway 2018

[59] Knowle West Media Centre 2016

[60] Holmes 2011

Results

- At the end of the 11–month project, KWMC provided the City Council with evidence of the damp problem in the community and proposed new measures to improve the situation, including changes to the licensing of private landlords.[61]

- During the project, over 700 people aged 18-30 were engaged in over 45 events and workshops.

- Learnings from the Dampbusters project shaped the development of a second pilot in east Bristol as part of the REPLICATE project. Here KWMC supported groups concerned about air quality in their area to develop and test a range of sensors and interpret the data collected.[62]

- The Bristol Approach was presented at the House of Lords as an example of good practice of citizen engagement in the UK.
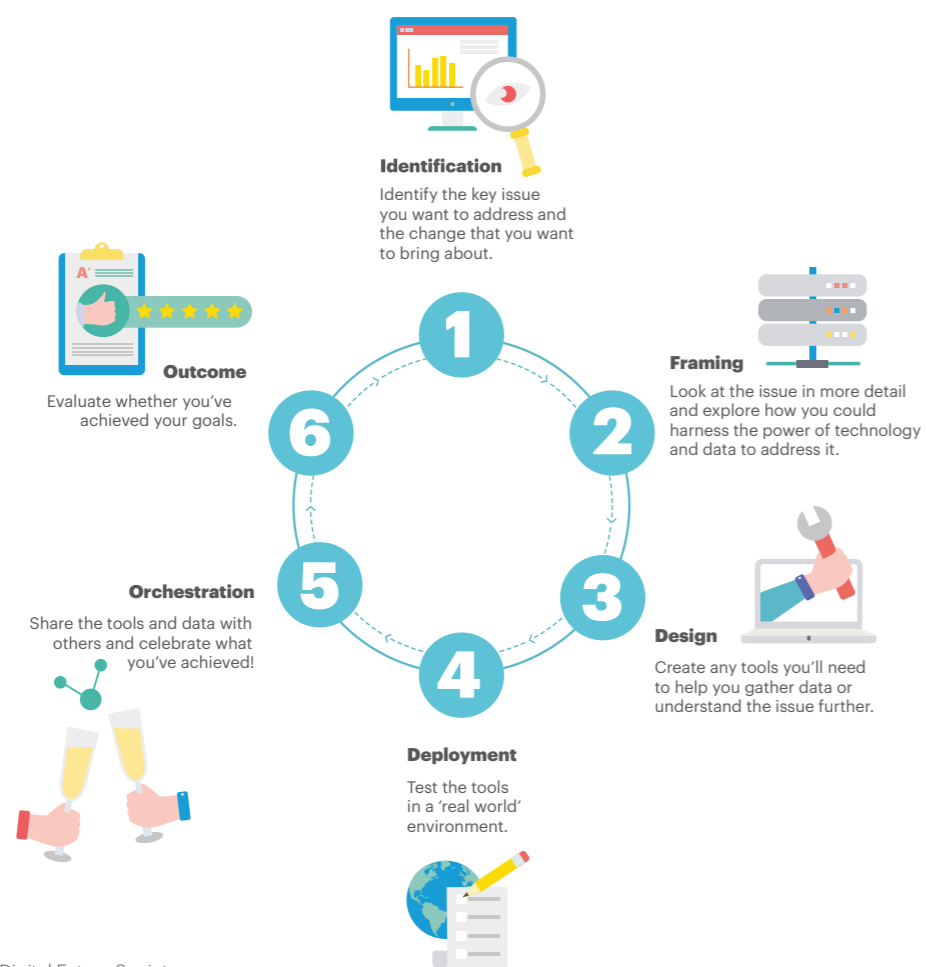

Identification
Identify the key issue you want to address and the change that you want to bring about.

Framing
Look at the issue in more detail and explore how you could harness the power of technology and data to address it.

Design
Create any tools you'll need to help you gather data or understand the issue further.

Deployment
Test the tools in a 'real world' environment.

Orchestration
Share the tools and data with others and celebrate what you've achieved!

Outcome
Evaluate whether you've achieved your goals.

Image source: Digital Future Society

- All data and technology used in the Bristol Approach is open-source and the framework can be implemented iteratively to address different needs. So far, it has been used to explore solutions to food waste and poor air quality in Bristol, as well as how to diversify mental health services. In Barcelona, it has been used to tackle noise levels and air quality through the Making Sense project, which builds on the Bristol Approach framework.

- The Bristol Approach not only helps citizens and local authorities address and resolve specific problems, it also provides communities and public agencies with a wealth of data which they can use to better inform local public policies and decisions.

- The framework has proved to be a successful communication device, "providing a common language for engaging citizens to participate in technology innovation for the common good."[63] It also provided an empowering narrative and common vision around which citizens could unite.

Key takeaways

- Thanks to its flexible procurement processes, Bristol City Council was able to grant the necessary funds to the relevant organisation, KWMC, to develop the framework. KWMC then worked collaboratively with citizens, community organisations, artists and tech companies. Flexible public procurement processes are key for the development of a healthy GovTech ecosystem.

- At the heart of the framework is the idea of a city commons: a pool of community-managed resources, such as data, technology, skills, knowledge and social relations.[64] The social issues explored in the identification phase and which do not make it through to the next stage are placed in an open access repository and can be used by other interested parties at a later date.

- Citizens understanding, collecting and analyzing their own data is a powerful way of engaging citizens and fostering citizen participation.

[61] Balestrini et al. 2017

[62] Banks Gross n.d.

[63] Balestrini et al. 2017

[64] Ibid

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Opportunities and challenges

Leveraging benefits while overcoming obstacles

GovTech offers governments new opportunities in their engagement with citizens through the use of tech-based citizen participation tools. However, the consolidation of a new ecosystem and the development of new tools and practices can also bring new challenges. Some are related to the difficulties encountered by new private sector stakeholders upon entering the public sector marketplace. Others show that when it comes to improving citizen participation, technology in itself is not enough.

Opportunities

Foster democratic culture, trust and accountability

GovTech has the potential to strengthen government openness and collaboration, two values that have gained importance with the rise of Web 2.0 in the last decade. At the same time, the use of digital participatory tools such as FixMyStreet and I Change My City can increase trust in governments while improving the transparency, accountability, and legitimacy of public policies and services.

As former President Obama explained during his 2009 campaign: "We must use all available technologies and methods to open up the federal government, creating a new level of transparency to change the way business is conducted in Washington, and giving Americans the chance to participate in government deliberations and decision making in ways that were not possible only a few years ago."[65]

Tools like Evidence Checks UK, an online platform used by the British parliament where selected groups of citizens are invited to scrutinise evidence used to inform government policy, to assess its strength and highlight possible gaps,[66] offer opportunities for passing legislation with higher levels of legitimacy.

[65] O'Reilly 2010

[66] nesta n.d.

For Fotis Talantzis, founder of citizen participation startup Novoville, the collective intelligence found in communities holds untapped potential. Talantzis highlights the knock-on effect of citizens engaging with their local agencies:

"Local governments are the 'front-end' of politics. Transparency, openness and participatory decision-making are key factors in understanding local politics and how these affect our daily lives. Most importantly, they shape our perception of central politics as well. If a council takes an action that improves our neighbourhood, we typically interpret it positively for politics as a whole."[67]

Technology-based participatory tools can facilitate participation at scale by overcoming geographical barriers. Decide Madrid has almost half a million users. Within three weeks, over 20,000 people had participated in Chile's nation-wide consultation to decide on which of the government's administrative procedures should be digitalised. At the time of writing, the FixMyStreet platform in the UK received 8,736 reports in a single week.[68] This enables citizens to get involved in political life beyond voting every four years and nurtures the public decision-making process on a regular basis.

Replicability and scalability

As illustrated by the Decide Madrid and The Bristol Approach case studies, technology, open data and open source software allow for participatory tools to be replicated across different cities and states.

Consul has been deployed in more than 130 cities in 35 countries. Buenos Aires, one of the most active cities, has used the platform for participatory budgeting and received over 25,000 proposals in 2018. On a national level, the Colombian government adopted Consul to develop a National Plan for Development and the Uruguayan government has used it to define a new Open Government Plan.

Beyond city policy, the Madrid City Council is using Consul to crowdsource ideas for international development projects. Currently, the city is using Consul to incorporate citizens' proposals into a project that aims to bring drinking water to parts of Praia, Cape Verde. Madrid City Council is also supporting the use of Consul to improve governance in Dakar, Senegal.

Improved public services, increased efficiency and reduced costs

Engaging different stakeholders of the GovTech sector and using participatory tools can also help governments become more responsive to citizens' needs and improve their public services, policies, decisions and legislation.

Bristol City Council and other local authorities can now take informed decisions on how to tackle the problem of damp in homes based on the evidence collected through the Dampbusters pilot project.

Seeclickfix is a mobile application used in over 50 American cities which allows citizens to report non-emergency problems such as faulty street lights and potholes. Almost five million issues have been reported and fixed.[69] Local authorities can use the data to research what issues are reported most often, where they are most frequently located and how much time is used to resolve them. This data can in turn inform funding allocation and planning decisions.[70]

Economic growth

The emerging field of GovTech offers new opportunities for economic growth with new actors such as startups and small businesses entering the market.

While it is difficult to pinpoint funding spent on GovTech-driven citizen participation projects, the level of public expenditure on technology provides an indication of the size of the IT public procurement market as a whole. The US government spent 425 billion USD on IT in 2015, a figure surpassed only by banking and manufacturing.[71]

In addition, public sector tech innovations generate important savings. In Denmark, for example, electronic invoicing saves taxpayers 150 million EUR and businesses 50 million EUR a year. If introduced across the EU, annual savings could exceed 50 billion EUR. In Italy alone, e-procurement systems cut over 3 billion EUR in costs.[72]

The impact of GovTech on economic growth has been highlighted by the World Bank and the UN through studies on government effectiveness and e-government development. The effectiveness of a government is linked to the development of its digital services. The countries which rank the highest on the UN's e-government index are also the ones that score highest on the World Bank's effectiveness index.[73] The development of a government's technological capacities has an impact on both the delivery of public services and on the credibility and citizens perception of the quality of said services.[74]

[67] PUBLIC 2017

[68] FixMyStreet 2019

[69] SeeClickFix 2019

[70] Shively 2019

[71] Welsh 2018

[72] European Commission 2018

[73] Data Catalog 2018

[74] UN E-Government Knowledgebase 2018

Create new roles: government as platform

New actors entering the GovTech ecosystem and creating new relationships offers governments the chance to redefine themselves as platforms, establish new standards, including open data and open source, and adapt democratic values and principles to the digital era. GovTech opens new opportunities for governments to evolve from "client" to "enabler", "skilled procurer" and "project overseer".[75]

Secondly, although governments cannot be expected to function like a startup, the GovTech approach - working with startups and small innovative enterprises - can offer public administrations the opportunity to innovate using startup methodologies such as human-centered design, agile iteration, and the use of data-driven metrics.[76]

Challenges

Having clear objectives and establishing the point in the policymaking process where government chooses to involve citizens is crucial. Deciding who to involve and what approach to use is an essential step in both digital and analogue participation initiatives. Is it best to open the process up to all citizens or invite a selected few? How will those citizens be reached? And what to do with all the information collected? These are some of the difficult questions policymakers face when inviting citizens to participate in the policymaking process.

Likewise, startups and small companies wishing to compete with the larger players in the development of tech tools such as citizen participation platforms face significant obstacles which must be addressed before a vibrant GovTech sector can exist.

Defining success: quality vs. quantity

There are lots of questions around what governments are trying to achieve with participatory platforms, and how they are going to do it. Participation initiatives have often focused too much on collecting a high volume of opinions and not enough on processing and acting on the information collected.[77]

The aforementioned UK Parliament Select Committee Evidence Checks invites citizens to scrutinise evidence which underpins government policy in specific areas (written submissions are published on a web forum). The team has experienced a dual risk of receiving too little engagement or advertising too broadly and receiving a large number of low-quality contributions.[78] The current practice to invite selected individuals to participate is based on evidence that the process works best when the issue is narrowly defined.

In the case of Decide Madrid, only two citizen proposals have passed the 1% threshold of support needed to reach the final stages of implementation by the City Council.[79] Analysis suggests this is due in part to the fact that citizens' support is spread across hundreds of petitions on the same topic, instead of being concentrated on one petition. Another problem is connected to the way in which the information is ranked and filtered. The interface is a paginated list of petitions which applies a non-optimal ranking algorithm. So although the website allows users to search for petitions matching the word "basuras" (trash), "they would then have to scroll through a dozen pages to find proposals of interest among the 273 existing petitions."[80]

As seen in the case study on The Bristol Approach, citizens might agree on defining the problem, but are likely to disagree on the best solution. The success of the Bristol Approach lies in involving citizens from the start in the problem identification and definition. Citizens are then able to understand the complexity of the problems which affect them. Similar experiences demonstrate how citizens' lack of involvement and understanding of the complexity of some problems can lead to frustration and unrealistic expectations of what the government can do to solve them. On the other hand, involving citizens in-depth takes time and is challenging when public budgets risk changing with transitions of political leadership.

Encouraging participation

One of the biggest challenges faced by governments implementing participatory tech-based tools is how to encourage citizens to participate in the first place; the mere existence of a digital tool is not sufficient. As the Decide Madrid team found, a significant amount of time and effort is needed to encourage citizens to join the platform and eventually change the culture around participation so that voting goes beyond something that happens every four years in general elections (such as in Spain) and becomes part of everyday life (such as in Switzerland, where citizens are used to voting on multiple issues on a regular basis).

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[75] Filer 2019

[76] Brantley 2015

[77] Noveck 2018; Alsina and Martí 2018

[78] nesta

[79] This threshold only applies to citizen proposals. Participatory budgeting, citizen voting and collaborative legislation employ different methodologies.

[80] Aragón et al. 2018

Ensuring inclusion

Citizen participation tools have the potential to improve democratic processes, foster democratic values and increase inclusion. Done badly, citizen participation runs the risk of alienating the very people one is hoping to engage (through for instance, a lack of feedback or acknowledgement of their input) and increasing mistrust in governments by excluding majorities who are silenced by vocal minorities.

Another challenge lies in including citizens lacking internet access or digital skills. While the Decide Madrid platform allows for the possibility of receiving paper votes by post or in person, the Ideas! portal in Singapore does not. This is likely related to disparities in internet penetration; 93% of Singaporeans use the internet every day.[81]

When it comes to citizen sensing, research shows that people often lack the skills required to operate sensing technologies and struggle to make sense of data. Managing and funding training can be a source of tension.[82]

In the case of tools where the success of a proposal passing depends solely on the number of votes, there is a risk of certain interest groups dominating the process. Some small or powerful groups could outbalance individual citizens or disadvantaged collectives, generating increased isolation, exclusion and inequality. For example, in 2017, members of a rugby club put forward a proposal on the Decide Madrid platform for the construction of a rugby stadium. During the voting phase, club members joined forces to gather support and garner the most voted proposal in the district. The cost of the stadium's construction costs amounted to the district's total annual budget, meaning no other projects could be executed that year.[83]

In the case of I Change My City, the issue resolution may mirror the ability of certain individuals or groups to garner more votes. For example, "Featured Categories" displays a selection of ten complaints ranked by popularity, which may depend on both the number of complaints made and the number of votes they garner during the vote-up process. Given the current design's reliance on internet and English language, citizens from higher income neighbourhoods are more likely to use the site. Issues of higher concern to low-income neighbourhoods and slums such as spraying insecticides in areas prone to vector borne diseases, cleaning of drains, or primary healthcare facilities rarely make it to the featured category list.

Managing expectations and preventing participation fatigue

A large volume of proposals can bring significant challenges for government agencies, placing them under tremendous pressure to respond to all the proposals and deliver on the information collected. Tracking, monitoring and evaluating proposals is no easy feat and a lack of credibility and visibility of results can result in high levels of frustration.

As authorities in Singapore and Madrid have found in their respective platforms, managing citizens' expectations and ensuring prompt feedback is both an opportunity and a challenge. Executing a proposal such as a bike lane network extension can take two years, which may not seem like a long time considering all the agencies involved and need for a feasibility study. Yet for the authors of the petition it can seem like an eternity, especially without regular feedback or insights into the complexity of their proposal's implementation.[84]

Establishing clear project ownership

Establishing clear project ownership and achieving buy-in from other government departments is key. Working in silos and lack of interoperability can lead to a duplication of efforts across agencies, as was the case of Singapore before it created its Ideas! portal.

Lack of continuity

Citizen participation initiatives often rely on an internal champion, whether in the form of a civil servant, team, or mayor. Four year cycles and changes in political leadership can make it difficult to ensure continuity in the use and development of participatory tools. Furthermore, apart from mass-market voting technologies, when recession hits a small local government or budgets tighten, participatory GovTech tools are probably not going to be a priority, as they are not yet sufficiently embedded.

Risk management

One of the advantages of a tech-based participatory tool is that it allows for mass participation. The associated risk is that it also lends itself to hacking and manipulation on a larger scale, especially when it comes to online voting systems. In the US, a report from the National Academies of Sciences, Engineering, and Medicine recently concluded no internet technology is safe, secure or reliable for voting and called for all local, state, and federal elections to be conducted using human-readable paper ballots by 2020.[85]

Cultural differences

In terms of culture, the public and private sectors can be worlds apart. Inflexible recruitment policies hinder public agencies from attracting public servants with digital intrapreneurial skills. Innovators and technologists often find they do not speak the same language as their public sector counterparts and vice versa. Attracting and retaining tech expertise in the public sector is a real challenge considering the higher salaries and benefits offered by private companies.

Another challenge which cuts across different government departments working with private sector partners in the GovTech ecosystem is that public and private sectors have very different priorities. Startups and small businesses are profit-driven and focus on a niche market. Public sector agencies must cater to all and are under significant budgetary constraints and subjected to scrutiny by the public and other political parties. Startups have trial and failure in their DNA. In contrast, public expectations dictate that governments are not allowed to fail. Expectations from citizens for the government to always "get it right" also exacerbate this fear of failure. Furthermore, the politicisation of participatory tools and initiatives can lead to opposing political parties undermining participatory initiatives, especially when they do not generate immediate results.

Funding and long procurement cycles

Startups developing participatory tools often face the challenge of long procurement cycles, inflexible processes and complex procurement laws. Even in the UK, where the government has gone to great lengths to develop the GovTech ecosystem, recent spend data shows there is still some way to go for startups and SMEs to be a mainstay of government technology suppliers. There are concerns the government might "slip back into the old ways" of legacy contracts with large IT suppliers and not reach the target of 33% spend on SMEs by 2022.[86] One of the key challenges continues to be the long procurement cycles which are difficult for startups to endure.

Furthermore, governments are accountable for the public money they invest, making it difficult for risk-averse public agencies to purchase from startups with uncertain financial longevity. "Despite excitement about the possibility of startups to drive government innovation, it is worth acknowledging how many of them—at least 75% by some estimations— fail (we do not yet have information on the success rate of GovTech startups specifically)."[87]

Scalability of startup products and services

Scalability is a challenge across the GovTech sector. It is no surprise that some of the nations typically renowned for innovation like Israel, Estonia, the United Arab Emirates and Singapore are small in size.[88] Turning a pilot into a scalable solution is often very challenging and governments risk ending up with many pilots but few long-term projects. Small companies may not have the capacity to handle large contracts or projects. Experimentation and transition from one system to another can lead to a disruption of services which can be perceived negatively by citizens and lead to credibility loss.

Ensuring accountability

It is difficult for governments to ensure accountability when technological solutions are outsourced to private sector companies, large or small. A lack of accountability is often associated with large firms but ultimately, if governments do not have the technological capacity to provide oversight, then the problem remains when working with startups and SMEs in the GovTech ecosystem.

[86] Hill 2019
[87] Filer 2019

[88] BBVA.com 2018

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Recommendations

A checklist for making progress

When thinking about citizen participation, governments must be clear on what they are trying to achieve. Beyond the aim of meaningfully involving more citizens in decision-making processes, is there an ambition to work with new technology vendors and bring in different actors? If so, GovTech provides a promising way forward.

Collaborating with startups to develop new participatory tools while simultaneously stimulating the GovTech sector might be an option for some governments. In others, especially where GovTech remains an untested concept, some preliminary steps must be taken first. While not exhaustive, the following checklist is intended to help policymakers take action towards leveraging GovTech for citizen participation.

1. Stimulate the GovTech sector

In many places, GovTech is still in its infancy with disconnected initiatives scattered across different sectors. There are no government frameworks which recognise and support the needs of startups and SMEs in their interaction with the public sector. Many of the new technology-based tools and solutions generated by GovTech startups are not identified as such.

To create the conditions for a vibrant GovTech sector, policymakers can:

- **Set up a dedicated GovTech program or agency** as a reference point for all public sector levels (state, regional and local), private initiatives, startups and other actors in the GovTech ecosystem. Poland, for example, has such a programme, GovTech Polska, which aims "to improve the dialogue between public administration and innovators: SME entrepreneurs, startups, and the scientific community. All those who, together with us, want to find the most innovative and effective solutions to the real challenges of public administration."[89]

- **Create specialised investment funds and tax incentives** for investments in GovTech solutions development.

- **Establish procurement frameworks** that allow all government levels to pilot and experiment with new solutions. Two useful examples are the UK GovTech Catalyst Scheme[90] and the GovTech competition in Portugal.[91]

- **Taking inspiration from the fintech sector, establish GovTech-specific regulatory sandboxes** to allow GovTech solutions to be tested safely.[92]

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[89] SeeClickFix 2019

[90] GOV.UK 2019

[91] Govtech.gov.pt 2019

[92] See Appendix I

- **Set GovTech quality standards according to the technology readiness level (TRL) of each technology.** When implementing digital solutions, civil servants, like corporations, need tools to make the right decisions. GovTech standards can strengthen government accountability in their digital relationships with citizens.[93]

- **Establish more flexible procurement processes for GovTech.** To promote a thriving ecosystem, public administration could adopt several of the following recommendations:

  - **Launch pre-commercial procurement initiatives** for GovTech based on defined challenges. A process similar to that of One GovTech Catalyst UK[94] allows multiple suppliers to develop and refine solutions in several stages, reducing risks and overall costs.

  - **Simplify procurement processes to attract SMEs and innovative companies** that usually avoid complex and bureaucratic processes. Both the UK and Canada have recently simplified their procurement processes for said purpose.[95]

  - **Explore new ways to procure on-demand digital assets, that allow more flexible delivery methods and can be billed per-use**. An example would be the UK's Digital Marketplace.[96]

  - **Instill open procurement processes that require the exploration of a problem instead of the purchase of a predefined solution**. In Norway, StimuLab supports state and municipal agencies in the early phase of development work and offers interdisciplinary guidance and financial resources for innovative development projects.[97]

- **Establish citizen-centric GovTech accelerators**, bringing together civil servants and citizens to prototype solutions that can be replicated and scaled. Prototypes could become startups, SMEs or NGOs, with mentoring and investment services offered by the government.

2. Build capacity within public administration

Public servants with a sufficient level of technological understanding are needed to ensure government agencies are purchasing and regulating in an accountable and responsible way and that the data produced by new citizen participation tools is managed efficiently and ethically.

Policymakers can take the following actions to nurture innovative skill-building in the public sector:

- **Make recruitment processes more flexible, adapt professional frameworks to attract tech, digital, innovation and citizen participation professionals** into the public sector. For instance, the Scottish Government has recently introduced a new professional framework that recognises seven design roles to ensure its public servants have the skills needed to work in new ways.[98]

- **Build internal capability to develop digital solutions** from within the government and encourage experimentation.

  - Promote government accelerators where civil servants' can explore, define and develop tech-based solutions.

  - Include entrepreneurship and new digital profiles into the training offered for civil servants. Initiatives like CivTech Academy in Scotland contribute to new skill development for public workers.

- **Build staff capacity in managing and using data** sourced from participatory GovTech initiatives.

  - Run dedicated programmes to support all levels of civil servants understanding why data and digital service design is important for governments. In the UK, the government is recruiting analysts and data scientists and training senior civil service leaders and policymakers so they are more informed and confident data customers.[99]

  - Encourage multidisciplinary teams that bring together public sector professionals with the new digital based professions found in other sectors.

- **Build internal capabilities in speculative design and futures visioning** to inform public policies in a proactive way. The EU Policy Lab for example explores long-term futures and creates shared visions for policymaking.

- **Recognise public innovators within government** and support them to support and teach other public servants.

3. Build a national participatory GovTech strategy

Working in silos and a lack of interoperability can lead to a duplication of efforts across agencies, as was the case of Singapore before it created its Ideas! Portal.

The following steps can be taken to create a robust participatory GovTech strategy:

- **Publish guidelines and toolkits for government managers to build better services through public participation**, whether they are digital or analogue. These resources can be co-created by public servants and citizens, such as the U.S. Public Participation Playbook.[100]

- **Create a legal and administrative framework** to grant existing citizen participation tools and mechanisms continuity beyond political changes. An example is Brazil's National System of Social Participation.[101]

- **Include digital participation in wider digital governance strategies**. For instance, the third axis of the Digital Governance Strategy of Brazil is about social participation.[102]

- **Enhance cross-departmental coordination** by creating a GovTech and citizen engagement council, specialised units in Ministries, or coordination units.

93 Filer 2019
94 GOV.UK 2019
95 Treasury Board of Canada Secretariat 2017
96 Digitalmarketplace.service.gov.uk 2019
97 Difi.no 2019
98 Lyne 2019
99 Duhaney 2018
100 Participation.usa.gov
101 Participedia.net 2017
102 Estratégia de Governança Digital 2018

- **Establish a product development framework:**

  - Approach participatory GovTech solutions as a product development project where the investment in go-to-market activities (outreach and PR) is as important as technology development.

  - Include open code requirements for technological solutions to avoid dependencies or inefficiencies in the use of public resources.

  - Include a clear policy of data sovereignty and privacy as part of the quality standards for GovTech solutions.

  - Design and request solutions with a sense of scale in mind, where centralised solutions respond to local needs and vice versa.

  - Include a standard for feedback loops as a service level agreement (SLA) for digital services that increases service quality and consistency across digital government.

  - Develop standard metrics and key performance indicators for project impact and evaluation.

- **Standardise processes and methodologies across the GovTech ecosystem**. Experts do not recommend aiming for a single standard, however formalising processes can help potential partners better understand and participate in the ecosystem. Examples include San Francisco Startup in Residence (STIR),[103] CivTech in Scotland[104] or GovTech partnerships in Singapore.[105]

- **Promote or mandate the use of open standards for technology and open licenses for content.** A pioneering example is the Barcelona City Council ICT Public Procurement Guide.[106]

4. Encourage citizen participation and foster communities of practice

No single organisation, government department or individual champion is able to solve the challenges they face alone. Fostering an ecosystem of GovTech innovators requires a specific focus on citizen participation, within and beyond public institutions. Such ambition needs a shared vision, a clear mission and intention, a shared language, collective intelligence and action.

To encourage citizen participation, policymakers can:

- **Create a national participation platform** with all online participation initiatives available across the country at national and local levels. This includes creating a national committee of experts from different sectors, clear participation paths, tracking systems, and a body that can channel, process and respond to the proposals made. For example, the ChileAtiende site[107] could be adapted to go beyond offering information on government services to include all participation initiatives across the country.

- **Draw on altruism found in communities and, in collaboration with citizens, develop a Right to Contribute protocol based on urban commons and open data principles.** The Digital Rights Charter in Barcelona[108], the Bristol Approach framework, and the Co-Cities Protocol[109] are useful references.

- **Include offline options in tech-based participation initiatives** to ensure inclusion, such as in the Decide Madrid example of paper-based participation.

To foster communities of practice, policymakers can:

- **Build inspiring narratives and specific stories and case studies.** Each country, region and city will need to find its own inspiring local narrative built upon local history, characters, projects and specific challenges. The narratives built around Code For America[110] (shared purpose, serve the country, startup mindset, etc.), Decidim Barcelona[111] (collective intelligence, technological sovereignty, commons, etc.) or vTaiwan[112] (prototyping, quintuple helix, Audrey Tang, etc.) offer instructive examples.

- **Gather best practices and learnings:**

  - **Create a reference catalogue of GovTech participation processes success cases.** Success stories should be provided in a format from which others can easily draw inspiration. For instance, ImpactOn[113] supports the scaling of successful social innovation initiatives.

  - **Acknowledge failure as part of the learning process.** Draw inspiration from Project for Public Spaces and use humour to raise awareness and learn from failed projects.[114] Annual contests where governments and citizens propose "what went wrong" can itself serve as a participatory process.

- **Foster continuous knowledge exchange and trust-building among ecosystem participants.**

  - **Facilitate person-to-person interactions and the emergence of shared physical "third spaces"** such as Public Hall[115] GovTech workspace in London and Civic Hall[116] in New York City, or through shared digital spaces such as Facebook groups, Telegram channels, Slack channels, moodles, wikis, or Meetup groups like Civic Tech Toronto.[117]

  - **Foster a culture for permanent knowledge exchange,** collective knowledge building and collective learning. In order to facilitate adoption of these more informal knowledge-related practices, create a formal recognition system such as Mozilla Open Badges[118] or NHS participatory programmes.[119]

103 STIR 2017

104 CivTech®, 2019

105 GovTech Singapore 2019

106 Barcelona City Council ICT Public Procurement Guide 2017

107 Chileatiende.gob.cl

108 Digitalrightsbarcelona.org 2019

109 The Co-Cities Protocol 2019

110 Code for America 2019

111 Decidim.barcelona

112 Info.vtaiwan.tw

113 Impacton.org 2019

114 Project for Public Spaces 2018

115 Smart Cities World 2019

116 Civic Hall 2019

117 Civic Tech Toronto 2019

118 Openbadges.org 2016

119 Openbadgeacademy.com

Conclusion

GovTech presents a number of opportunities for governments around the world prioritising public innovation and seeking novel ways to engage citizens. Nurturing a GovTech ecosystem can lead to economic growth, improve public services, increase efficiency and reduce costs. A thriving GovTech ecosystem can also help government agencies move away from working with traditional large IT suppliers and bring in new stakeholders such as startups, small companies, entrepreneurs, academics and local communities.

Interacting with new actors such as startups can encourage innovation within the public sector and foster more agile and efficient procurement processes. At the same time, GovTech offers additional opportunities to governments in the area of citizen engagement, potentially increasing citizen participation while strengthening transparency and accountability.

GovTech is still very new and developing at different speeds around the world. While inspiration can be drawn from the initiatives mentioned throughout this report which are taking root in some of the most advanced ecosystems, it is important to acknowledge that GovTech is not the answer to all needs and that each public administration will need to adapt and experiment within its own local reality.

Appendix

Regulatory sandboxes in public innovation

The term "sandbox" refers to the small box used by children to play with sand in a controlled environment. The term was first adopted in 2016 to describe the United Kingdom Financial Conduct Authority (FCA) test environment. The FCA regulatory sandbox enables startups, such as fintechs, to develop new products and services in the market with customers while working hand-in-hand with regulators to adapt rules and standards.

The benefits of regulatory sandboxes were detailed in a 2017 FCA report, which highlighted the reduced time and cost of getting innovative ideas to market.[120] In just 3 years since the launch of the first sandbox in 2016, approximately 80% of the 47 firms that had completed sandbox testing were operating in the market with an additional 63 in the pipeline.[121]

The concept has also scaled across countries and sectors. To date, the FCA has formed partnerships with over 30 international organisations to undertake cross-border testing as part of the Global Financial Innovation Network.[122] The success of the regulatory sandbox in a sector as complex as financial services bodes well for its use across other areas that rely on rules and regulations and the need for consumer protection, such as the energy sector.

In the case of GovTech, experimenting with new technologies in a test environment has several potential advantages. It could alleviate the challenge of potential harm to the public from an untested idea, enable risk-averse public bodies to devote smaller budgets to new ideas on a trial-and-error basis, and allow for the piloting of small contracts rather than relying on large public tenders. It could also foster new ecosystems in which the sandbox teams coordinate with other public teams working in areas relevant for citizen participation, such as data governance, cybersecurity, and public digital infrastructure.

[120] Fca.org.uk 2019
[121] Woolard 2019
[122] Ibid.

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