
NETWORKED GOVERNMENT

The transition to
citizen centricity



In collaboration with the
Government Summit



Oxford
Analytica

About this report



A report in collaboration with the Government Summit

February 2015

This study is intended for the use and assistance of the Government Summit. It should not be regarded as a substitute for the exercise by the recipients of their own judgment. Oxford Analytica Ltd and/or any person connected with it accepts no liability whatsoever for any direct or consequential loss of any kind arising out of the use of this study or any part of its contents.



Oxford Analytica is a global analysis and advisory firm which draws on a worldwide network of experts to advise its clients on their strategy and performance. Our insights and judgements on global issues enable our clients to succeed in complex markets where the nexus of politics and economics, state and business is critical. To learn more about our products and services, visit www.oxan.com

Any reproduction or distribution of this study in whole or in part without the written consent of Oxford Analytica Ltd is strictly forbidden.
© Oxford Analytica 2015

HEAD OFFICE

5 Alfred Street, Oxford OX1 4EH United Kingdom
T +44 1865 261 600

www.oxan.com

2 Executive Summary

3 Organisational

4 Technological

5 New terminology

7 Introduction

8 Networked government

8 Citizen-to-government and business-to-government (“vertical networking”)

10 Current learning and best practices

10 Access

12 Participation

15 Service Delivery

16 Relationship management

16 Policy- to citizen-centric management

18 Transforming government

18 Traditional government: hierarchical structure

18 Future government: networked holacracy

22 Open government data

24 Global uptake of open data

26 The future of networked government

26 Unified data profiles

27 People participation in policy design

29 Redesign of digital services to better account for different user needs

29 Redesign of services for mobile devices

30 Better search services: needle in a haystack

32 Challenges

32 Secure and private integrated personal profiles

33 Ministerial and technocratic opposition

33 Security

35 Policy recommendations

35 Organisational

35 Technological

36 Conclusion

Executive Summary

NETWORK GOVERNMENT

Network government is the transition to a more transparent, cooperative and beneficial relationship between government, citizens and business as a result of technological integration and organisational connectivity. By enabling active stakeholder participation and access, it transforms government services by placing users at the centre of policy design and implementation and service delivery.

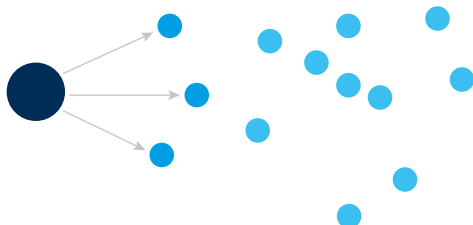
The growing use of the internet in the 1990s led many governments to recognise its potential to broaden and deepen their relationship with citizens, businesses and other key external stakeholders. Implementing the concept of e-government began with the posting on newly launched government websites of a range of basic information such as the location and hours of operation of government offices, but quickly grew to include the sharing of information across government departments.

The rapid evolution of technology and the internet led governments to realise that this represented the mere first phase of e-government and as technology improved so would the capabilities of governments to interact with and service multiple stakeholders. As such, the next phase of e-government, known increasingly as *networked government*, encompasses the complete electronic integration and personalisation of services between government and other stakeholders. This will enable governments to improve policy design and implementation and place users at the centre of service delivery.

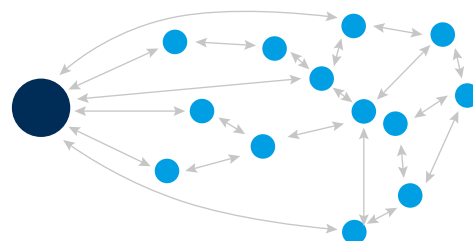
The goal of this thought leadership report is to examine the concept of networked government, identify the characteristics of today's top performers, and explore the future direction and challenges of its successful implementation.

Of critical importance to the effectiveness of networked government is the ability to collect and publicly share multiple forms of data across different channels (e.g. email, SMS, website sites, social media), both through active engagement and unconscious participation, in real-time and at low cost. As such, as networked government evolves, the emphasis on a virtual, non-physical interaction between a government and its stakeholder will serve to further understand user needs and, ultimately, transform the effective formulation of policies.

Traditional government decision-making



Network government decision-making



However, varying degrees of physical access to the internet and disparate citizen capabilities (the “digital divide”) underscore the dangers of elite bias and a fragmented, inequitable delivery of future government services. As such, the successful implementation and operation of networked government solutions depends on:

- **Access.** Having access to technology and understanding how to use it.
- **Participation.** Nurturing engaged citizenry and continuous interaction with providers.
- **Service delivery.** Services in the correct format, delivered via the appropriate platforms.

While technological innovation will be critical to the development of networked government solutions, successful implementation and ongoing delivery will also depend on the levels of policy initiative, infrastructure investment and stakeholder engagement. Leading networked governments are likely to be those that have:

- Personalised and improved usability of online service interaction and delivery;
- Integrated government services into private technological platforms;
- Developed common ICT infrastructure and assimilated multiple service channels into a seamless flow of information; and
- Enabled multi-channel feedback loops and service delivery to ensure universal access and participation.

With these insights in mind, the report makes a number of organisational and technological policy recommendations that will enable governments to more effectively address the critical opportunities and challenges outlined in the report.

ORGANISATIONAL

- As part of the annual review process, hold government staff accountable for user ratings
- Appoint a Chief Technology Officer/Chief Information Officer responsible for overseeing networked government solutions as well as identifying global best practices and benchmarking service delivery metrics
- Update legal and regulatory frameworks to enable greater transactional capabilities
- Establish a clearly defined governance structure for open government data that has been formed in consultation with all key stakeholders, and ensure clear policies for the development of Application Program Interfaces (API) to enable greater software interaction
- Leverage different stakeholder relationships to identify and build solutions to common problems
- Implement government-led lending initiatives – similar to borrowing books from a public library – to increase use of and access to mobile devices
- Develop a scorecard that benchmarks all services and proposed policy initiatives against minimum standards for access, participation and service delivery
- Leading networked governments have already turned most services into digital ones but demand for these services is relatively low. In order to address a dearth of demand, governments need to clarify the reasons for low-engagement levels and modify digital services accordingly

TECHNOLOGICAL

- Ensure the use of deliberative polling and evidenced-base policymaking when designing, implementing and operating public services
- Acquire the internal capabilities necessary to analyse user data and filter out unnecessary “noise”
- Develop service tools that promote active participation in policy design and effectively capture key data points while ensuring user privacy
- Ensure that government services are user-friendly on multiple devices
- Develop common operational terminology across government and improve the searchability of government services

However, as technology and organisational capabilities evolve, it will be incumbent on government to decide when, and how much, to invest in networked government solutions. For those governments that have assiduously evolved their online and digital service capabilities, the progression to networked government will largely seem a sequential one. At the same time, these governments will experience diminishing returns in terms of the investments they make in networked government solutions – with regard to innovation, user engagement and citizen satisfaction.

METHODOLOGY

Oxford Analytica interviewed six thought leaders in the networked government space. This expert panel included academics, technology entrepreneurs and public policy practitioners. Representatives from the United States, Ecuador, Singapore and the Middle East were interviewed.

The Oxford Analytica project team conducted first-round interviews, guided by a questionnaire developed in consultation with leading research and indices on this subject. After analysing the results of these interviews and conducting additional corroborating research, we held a second round of interviews to collect experts’ feedback on our initial findings. Some members of our expert panel were interviewed in both rounds, and others in the first or second round only. Our advisory project team drew on these interviews and additional research to produce the following report. The report was also critiqued by a senior international expert in networked government.

This report does not seek to empirically measure the social, economic or political impact of effective (and ineffective) e-government policies, nor is it a comprehensive survey of best e-government standards. Rather, this report is a synthesis of leading expert thought on these subjects, and attempts to lay out the state of networked government as is currently understood by leading practitioners.

New terminology

Citizen-centric	An approach to government that places the citizen at the centre of policy design and implementation and ongoing service delivery.
E-government	A four-phase approach to the use of technology and communication technologies to streamline processes and promote the improvement of government services.
Holacracy	A portmanteau with origins in the discipline of social technology and organisational governance. It refers to the process of devolving decision-making authority equally between self-contained groups that form units of a larger, integrated system.
Horizontal	A flat organisational structure that has a weakly defined chain of command and employees are likely to perform numerous functions.
Networked Government	The transition to a more transparent, cooperative and beneficial relationship between government, citizens and business as a result of technological integration and organisational connectivity. By enabling active stakeholder participation and access, it transforms government services by placing users at the centre of policy design, implementation and service delivery.
Networked Holacracy	Combines the management ethos of holacracy with the organisational imperatives of networked government to produce an integrated organisational approach that empowers all levels of an organisation with the authority and accountability to make decisions.
Policy-centric	An approach to government that places public services at the centre of policy design and implementation, with funding and objectives segmented along service lines.
Vertical	An organisational structure in which departments act as autonomous units of government and authority is structured hierarchically with power flowing from top to bottom.



The growing use of the internet in the 1990s led many governments to recognise its potential to broaden and deepen their relationship with citizens, businesses and other key external stakeholders. Implementing the concept of e-government began with the posting on newly launched government websites of a range of basic information such as the location and hours of operation of government offices, but quickly grew to include the sharing of information across government departments.

As technology developed, so did the capabilities of governments to interact with and service multiple stakeholders. Looking back, we can now see that the idea of e-government has already gone through four distinct phases:

- **Information phase:** governments electronically display information in the public domain and share information between government departments.
- **Interaction phase:** governments and other stakeholders electronically interact directly with one another. Emails can be sent to and responded to by government, information can be found via search engines, and forms can be downloaded and, in some cases, submitted electronically. Interdepartmental interaction is further reinforced by email and the intranet.
- **Transaction phase:** entire interactions and services can be executed remotely. These can include applying for a passport, renewing a visa, voting and filing taxes. However, security remains a significant obstacle for electronic service delivery and transactional services tend to be limited to internet enabled laptops and desktops. Within government, electronic procurement, designed to increase the transparency and efficiency of the procurement process, is becoming more common.
- **Transformation phase:** the complete electronic integration and personalisation of services between government and other stakeholders. There is a single point of contact for all government services and transactions can be completed on multiple platforms. At the government level, electronic integration and interaction enables substantial improvements in public policy design, with significant changes in the way governments are structured and operate.

This report will emphasize best practices; the present understanding as well as the future, with particular attention paid to the “transformation phase” – the fourth phase in the evolution of e-government. This phase, which is characterised by technological integration and organisational connectivity, is increasingly referred to as *networked government*.

Networked government

Networked government, the process of connecting various stakeholders, creates the possibility of a multiplicity of interactions: government-to-government, citizen-to-government, citizen-to-business, government-to-business, citizen-to-government-to-business. The potential for multi-stakeholder connectivity and instant feedback loops (in the form of real-time processing of stakeholder participation) has highlighted the potential for governments and citizens to harness technology to improve policy design and implementation via greater access, personalised participation and more diverse service delivery channels.

CITIZEN-TO-GOVERNMENT AND BUSINESS-TO-GOVERNMENT (“VERTICAL NETWORKING”)

Governments have traditionally limited service delivery to physical channels (e.g. paying a fine or obtaining a passport in person) and the availability of government information to formal requests for information or physical, time inhibited points of access. Digital access, on the other hand, often makes non-physical and 24-hour access possible for anyone with an internet connection.

The information phase (first phase) of e-government, allowed citizens and businesses to obtain government information without visiting or contacting a government office. Any form of interaction was limited to physical channels. From a government perspective, this meant that the needs of citizens could only be assessed through physical interaction with governments or businesses. This is both costly and ineffective, with many people being reluctant to participate in government surveys and the multitude of front-line government staff observations being difficult to capture. The limited understanding of the needs and interests of citizens undermined the effectiveness of policy design, implementation and on-going service delivery.

Networked government aims to both bridge and broaden the interaction between governments and external stakeholders. Innovation in technology and improved internet connectivity mean that a government can use the internet as its primary form of data dissemination,

transaction and service delivery, thus effectuating a stakeholder-feedback loop. Of critical importance to the effectiveness of networked government is the ability to collect and publicly share multiple forms of data across different channels (e.g. email, SMS, website sites, social media), both through active engagement and unconscious participation, in real-time and at low cost. As we progress further along the transaction and transformational phases of e-government, the emphasis on a virtual, non-physical interaction between a government and other stakeholders will foster further understanding of user needs and, ultimately, transform the effective formulation of policies.

The collection of data and the possibility of distributing it publicly (“open data”) can be compared to Apple opening access to its iPhone operating platform. Providing free and full access led to a burgeoning industry of user-driven app development. Open data offers governments a similar opportunity: by improving data dissemination and developing transactional service platforms, citizens can engage with government in a more varied and increasingly personalised manner. In the case of Dubai, initial steps taken towards the provision of open-source data have led to the development of smartphone apps that enable citizens to submit feedback and complaints, make payments, search for government services and access location maps of more than 1,600 important service providers in Dubai.

CASE STUDIES

What are top performers doing to enhance their networked government capabilities and service offerings?

In the case studies throughout this paper, we examine several initiatives in New Zealand, Singapore and Finland. These countries rank in the top 10 in the 2014 UN E-Government Survey. Additionally, in one case study we investigate several public initiatives that seek to engage citizens through their smartphones.

Although each country has pursued a different strategy to promote networked government, there are broad drivers, beyond technological innovations, that underpin these initiatives. These are:

- The increasing usefulness of open data as a means to contextualise and improve government operations;
- The growing ability to enhance private sector productivity through engagement with the public sector;
- The need to bridge the digital divide through updating and enhancing how government interacts with citizens; and
- The reduced costs associated with an iterative networked government strategy, which seeks to continuously improve interconnectedness through periodic user testing and feedback from citizens.

Most governments are structured hierarchically with authority flowing vertically – from the head of government to policy administrators to front-line staff – and departmentally, meaning civil servants are relatively specialised and their roles and responsibilities are compartmentalised. As such, government departments (e.g. health, defence and revenues and customs) tend to operate as fairly isolated units with little occasion or incentive for interdepartmental collaboration, knowledge or shared services.

Digital sharing and the evolution of cloud computing offer an unparalleled opportunity for government departments to, among other things, increase transparency, develop policies collaboratively, reduce waste and improve procurement. In pursuing a more collaborative approach, governments will ultimately be able to offer services more seamlessly.

Current learning and best practices

There is an on-going debate within the public sector about how best to implement networked government. Given the varying degrees of physical access to the internet and capabilities of citizens and government workers to use technology, of particular concern is the potential for an exclusive, disjointed service-delivery model.

Three elements need to be addressed to ensure an effective networked government for all. These can be considered the three pillars of networked government.

- Access;
- Participation; and
- Service Delivery.

ACCESS

Service delivery is driven by physical access to technology and the ability to effectively use technology. High-quality networked governments therefore must expend maximum efforts to ensure “universal access”: that all citizens are online and have access to technology. Universal access is predicated on IT infrastructure, and governments must therefore first invest in the likes of high-speed national broadband networks. Universal access is linked to a citizen’s ability to pay – as a result, countries with high per-capita incomes are likely to be more successful – and also a state’s regulatory structure and policy priorities, which are responsible for stimulating private investment.

One measure for the success of a networked government is the percentage of the population using the internet. Norway, which boasts 96% internet use; the United Arab Emirates, with 93%; and South Korea, with 92%, lead the way. These countries have both the public and private resources to invest in infrastructure and to maintain connectivity.

Within countries, those with limited economic means face a number of barriers to access and participation including: poor-quality connectivity, no or limited access to a device, and low levels of literacy and training. According to the 2014 Networked Government Survey, “18 European countries found that low income was the single most important barrier to acquiring

basic technology, with a higher income household four times more likely to have access to a computer and the internet than a low-income one.”

Universal access lies at the core of networked government and the “digital divide” – the gap in access and participation between states and within states – mandates policy interventions. Successful networked governments have generally recognised that the best way to address the digital divide is to extract and update public policies used in the 20th century to address social inequality and encourage economic participation.

Leading networked governments all have clearly defined digital e-inclusion strategies. Crucially, these strategies are both service and user directed. As such, leading networked governments have two primary objectives:

- Support infrastructure investment and lower connectivity costs
- Develop digital initiatives that address user needs and promote online e-inclusion

With respect to infrastructure, leading governments are taking different approaches on whether public or private investment is required. In Australia the government, via the National Broadband Network initiative, is playing a leading role in upgrading the existing fixed line and internet-network infrastructure; while in the

United States, in addition to public funding, actions by the Federal Communication Commission to increase data transparency are encouraging private organisations such as Education Superhighway to improve accountability and lower connectivity costs, with the goal of having high-speed broadband and Wi-Fi in all schools in the U.S.

In terms of e-inclusion, government departments have committed to ensuring a basic level of digital skill among staff. In the UK, for example, all staff must meet Level 7 on the Digital inclusion scale. This enables staff to:

- Do their job more effectively
- Understand, help and manage citizen/customer enquiries
- Improve online government services

On the policy side, leading networked governments are continuously addressing training, content and language barriers among vulnerable groups – the poor, disabled, elderly and immigrants. The 2014 UN E-Government Survey reveals that “the proportion of key online services for persons with disabilities, old persons, women and youth were far more readily available among high income countries” than countries with lower income. Singapore, a high-income country and a leading networked government, makes 86% of its online information or services available to disadvantaged or vulnerable groups, which compares to 36% for Indonesia and 29% for Thailand. In the U.S., the government has a dedicated and actively monitored online portal disability.gov, which is designed to provide comparable information and data to individuals with and without disabilities.

Education, literacy and e-inclusion are fundamentally linked. Those states that rank the highest in the UN’s e-government survey have in common a relatively well-educated population and curricula that require the regular use of computers and other technologies, ensuring technological and information literacy from a young age. According to the OECD, education and being a student are the two factors that correlate most with high levels of internet use.

With respect to language, leading networked governments have recognised the need for national portals to be accessible in more than one language, with immigrant populations particularly vulnerable to digital exclusion if they do not speak the national language of the host state. Multi-lingual government portals can be found all over Europe, where high levels of migration have ensured that digital points of access are made accessible to numerous lingual communities. The UK’s gov.uk online portal, which was launched relatively recently to centralise all government services is a notable exception with English the only language that is currently available.

EXPERT VIEW

Matthew Carpenter-Arevalo

CEO and Co-Founder, Centrico Digital and former World Economic Forum Global Leadership Fellow

How can the “digital divide” between various groups in society be bridged?

It’s interesting because, on the one hand, inequality – a major factor that contributes to the digital divide - seems necessary for the formation of networked government because the wealthy are typically the first to demand online service delivery and increased participation in policymaking. Take Monterrey, Mexico, for example. It has some of the best e-government services found in any major city and is a comparatively unequal society. Therefore, the question is: How can you use this demand to deliver better services to lower-income individuals?

OK, How can you use demand to deliver better services to lower-income individuals?

First, identify the services that all people need and determine how to deliver them on as many platforms as possible. If there’s an app for an iPhone because wealthy citizens demanded an app, there is a good chance that everyone else could benefit from an SMS-based equivalent. If there is an SMS-based equivalent, ensure there remains (or create) a non-digital way to interact and receive information. For many, online services are a natural way to engage with the government and do business; for others, it may not be.

What should the future look like for networked government initiatives?

While there is obviously a lot of disparity across the world, there has been enough work done that governments ought to begin to identify best practises and then focus on converging their offerings to develop a more uniform experience. For example, New York City is one of the first cities to have a Chief Technology Officer. This CTO will help to set the standard for New York as well as many other municipalities, but the first step is identifying the best practises and then developing communities that address those practises. Without consultation with global best practises, solutions developed by the government to enhance citizen-centric policymaking run the risk of being unnecessarily complex or ill-suited.

PARTICIPATION

Online use of networked government services remains a global challenge, with networked government usage averaging a mere 46% in the European Union. Retention is an additional concern, with 60% of e-service users likely to drop out after their first experience. While this is in part

explained by the periodic way and limited extent to which most people need to exploit government services – only visiting the hospital when in need, long intervals between passport renewals etc. – it is also likely to be driven by dimensions of the digital divide such as socio-economic

vulnerability, a lack of technical awareness, or limited ability to use government services online.

With online usage unequally distributed between different groups, increasing networked government services therefore must go hand-in-hand with effective policy design and demand-side management to ensure that:

- services offered are those that are needed
- service delivery is provided in the most user-friendly and accessible manner

For instance, while it may now be possible to request unemployment benefits or search for a job online, being unemployed is the leading reason for no longer using the internet. According to the OECD the odds that a European citizen has not used the internet in the past three months are about two times higher if he is unemployed. The reverse is also true, with some groups being highly e-literate but being un-catered for in terms of government services.

Such examples underscore a clear usage quandary: **those most likely to lack internet connectivity and e-literacy are those that are most reliant on government services and most likely to benefit from online services.**

Where digital government is the default service option, leading networked governments have sought to address the usage challenge by developing programmes targeted at those who lack connectivity. In the UK, the government has a dedicated Assisted Digital Team designed to ensure that the 18% of UK adults who are not online can get the support they need to use digital services. Provided by the private, voluntary and public sectors, the service guides users through the relevant digital service or acts on the users behalf.

There are also initiatives designed to improve usability as a means of stimulating demand for online services, such as improving a government website’s search functions as well as creating a central user interface from which to navigate. This ensures consistency in how networked government services are presented and utilised, and ultimately increases user comfort with and knowledge of other networked government services. This is a similar approach to the private sector. For example, eBay Inc. has a central website from which to interact with its range of service offerings and a common means of payment regardless of the product. Gov.uk of the UK and eCitizen.gov.sg of Singapore are similarly integrative and both have prominent search engine bars. In fact, eCitizen.gov.sg centres users around a powerful Microsoft “Bing-esque” looking autocomplete search engine, which from a user perspective is both comforting in the sense of understanding how it must work and easy to navigate.

Social media has also become a powerful communicative tool among leading networked governments. It serves three primary objectives:

- Design: to gather data and user feedback to understand service failings and needs, and to subsequently improve policy design, implementation and interaction
- Pull marketing: to drive citizen awareness of a government’s online presence and service offering
- Alignment: to provide information in the way that many people prefer to consume it

New York City, which has its own Chief Digital Officer, has media streams on Facebook, Foursquare, Tumblr and Twitter that are dedicated to providing advice and information on government services. In the near-future, successful exploitation of popular consumer technologies will be an increasingly important ingredient for networked government success.

CASE STUDY: FINLAND

Enhancing citizen participation and public sector connectedness through user experience testing and design

Over 80% of Finnish citizens use online services to interact with and inform policy in the public sector. This adoption rate represents, in many respects, ‘full-spectrum’ citizen-centrism and is rooted in a strong tradition of open, participatory government: concepts of citizen-centric policy design are found throughout the Finnish Constitution, the Local Government Act and other legislation as far back as the early post-war period. Additionally, Finnish citizens are typically very receptive to change and modernisation, making innovation in governance more readily adopted by the public.

To sustain its robust levels of participation the Finnish government has instituted a series of reforms, many of which are comparatively low-tech. One initiative is a crowd-sourced action plan, developed in part by the Ministry of Justice, which coordinates work across government agencies to identify best practices for enhancing input from the public when designed policies. According to a policy paper developed in conjunction with the Open Government Partnership, Finland’s “Action Plan on Open Government” focuses on three core areas:

- **Open Knowledge.** Make as much information available as possible, in a way that protects privacy and security.
- **Open Procedures.** Make policymaking transparent, and invite participation in the process.
- **Clear Language.** Ensure that citizens are capable of interpreting and comprehending policy language.

The goal of this effort is to facilitate increased citizen participation in the policy-making process by lowering the barriers to entry through simplified language and processes. Today, major policies are increasingly dependent on citizen input and the most ambitious project will involve citizens in the budget-setting process. Although participatory budgeting is not a new concept, Finland’s process will allow citizens to use open data to inform their own budget-setting priorities, which policymakers will use to help inform national policy.

SERVICE DELIVERY

More than being at the cutting edge of stakeholder integration and service delivery, e-government is the attempt to recognise the varying needs of users and the development of corresponding digital and physical channels. As Liam Maxwell, the UK government's Chief Technology Officer, asked: "What is the user need?"

Throughout the different phases in the development of e-government, leading governments have considered which touch points and service channels are the most appropriate given the requirements and tendencies of end users. This has led to multi-channel strategies across email, SMS, digital-voice and social media platforms. This has proven particularly successful in times of emergency. In the US, for example, in the event of a child disappearance all citizens within a predetermined area receive a voice call or SMS.

Although governments now have multiple digital access points from which to interact with key stakeholders, service delivery continues to be population-wide, in terms of scale, and so remains largely untargeted and impersonal. Channel-optimisation strategies, which emphasize specificity, will form a key part of network government. As a result, leading networked governments will be defined by:

- The seamless integration of service channels and
- The ability to personalise delivery channel depending on user trends.

While citizen homepages and accounts underline the fact that a more tailored approach to service delivery is already being adopted, service integration and personalisation will be the measure of success of leading networked governments in five years.

POLICY- TO CITIZEN-CENTRIC MANAGEMENT

While technology is central to successful networking, the structural evolution of governments – from fixed, physical entities to responsive multi-channel service providers – is being propelled by increasingly demanding citizens.

For the purposes of this transition, the private sector provides a useful window into the future of the public sector. Over the last decade companies such as Amazon in retail and Google in technology have sought to boost stakeholder value by serving key consumer segments and building loyalty around complimentary service offerings; rather than a more traditional approach focused on product segmentation and the growth product categories. The Amazon Kindle Fire is one such example. This product enables customers to manage the entirety of their relationship with Amazon through a single point of contact (the Amazon sales portal) and on multiple devices – to search, read books, watch movies, listen to music, etc. In e-government terms, Amazon's interaction with its clients has reached the transformative phase: it is using a networked, integrative approach to service delivery.

Pragmatically, Amazon's client-centric customer-engagement model for improving services and driving client loyalty, is instructive. Networks offer governments similar opportunities to adapt the character of existing policies, re-engineer policy-making processes, improve service delivery and, ultimately, increase citizen trust and satisfaction with its government.

More fundamentally, in a world where labour demonstrates ever greater mobility, and where governments will need to address demographic time bombs and fiscal constraints more actively, it will be crucial for leading and ambitious governments to optimise their practices in order to retain and attract the best and brightest students and workers. Doing so will require:

- Offering a single user interface to access all government services,
- Having a single place of record, and
- Linking services in a way that addresses the broader needs of citizens.

Such an approach can be adopted at many levels to account for different types and forms of citizen interaction and, in so doing, be used to develop the most appropriate citizen-centric solutions.

EXPERT VIEW**Ora-Orn Poocharoen**

Assistant Professor of Public Management, Lee Kuan Yew School of Public Policy, National University of Singapore

How can mobile phones be used to improve citizen-centric design?

Mobile phones can be easily integrated into all parts of the policy process, from formulation, to its implementation, to its validation, monitoring and evaluation. First, phones can be employed to help the public understand and interact with the policy making process – this is increasingly common through social media. Second, phones are ideal for many types of implementation – payments and subsidies alerts through SMS, for example. Third, citizens can provide feedback in near-real time. If you take these technologies and apply them to critical infrastructure, it becomes much easier to monitor your environment.

This sounds great, but how can we ensure that everyone can benefit from it?

Here, the importance of society, culture and values cannot be understated. Informal networks and familial connections will go a long way to help bridge the intergenerational divide, while communitarian efforts can ensure that relatively unconnected individuals can share access to these technologies. The sooner the costs of these technologies go down, the easier it will be to guarantee a minimum level of access to far-flung communities.

What types of institutional safeguards should be in place to secure mobile technology?

The solution to this is highly dependent on the social norms and cultural imperatives of a society. In liberal western communities, for example, there is an emphasis on the separation of government and personal spheres and, as such, a citizen's right to privacy. In contrast, in Singapore the distinction is less clear and the government is seen as central to housing and protecting citizen information. The key will therefore be to create an institutional framework that can effectively keep pace with technological innovations while also accounting for cultural sensitivities and expectations.

Transforming government

As in any large organisation, a fundamental change of approach often entails significant reorganisation.

The shifting approach to meeting citizens' needs

	Traditional government Policy-centric approach	Future government Citizen-centric approach
Strategy	Infer the best policy	Stakeholders inform the best solution
Culture	Policy culture: invent the next leading policy idea	Citizen culture: how can we better meet citizen needs?
Processes	Implement new policy	Manage the citizen's experience
Metrics	How effective is the policy at meeting its objectives?	What is the citizen's experience?
Organisational structure	Department division	Citizen segmentation

TRADITIONAL GOVERNMENT: HIERARCHICAL STRUCTURE

Most governments are vertically and hierarchically structured, with each government department designed to specialise in the design, implementation and delivery of a particular function, service or product.

While this structure is advantageous from a specialisation perspective, it has led to a siloed approach to service delivery insofar as each ministry typically has its own budget, objectives and means of engaging with the general public. This type of service delivery wrongly implies that the lives of its end-users are similarly compartmentalised and that each user prefers to interact in the same way as all other users. A citizen,

for example, needing simultaneous access to healthcare and employment services is therefore often required to deal with each department separately and often has to jump through multiple validation steps with each department.

This approach to service delivery runs against technology's ability to compute broad-based user trends and connect the relevant users and service providers. To ensure that the technological dimension of network government is successfully executed, governments need to develop an organisational structure which is equally connected and integrated with the aim of operating and identifying citizen needs.

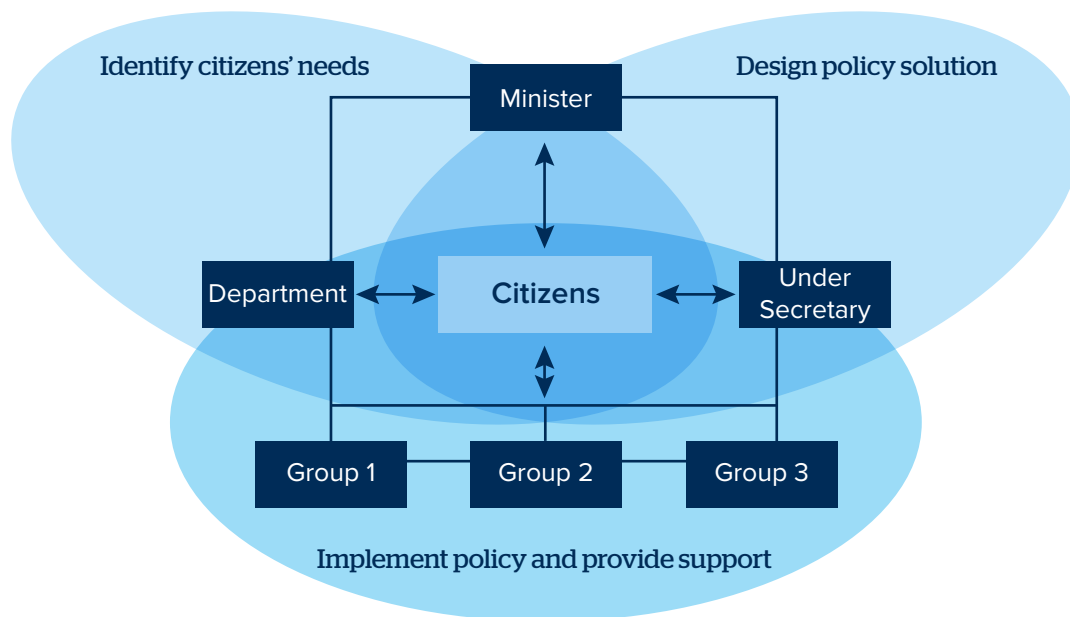
FUTURE GOVERNMENT: NETWORKED HOLACRACY

From an organisational point of view, successfully evolving from a policy- to a citizen-centric model will require an organisational structure that avoids three key pitfalls:

- Lack of clarity in relation to decision-making authority
- Isolated modes of operation
- Failing to place citizens at the centre of government planning and operations

Avoiding these pitfalls will ensure organisational and decision-making clarity as well as constant dialogue within government and between government and its stakeholders. This networked approach, enabled by the incorporation of modern technologies, will enable each layer of government to learn, understand and, thereby, predict both broad and specific citizen habits, problems and needs.

Future departments: Citizen-centric approach



Constructing a citizen-centric operating model entails a fundamental transformation of authority. In this model, policy decision-making power is shifted away from ministers and undersecretaries and towards a defined governance process.

The net effect is that there is a shift away from policy-making authority and control (i.e. pre-networked model) towards output and results of government services.

In recognition of the management ethos of holacracy and the organisational imperatives of networked government, we have termed this organisation model as *networked holacracy*.*

Networked holacracy captures two fundamental necessities for a citizen-centric operating model:

- It underscores the need for technological and organisational collaboration and connectivity within government and between government and others stakeholders, and
- It emphasizes the need for a shift in decision-making authority.

Networked holacracy is not proposing the end of ministerial office or the elimination of a chain of command. Instead, it empowers those of a more junior rank with the authority and accountability to make decisions that are in the best interests of the end-user. Thus, those who are best placed to make decisions (e.g. front-line nursing staff or a computer programmer) will be empowered to do so. Naturally ministers and undersecretaries will still have the authority to replace underperforming workers, but personal agendas will be subordinate to clearly defined governance processes put in place to ensure the dominance of output over authority.

* Holacracy is a portmanteau with origins in the discipline of social technology and organisational governance. It refers to the process of devolving decision-making authority equally between self-contained groups that form units of a larger, integrated system. Holacracies characterise the organisational structure and managerial ethos of international NGOs.

CASE STUDIES: SINGAPORE

G-Cloud, OneInbox and the future of citizen-centric design

In Singapore, the aftermath of the global financial crisis and subsequent recession encouraged the government to rethink its networked government strategy. The government determined that procuring advanced technology would help reduce redundancy across departments (and alleviate fiscal pressures), improve responsiveness and spur private-sector innovation.

On the back of its high-speed broadband network, the government invested in cloud technology to unify its ICT environment and empower agencies to design and develop applications centrally and remotely. Additionally, through a central authority responsible for enterprise architecture, the government has increasingly used the cloud to integrate processes across agencies and interact with the public in ways that save time and money.

Singapore has enjoyed increasing recognition for its networked government programmes since the UN began to index and score global efforts. A combination of superior online service delivery, emphasis on mobile development and a comprehensive national vision has contributed to Singapore's status as a preeminent example of the potential of networked government in high-income countries. However, despite many successes, Singapore continues to encounter challenges that could stifle future innovation. Most notable are a suite of e-participation challenges, such as reducing the gender-participation gap and ensuring that the private sector is capable of using open data for developmental purposes.

A major initiative aimed at narrowing this disparity is the government's investment into public sector cloud computing. The most notable example of this is G-Cloud, a combination of commercially available cloud offerings and a bespoke private government cloud. In addition to empowering government agencies with the ability to subscribe to a standardised Infrastructure-as-a-Service to facilitate the delivery of e-services, agencies can also subscribe to an array of ICT services (such as storage and databases).

[continued on next page]

As Brian Robertson, the thought leader on holacracy, has outlined, this organisational shift "liberates those within the organisation to be both more autocratic and simultaneously more collaborative." As governments shift to think about the needs of its citizens more holistically, a holacratic organisational shift will move departments away from competing for budget and authority and towards a greater degree of

cross collaboration and original thinking in order to best address the needs of citizens.

In essence, instead of seeking to define all solutions, leading networked governments have realised that empowering others to solve common problems is often the quickest and most effective means of arriving at a solution.

CASE STUDIES: SINGAPORE

[continued]

Critically, the government is also engaged in an iterative development process, one that includes the private sector, to identify and develop whole-of-government cloud solutions that incorporate additional features unavailable to the wider public, such as data analytics tailored to government operations and additional security features. This process will spur increased private-sector participation as Singaporean firms and global subsidiaries compete for tenders. G-cloud has helped firms propose and develop applications and helped agencies better utilise ICT and cut costs. The government recognised that the ICT requirements of its departments were coalescing; at the same time, citizens and businesses were increasingly demanding digitised services. Through an integrated platform, e-services could be easily standardised, which would simultaneously reduce capital expenditures in individual departments and improve the user experience for citizens and businesses.

One of the earliest innovations to emerge out of G-Cloud was OneInbox, a secure platform which allows Singaporeans to track government correspondence (such as tax documentation and licensing), which, in turn, improves traceability and data robustness. OneInbox is a premier example of citizen-centric design because it eliminates the asymmetry of information that can plague interaction with the public sector.

Open government data

As society's connector, governments are uniquely positioned to use and encourage the application of data in a way which connects stakeholders: citizens, businesses, non-governmental organisations (NGOs) and governments.

Government's role as society's connector

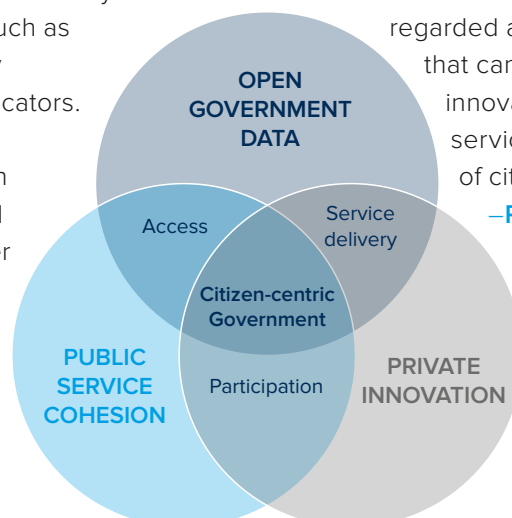
<p>Distribute</p> <p>Accumulate data</p> <p>Make non-sensitive data publicly available</p>	<p>Facilitate</p> <p>Encourage multi-stakeholder data sharing (e.g. between departments, government-to-business, government-to-citizens, etc.)</p> <p>Lead by example</p>
<p>Use</p> <p>Use data to change the way we understand a problem</p> <p>Develop the necessary technical expertise</p>	<p>Oversight</p> <p>Implement a code of best practice</p> <p>Protect privacy and security</p>

In line with conventional governance models, governments have historically been the gatherers and keepers of data. As such, governments have decided what data should be made publicly available and how that data is presented. This ranges from weather reports and voting statistics to data on traffic congestion. Although technological constraints are an important consideration in terms of feasible channels of delivery, historically governments have exercised authority and control over data rather than emphasized output and results.

With advances in technology governments have an opportunity to shift from a highly managed model of data collection and distribution towards a model that enables its users to decide how to interpret and interact with aggregate data. Open government data will empower public and private decision-making and inspire a collaborative, entrepreneurial approach to problem solving. This will enable greater access, participation and service delivery, which will improve policy decision-making and ensure citizens are the ultimate beneficiaries.

- **Transport:** timetables, routes, on-time statistics.
- **Science:** data that is produced as part of scientific research from astronomy to zoology.
- **Statistics:** data, produced by statistical offices, such as the census and key socioeconomic indicators.
- **Weather:** the many types of information used to predict and understand weather and climate.

- **Access:** Open government data is about the ability to analyse, share and reuse data in a way that enables multiple forms of interpretation and problem solving.
- **Service delivery:** Data should be regarded as a public resource that can inspire the creation of innovative businesses and service channels for the benefit of citizens.
- **Participation:** By opening up data, citizens are enabled to become actively involved in policy design, implementation and management.



In essence, open government data will provide a platform for a network of relationships: *government-to-government*, *citizen-to-government*, *citizen-to-business*, *government-to-business*, and *citizen-to-government-to-business*.

CASE STUDY: NEW ZEALAND

Digital data, on demand

The government of New Zealand was one of the first to fully adopt networked government approaches and orientate policy-making around them through its 2011 Declaration on Open and Transparent Government.

Specifically, the declaration directed all public service departments – notably including the police, defence forces, intelligence and other security services – to commit to releasing non-personal and unclassified data and provide annual progress reports. The primary goal was to foster public consumption of data for innovative purposes. In its 2014 Report on Agency Adoption of the Declaration on Open and Transparent Government, the government found that, in addition to encouraging innovation, the new requirement had led most ministries to experience a dramatic gain in efficiency due to the reduction or elimination of data requests from other departments and the wider public.

The Government Open Access and Licensing Framework (NZGOAL) is a second pillar of New Zealand's open data project and provides a framework for the standardisation of licensure of government copyrighted works under Creative Commons New Zealand law licenses and strongly encourages the declaration of 'no-known rights' for non-copyrighted material. According to the Open Data Barometer's 2013 Global Report (www.opendatabarometer.org), the framework put forth in NZGOAL means that many datasets produced by the government are clearly licensed and available for free, which enables third party actors to use data with few barriers to access.

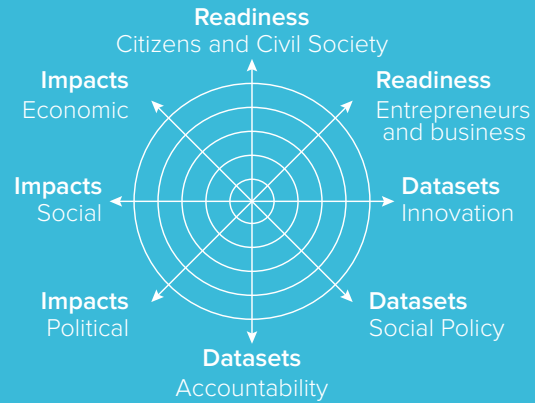
The establishment of a common threshold for dissemination and licensure of data has freed up enough resources to allow the New Zealand Government to announce the development of common authoritative data repository that helps it to contextualise data as part of its broad five-year ICT strategy. The establishment of a common repository, in turn, has facilitated the establishment of a shared community of practice within the government's ICT workforce and triggered growth in the wider open-data community.

Global uptake of open data

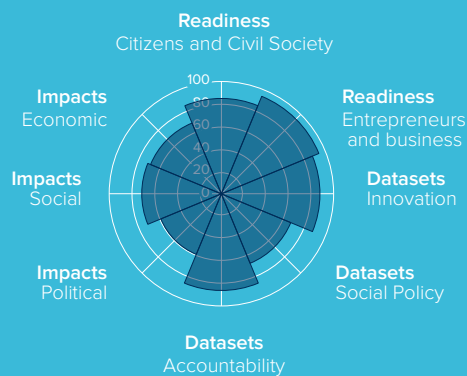
The Open Data Barometer is a product of the Open Data Research Network, a collaborative project that focuses on comparative open data policy.

One of their key initiatives, the Open Data Barometer, investigates the spread of Open Government Data (OGD) policy across the world using peer-reviewed survey data and other sources.

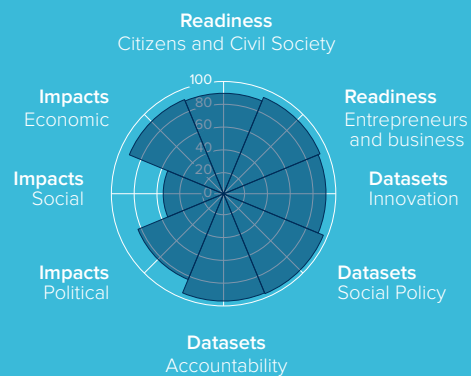
The barometer scores countries based on their 'readiness to secure benefits from open data, the publication of key datasets and evidence of emerging impacts from OGD.'



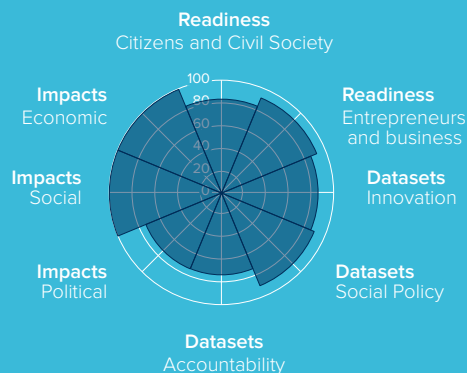
Sweden



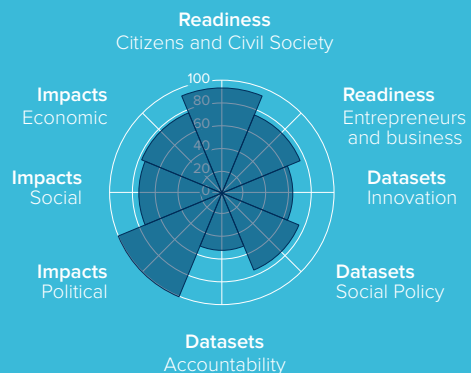
United Kingdom



United States



New Zealand

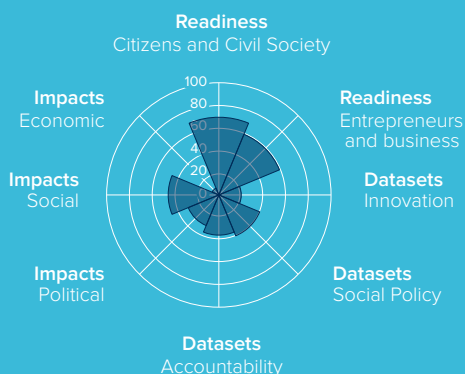


According to the Barometer, ‘Readiness’ is indicative of a country’s overall progress on building the socioeconomic and political foundations necessary to realise the benefits of open data. As such, the Barometer scores the readiness of the public and private sector and of larger civil society to capture the value of open data.

The next group of scores pertain to ‘Implementation’ the extent to which governments have published the critical datasets identified by the the Barometer as essential to supporting innovation, public sector accountability/transparency and ‘improved social policy.’

Finally, the Barometer evaluates ‘impacts’ – that is, whether or not the publication of data has led to positive change. These charts depict the country and region scores of several countries discussed in this report.

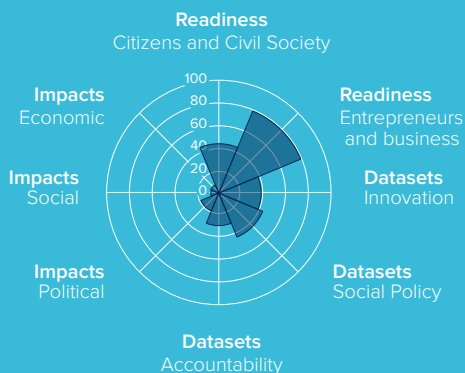
Brazil



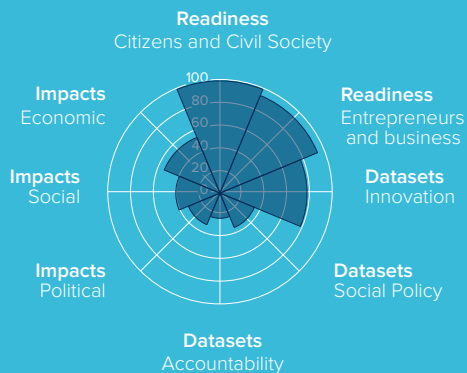
MENA / Central Asia Average



Singapore



Finland



The future of networked government

To gain a deeper understanding of the appetite for digital services, networked governments should pool the information that different agencies have collected in order to create integrated personal profiles. This would allow governments to discover and statistically chart patterns of citizen uptake. Doing so presents numerous opportunities, challenges and risks to citizens.

UNIFIED DATA PROFILES

Most advanced network governments already offer their citizens basic online services such as acquiring birth certificates or paying parking fines. Some may offer more advanced services such as applying for paid maternity leave or a pension. There is a pattern to each of these instances of service delivery – pensions are claimed at a certain age, the issuing of birth certificates is linked to applications for maternity or paternity leave – and an integrated view of citizen information is necessary to identify these patterns.

To elucidate these patterns and improve service cohesion, leading networked governments typically do two things:

- Identify user trends and infer relevant needs, and
- Empower personal decision-making.

Much of the required information will be derived from the online centralisation of services and the creation of citizen-user profiles; ensuring a central place of record for things such as education and health,

social security benefits, jobs, properties and taxes. This centralisation and access offers government the opportunity to quickly identify and anticipate user needs and, if necessary, actively engage with the user. This personalisation will, in turn, improve the perception of network government services and correspondingly increase levels of participation and use of online services.

The centralisation of services also offers users the opportunity to quickly understand which services are available and how to make use of them. Thus, as with online banking, users will be able to log in to their accounts to update personal information, request hospital appointments and pay parking fines.

The scope for this sort of centralisation will ultimately depend on the capabilities of a government and what is possible within a country's legal system, as well as levels of popular satisfaction, comfort and trust with the government.

PEOPLE PARTICIPATION IN POLICY DESIGN

Ideally, when designing and implementing policies, an analyst should:

- define the problem
- construct the alternatives
- select the criteria under which the alternatives will be assessed
- project the outcomes
- confront the trade-offs
- present all the information to the incumbents so an informed decision can be made

Today, technology enables a whole new level of interaction between a government and its citizens. Social networks and government chat forums can be used by elected officials to promote the launch of new government services or to directly ask for feedback about proposed alternatives to specific policy problems.

Within five years, government will use social networks as a primary means of:

- Deliberative polling,
- Evidence-based policy-making.

These will enable governments to better identify which problems should be tackled, the type of solutions that are needed and how to better communicate policy outputs and intentions.

Leading networked governments at all levels will also seek to design new mechanisms (and improve existing ones) to elicit and encourage citizens participation and invite stakeholders to participate in government decision-making and service development, more widely. As such, dashboards and ratings mechanisms will become commonplace, enabling users to propose, provide feedback or vote for proposed policy solutions. Such direction facilitation and participation will not only direct government resources and attention more effectively but also promote user engagement and a sense of empowerment and control.

While tools such as dashboards and deliberative polling will increase participation and help improve policy design and execution, concerns in relation to elite bias will persist. More specifically, as technology evolves, some groups are likely to be more willing and able to embrace it than others. As such, there is a danger of vulnerable groups such as the elderly or unemployed being inadvertently underrepresented because of a lack of digital access or know-how. Successful networked governments will therefore continue to account for this usage challenge by developing initiatives aimed at including those groups who lack connectivity.

CASE STUDIES: MOBILE TECHNOLOGY AND M-GOVERNMENT

Using smartphones to inform and shape policy

The unifying themes behind these cases of M-government initiatives include:

- Innovative use of mobile technology to increase citizen participation in the policymaking process;
- A demonstrable value proposition, such as recognition through social media and increased interaction with service providers; and
- Increased efficiency in the policy formation, execution and evaluation process.

#MorganFire01 (San Mateo, California)

In 2013, a major forest fire burned more than 1,000 square kilometres across Yosemite National Park and Stanislaus National Forest in California. To monitor forest reclamation and determine if the forest service would need to intervene to promote recovery, National and State Forest Service staff partnered with two non-profit organisations as well as the engineering and technical services firm URS (now part of AECOM) to develop the #MorganFire01 monitoring service. This service allows hikers to contribute to monitoring efforts by submitting images of affected areas at pre-set locations. These images are aggregated through Twitter, allowing Forest Service employees to efficiently evaluate ecological recovery and identify critical-need areas.

<https://twitter.com/hashtag/MorganFire01>

Intelligent communities (Rio de Janeiro, Brazil)

In the run up to hosting the 2016 Olympics, the city of Rio de Janeiro has invested heavily in its ICT infrastructure. The Intelligent Community Forum, a New York-based think tank, profiled these efforts in 2015; and the major goals of this initiative were:

- upgrade its ICT infrastructure;
- establish a big data management centre to allow for real-time planning; and
- network critical infrastructure through the use of sensors.

Critically, the proliferation of sensor-tagged infrastructure to produce an ‘internet of things’ links city officials and the public to the infrastructure that allows the city to run. Data produced by tagged infrastructure has already led to the development of more than 100 mobile apps and SMS systems that alert citizens to issues (such as broken water mains) and allow for citizens to interact with urban planners and first responders to improve service delivery and response quality.

REDESIGN OF DIGITAL SERVICES TO BETTER ACCOUNT FOR DIFFERENT USER NEEDS

Successful networked governments ensure that digital services and solutions are developed in a way that incorporates the varied needs and interests of an ethnically, linguistically and physically diverse population. To do so requires:

- Government investing the necessary resources to provide a range of different languages, or
- Reliance on increasingly sophisticated private-sector translation tools.

Although still somewhat rudimentary (i.e. in terms of e-government, it is only at the information phase), the second option is already available via Google Chrome. A user enters a website that is presented in a foreign language and Google provides an option to translate the content. With this in mind, in addition to the potential resource savings, governments are likely to develop services that more ably leverage this built in translation capability.

Given the sheer variety of user needs and the finite resources and capabilities of a government, it is likely that leading networked governments will regard digital redesign as opportune for broadening government-to-business relations. This

could take the form of formal outsourcing or the publication of open government data intended to empower private firms to innovate solutions to common problems. The relatively recent release of Federal Reserve data to seek a solution that would help blind and visually impaired individuals decipher between different Federal Reserve notes is a case in point. In collaboration with the National Institute of Health and the National Eye Institute, NantWorks Company (a private firm) developed a solution via a mobile App named LookTel Money Reader, which subsequently inspired an App for the same user base that instantly recognises everyday objects.

While this digital redesign will lead to an increasingly blurred line between who is responsible for solving public problems, successful networked governments will also recognise the need to keep open old technologies such as Interactive Voice Response (IVR) systems, including quick access to human operators. However, as they are doing already, governments will develop a channel structure that incentivises citizens to use the most cost-effective channel.

REDESIGN OF SERVICES FOR MOBILE DEVICES

Though most leading governments have completed the transaction phase of government, many of the online services they offer are not mobile-enabled. As such, particularly on the transactional side of services, users are forced to use a laptop or desktop computer. Where services are available for mobile devices, applications are slow, cumbersome or limited.

The browsing component of mobile-ready services is already top-of-mind among leading networked governments

and several countries, including the UK's Gov.uk portal, already use responsively design websites that enable user-friendly interaction on fixed and mobile devices. The mobile side of transactional execution will therefore be a key focus for leading networked governments over the next five years. Achieving this will depend on two things:

- Updating technological platforms to enable mobile transactions.

- In some instances, updating a country's legal and regulatory framework to enable mobile transactions.

The other focus, which is likely to provoke debates about privacy, will be on location-based services that offer users a highly personalised service offering based on geographical location. Thus, for example, after learning that a citizen is in a country caught up in a terrorist attack, a government will be able to assist immediately and

remotely by offering security and safety information.

As with the redesign of digital services, leading networked governments will pursue both external and internal solutions. Open government data will be used to inspire privately funded solutions while governments will also develop internal location-based capabilities, particularly where security and safety are involved.

BETTER SEARCH SERVICES: NEEDLE IN A HAYSTACK

The quality of government search engines will also become a crucial milestone for leading networked governments. Although there are already some relatively successful examples in countries such as Australia, Chile, New Zealand and South Korea, further progress could be made to improve the:

- Language technologies of basic searches,
- Incorporation of semantic interoperability between agencies, and
- Statistical analysis of search data.

The increasing number and complexity of services offered by government agencies makes it necessary to create more sophisticated search services that are sensitive to the context in which a search is performed. The problem is similar to the one that commercial search engines face on the internet: having to search and index billions of documents to find those that are most relevant to the user.

Crucially, government and commercial search engines offer two very distinct services. While the aim of internet searches

is to deliver the maximum number of search results, governments must be able to link users to a specific service that addresses their particular need. This raises the challenge of identifying a single service that meets users' needs, from an ambiguous or incomplete search request. A government's ability to help is ultimately limited by a user's ability to search. Thus, natural language processing and machine learning technologies will become increasingly necessary in order to further advance the provision of digital services.

Beyond the well-known existence of redundancies and rework, there are semantic problems that represent an obstacle to progress in networked government. Different agencies may use different terms to refer to the same service or employ different definitions for the same word. This ambiguity is especially important in the case of agencies with similar or overlapping functions. Clear, operational terminology will therefore need to be agreed between all government agencies in order to improve the searchability and usability of government services.

EXPERT VIEW

Cristian Bravo-Lillo

Lead Researcher, MunK / RSEduca

How will future governments best capture user feedback?

There are two main categories of user feedback that future governments should use: behavioural and verbal. Verbal feedback is the usual response to explicit requests for information; behavioural feedback is everything else we do. If appropriately analysed, it can tell us a lot more about what people really think.

What incentives are necessary to encourage citizens/governments to adapt e-governance/citizen-centric approaches to service delivery?

The main factors that help to explain people's favourable response to online government services are familiarity with software and computer interfaces, need, and usability of such services. The last one is the only one under direct control of governments, so the focus should be on usability.

Finally, citizens that feel they are paid attention to are more prone to participate and to make greater use of online services.

What policy recommendations would you make to governments wanting to implement leading e-government solutions over the next 5 years?

Appoint a Chief Information Office with enough authority to jointly decide (along with each agency) what changes should be introduced in each specific digital service.

Think and design an organisation structure that is independent from political authorities and elections. These issues are highly dependent on values, which is an important reason why these initiatives may fail.

SECURE AND PRIVATE INTEGRATED PERSONAL PROFILES

One of the challenges that already-competent governments will face in the next five years, and beyond, is a citizen-centred, privacy-aware behaviour regarding their access to increasing flows of data from people and non-governmental organisations.

Governments will face the trade-off between:

- knowing much of people’s lives by collecting and analysing information contained in their social-network public profiles, and by combining this data with several other sources, and
- people’s reasonable demand to restrain government access to personal information and limit it to the minimum amount that is necessary to accomplish networked government solutions.

One solution is for governments to allow citizens extensive controls over their own profiles, allowing people to decide the type and quantity of data that they share, but also how this data is used, how long it is kept, and with whom it is shared. This

access implies sharing data between agencies, which in turn requires a clear legal framework to limit data sharing and protect citizen confidentiality. Data should be secured to the extent that government itself cannot abuse the data easily.

Governments could rely on existing services by large corporations such as Google, Facebook, Microsoft, or Apple to address these challenges as large technology companies have already amassed huge databases of personal information. The problem of this strategy is that companies’ private interests should never supersede public ones. Governments should either be able to exert careful control of this private service or create their own service capabilities.

MINISTERIAL AND TECHNOCRATIC OPPOSITION

Another major challenge will come from within government agencies, due to two interrelated factors. First, as agencies become increasingly networked and citizen-focused, there will be a natural reluctance to cede autonomy. As such, technocrats and other experts, particularly senior-level officials with limited experience working within networked government initiatives, may be hesitant to solicit and incorporate citizen feedback into policy design.

Second, the review and rewards process in government agencies is not necessarily oriented around networked governments; this may mean that the appropriate incentives are not in place to encourage agencies to adapt to this new method.

In the absence of proper planning, technocratic and managerial opposition is understandable. It likely stems from the belief that citizens are not as well informed about complex topics as individuals who have spent their professional lives working in a particular arena.

The policy formulation, execution and review may, at times, not benefit from public input. Managers may feel as if inviting greater participation in the process will force managers to respond and be accountable to a large number of people that, by virtue of the role they play in the policy-making process, have limited insight into how an agency functions on a day-to-day basis. This may create unrealistic expectations of efficacy or invite unjustified criticism of management ability.

Furthermore, even if an agency workforce is sufficiently interested in promoting citizen-centric policy design, the proper incentives may not be in place to ensure that the workforce proactively works towards this goal. This may be due to the fact that the performance assessment process may not account for increased citizen engagement. Ultimately, bureaucracies are typically highly constrained for resources and time; if increased citizen participation is a goal, the proper incentives must be in place and steps must be taken to formalise interaction with the public.

SECURITY

Without question, a major challenge is and will continue to be the ability to maintain and defend networks against increasingly sophisticated cyberattacks. Because citizen participation is a core component of networked government policy, it is critical to sustain public trust in the government's online presence. Cybersecurity must remain at the forefront of any networked government strategy.

Mobile technology presents particular cyber-security challenges. By virtue of

being portable and constantly activated, the government is vulnerable on a number of fronts.

In addition to surveillance and 'conventional' cyberattacks, governments who equip their employees with smartphones will make themselves vulnerable to less sophisticated attacks, such as device theft. It is critical to ensure the proper safeguards are in place for mobile technology, such as digital 'kill switches' and enhanced encryption for wireless devices.

EXPERT VIEW

Zeger van der Waal

Assistant Dean of Research, Lee Kuan Yew School of Public Policy, National University of Singapore

How can governments help their employees acquire the required skills, operating processes and culture necessary to promote citizen-centric policy?

One of the major challenges you see in public agencies is the challenge of fostering a mind-set of trust and collaboration between the agency and the wider public. The primary driver of this challenge is not cultural – public sector employees can be incredibly team-oriented. The challenge for an employee is figuring out a way to balance the demands of their day-to-day professions with the need to more closely integrate public feedback into policy formulation, evaluation and review. A key way to do this is through performance metrics. If you can make citizen-centrism a core part of a job description, it will be to be easier to align policy goals with workflows.

Which governments are leading examples of successful and unsuccessful transitioning into citizen-centric models?

It is important to note that the transition to citizen-centric policy is not generic or universal across countries. Take India, for example: Although India is a low-income country, its population is incredibly tech-savvy. In India, initiatives aimed at using technology to combat corruption are easily adopted and considered premier examples of transparency efforts. In other parts of the world, countries without a strong tradition of public transparency are still using technology to streamline internal coordination in their departments. Therefore, it is critical to contextualise technological innovation.

How has innovation in the private sector led or lagged behind public services innovation?

At first glance, you'd think that the private sector is far ahead of the public sector in innovation. However, across the world the public sector has often laid the groundwork for this innovation. Opening up data, for example, has led to entirely new forms of private sector activity that didn't exist a decade ago. Because of this, as governments open their policymaking process to the wider public, the private sector will likely be the first to benefit. This begs the question: If the private sector is the first to benefit off of increased transparency, open data and citizen-centric policy design, should the private sector also be responsible for things like data collection?

Policy recommendations

Technology does not stand still and, as such, governments that have successfully progressed through the first three stages in the trajectory of e-government – information, interaction and transaction – cannot rely on their past successes to ensure future progress. Successful networking will depend on continued government innovation and investment. The most urgent frontier in this continued evolution, as already discussed, is the ability to access government services on mobile devices.

Stemming from preceding analysis, and challenges for aspirant networked governments over the next five years: below are a series of key opportunities

ORGANISATIONAL

- As part of the annual review process, hold government staff accountable for user ratings
- Appoint a Chief Technology Officer/ Chief Information Officer responsible for overseeing networked government solutions as well as identifying global best practices and benchmarking service delivery metrics
- Update legal and regulatory frameworks to enable greater transactional capabilities
- Establish a clearly defined governance structure for open government data that has been formed in consultation with all key stakeholders, and ensure clear policies for the development of Application Program Interfaces (API) to enable greater software interaction
- Leverage different stakeholder relationships to identify and build solutions to common problems
- Implement government-led lending initiatives – similar to borrowing books from a public library – to increase use of and access to mobile devices
- Develop a scorecard that benchmarks all services and proposed policy initiatives against minimum standards for access, participation and service delivery
- Clarify the reasons for low-engagement levels and modify digital services accordingly

TECHNOLOGICAL

- Ensure the use of deliberative polling and evidenced-base policymaking when designing, implementing and operating public services
- Acquire the internal capabilities necessary to analyse user data and filter out unnecessary “noise”
- Develop service tools that promote active participation in policy design and effectively capture key data points while ensuring user privacy
- Ensure that government services are user-friendly on multiple devices
- Develop common operational terminology across government and improve the searchability of government services

Conclusion

The evolution of technology and innovations in the private sector have often shaped or influenced changes in government decision-making and operating priorities; and this dynamic is likely to continue. With the advent of integrative devices and service offerings, networked approaches to governance have emerged as the most viable, necessary and beneficial.

As technology evolves it will be incumbent on government to decide when, and how much, to invest in networked government solutions. For those governments that have assiduously evolved their online and digital service capabilities, the progression to networked government will largely seem a sequential one.

At the same time, these governments will experience diminishing returns in terms of the investments they make in networked government solutions – with regard to innovation, user engagement and citizen satisfaction.

The point at which this “inverted bell curve” trends downwards presents governments with crucial policy-development and service-delivery opportunities:

- Decide against the service or advancement in questions and go no further, or
- Or, if in the interests on the public, utilise the benefits of networked government to promote private/citizen investment and innovation to find a solution to a common problems.

Networked government also offers an unparalleled opportunity to leverage input and feedback to improve policy and service delivery, thus enabling governments to be proactive (and use user voting patterns to identify and pre-empt patterns, habits and needs) and require governments to be reactive (to respond to the stream of feedback and suggestions that citizens and the private sector submit through networked services).

From both a cost and practical point of view, governments will need to establish clear guidelines for when to be reactive to user discontent and when to proactively make long-term, sometimes unpopular decisions that are perceived to be in the best interests of the relevant stakeholders.

