Embracing Innovation in Government
Global Trends 2018

WORLD القمة
GOVERNMENT العالمية
SUMMIT للحكومات

In collaboration with

OECD
BETTER POLICIES FOR BETTER LIVES

OPSI   Observatory of
Public Sector Innovation

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The Observatory of Public Sector Innovation collects and analyses examples and shared experiences of public sector innovation to provide practical advice to countries on how to make innovation work.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Contents

How are governments innovating to address unprecedented challenges?

The current global political and economic setting is complex and fast-changing, with society transforming in ways that challenge existing views about the world and how it is governed. Technology is disrupting the status quo and creating a future of unknowns. Meanwhile, globalism has accelerated and a backlash has formed as a result of growing economic inequalities. Gender equality remains an uphill battle, conflict is forcing record numbers from their homes, trust in government is near record lows, and climate change and job automation crises are fast approaching. These challenges can seem insurmountable, but their significance is mirrored by the potential for governments to take action with new approaches to policies and services. Governments are rising to the occasion and innovating to cope with new realities and to build a better future for their people.

A Global Review of Government innovation

The OECD Observatory of Public Sector Innovation (OPSI) serves as a forum to share lessons and insights on government innovation.[1] To further its mission and learn from leading-edge innovators, OPSI has partnered with the Government of the United Arab Emirates (UAE) and its Mohammed Bin Rashid Centre for Government Innovation (MBRCGI),[2] which serves to stimulate and enrich the culture of innovation within government. As part of the MENA-OECD Governance Programme, OPSI and the MBRCGI conducted a global review involving extensive research and an open Call for Innovations to explore how governments are innovating in response to the enormous challenges of today's complex world. By identifying and sharing these trends and examples through this review and by serving as a global innovation forum, the OECD and MBRCGI hope to inspire action, embed successes, reduce the impact of failure, and speed up the transformative process of innovation to deliver better outcomes for people. This review is published in conjunction with the 2018 World Government Summit,[3] which brings together over 130 countries and 4 000 people to discuss innovative ways to solve the challenges facing humanity.

1. OPSI is part of the OECD Directorate for Public Governance (GOV). See www.oecd.org/gov.

2. See www.mbrcgi.gov.ae.

3. See www.worldgovernmentsummit.org.

One of the features of the summit is the *Edge of Government*[4], a series of interactive exhibits that bring innovations to life. These exhibits include two of the case studies presented in this review, as discussed later.

Through research and the Call for Innovations, OPSI and the MBRCGI identified three key trends in public sector innovation that build upon trends identified through a global review issued in 2017.[5] These trends form the structure of this review. Each section includes a discussion of innovative initiatives by governments and their partners, real-world examples of the trend in action and recommendations to help countries unlock innovation. The trends focus on:

Identity

Key trends in public innovation identified through this review

Systems approaches and enablers

Inclusiveness and vulnerable populations

276 submissions from **58** countries

10 featured as case studies in this review

4. See https://edge.worldgovernmentsummit.org.

5. See http://oe.cd/eig.

Identity

An identity is a fundamental requirement for individuals and businesses to access government services and participate in society and the economy, and for governments to help unlock the potential of innovative services. Governments and their partners are innovating to conceive of new ways to provide identities to individuals and businesses through emerging technologies. They are also helping citizens demonstrate the unique combination of knowledge, skills and experiences that make up their own personal identities. In an interconnected and increasingly borderless world, they are questioning traditional conceptions of national identity and pushing the boundaries of what it means to be a citizen and resident.

SEVERAL THEMES HAVE BEEN OBSERVED IN THIS AREA:

Countries are rolling out new identity programmes.

The latest developments are in biometrics and blockchain, but can raise privacy concerns.

Open standards can help individuals express their unique identities.

Technology is enabling better decisions in business identity.

Innovation is spurring new discussions in national and individual identity.

Identity

KEY RECOMMENDATIONS

1. Develop identity solutions that fit with the culture of the country.

2. Make trade-offs clearly understandable by the population.

3. Think beyond traditional concepts of identity.

4. Use open standards and application programming interfaces (APIs) to unlock potential.

Image sources are included in the main body of the report

CASE STUDY: **Aadhaar** – *India*

Aadhaar is the world's largest biometric identity programme, covering 1.2 billion Indian citizens. Each recipient receives a unique ID number and submits their fingerprints and iris scans. Designed to mitigate fraud by ensuring benefits go to the right person, the initiative has expanded to many parts of everyday life in India. As the programme has grown, so have privacy and security controversies, including a landmark Supreme Court ruling that recognised privacy as a human right, which may have implications for the future of Aadhaar.
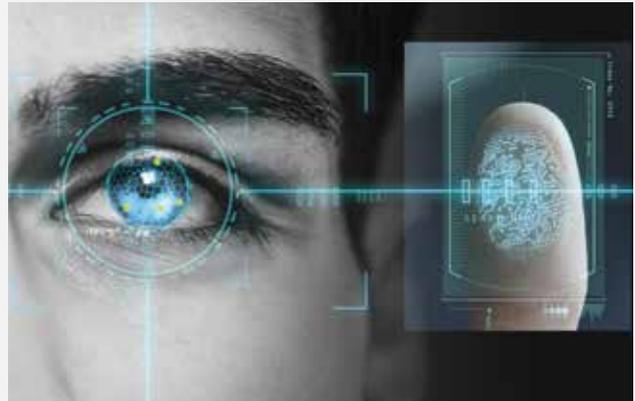
CASE STUDY: **Be Badges** – *Belgium*

Individuals learn and develop throughout their entire lives, whether in school, training, careers or their personal lives. However, few options exist to highlight skills not gained from formal credentials, such as diplomas and certificates. To address this, the Belgian government launched Be Badges, a digital platform where employers, schools and others can formally recognise individuals' experiences. Badge-earners can share their badges with others and the labour market, and employers can access the platform to find new employees.

CASE STUDY: **Australian Trade Mark Search** – *Australia*

Over 87% of a company's value is rooted in intangible assets, including trademarks that represent its identity. However, ensuring the uniqueness of a company's brand can be difficult and time consuming. To help, IP Australia launched Australian Trade Mark Search, a revolutionary image recognition and AI tool that helps companies to create a trademark that serves as a critical foundation upon which the rest of their businesses can be built, and helps distinguish their identity and their unique products and services in the marketplace.

CASE STUDY: **Data Embassy** – *Estonia*

Estonia is renowned for its technologically advanced government. Nearly every government service is performed electronically. As a result, Estonia is highly dependent on its information systems. To protect its data, Estonia conceived of data embassies – servers physically stored in other countries that fall legally under Estonian jurisdiction. Copies of key databases are stored on these servers and can be accessed in the event of a major incident. Through this initiative and others, Estonia is becoming a "country without borders", and in the process raising questions about the meaning of sovereignty and national identity in a digital world.

Systems approaches and enablers

Governments are using innovation to lead a paradigm shift in the way they provide services. The most innovative approaches refrain from layering one reform on top of another, instead repacking them in ways that allow them to get to the real purpose of the underlying change. Systems approaches step back and view the entire operation of government as an interconnected system rather than disparate pieces. They transform and re-align the underlying processes and methods to change the way government works in a cross-cutting way, while involving all of the affected actors both inside and outside government. In so doing, they leverage a number of tools and enabling conditions to succeed.

SEVERAL THEMES HAVE BEEN OBSERVED IN THIS AREA:

Innovators are embracing systems approaches to tackle complex problems, while also transcending administrative boundaries.

Countries are getting better at problem diagnostics to initiate systems change.

Systems approaches involve trade-offs which must be evaluated.

Systems innovators are looking for scale: From incremental to radical.

Innovators use systems approaches to transform the public sector itself.

KEY RECOMMENDATIONS

1. Focus on a problem, not a method.

2. Apply new problem diagnostic tools.

3. Analyse the potential systemic effects and value trade-offs of innovations.

4. Stay open to emergent, bottom-up change.

5. Experiment with transformative change inside government.

Systems approaches and enablers

CASE STUDY: **APEX** – *Singapore*

APEX is a whole-of-government platform which establishes common application programming interfaces (APIs) that allow public agencies to share data with other agencies and private entities. APEX enables different government data programmes to talk to each other, providing uniform governance, consistency and reliable performance. It enables innovation through a central catalogue and self-service portal where innovators can easily leverage common APIs as building blocks to create new services and experiences for citizens. One of the initial pilots is MyInfo, a service that removes the need for citizens to repeatedly provide their personal information to government services. APEX addresses a major systemic challenge: systems interoperability.

CASE STUDY: **Predictiv** – *United Kingdom*

Predictiv is an online platform for running behavioural experiments. It enables governments to run randomised controlled trials (RCTs) with an online population of participants, and to test whether new policies and interventions work before they are deployed in the real world. Predictiv has the potential to profoundly change governments' working methods by drastically reducing the time needed to test new interventions. In addition, while time constraints and political realities sometimes make it hard to run "field trials" on live policy, Predictiv makes experimental methods more accessible.

CASE STUDY: **Free Agents and GC Talent Cloud** – *Canada*

Canada has been testing several models for recruiting and mobilising talent within the public service in the digital age. The most ambitious of its projects is the Talent Cloud, which aims to become a validated, searchable repository of cross-sector talent. It envisions a digital marketplace where workers have access to rights, benefits and union representation, while retaining the flexibility to choose work inside and outside government, as offered. It represents a departure from the permanent hiring model in the public service, instead organising talent and skills for project-based work. While still at the visionary stage, Talent Cloud has produced several spin-off projects, such as Free Agents, that are innovative and successful in their own right.

Inclusiveness and vulnerable populations

In the face of major cross-cutting challenges such as migration, ageing population crises, uncertainties about the future of work and job automation, and continued gender and economic inequalities, governments are turning to innovation to build more inclusive societies. Governments are rallying behind the Sustainable Development Goals (SGDs), finding new paths towards gender equality, and easing the transition and economic circumstances for migrants. A few are also looking for innovative ways to prepare society for the challenges of the future. There remains a long way to go and there may be some gaps in the road ahead, but inclusiveness is growing and a safety net is being strung. The world is at a juncture that challenges governments to acknowledge new realities and create new solutions for everyone through innovation.

SEVERAL THEMES HAVE BEEN OBSERVED IN THIS AREA:

Governments and organisations are innovating to meet the SDGs.

Gender equality is an uphill battle, but innovative countries are narrowing the gap.

Governments must adjust to ageing societies.

Waves of migration help solve some challenges but contribute to others.

Systems approaches are supporting the most vulnerable.

Governments need to innovate in the face of job automation.

PEACE, JUSTICE AND STRONG INSTITUTIONS

Inclusiveness and vulnerable populations

KEY RECOMMENDATIONS

1. Connect with international communities to drive united progress.

2. Ensure all members of society are considered and consulted in policy making and service delivery.

3. Begin preparing today for supporting the next generation of vulnerable populations.

CASE STUDY: **Seoul 50+ policy** – *Republic of Korea*

Seoul's 50+ policy represents an innovative convergence of social welfare, employment and life-long learning policies, geared towards addressing the needs of an ageing society. The policy addresses the needs and characteristics of citizens aged between 50-64 and enables them to remain active, work and participate in community life. As part of the 50+ Policy, the Seoul Metropolitan Government is establishing a comprehensive infrastructure with a foundation, campuses and centres across the city. In so doing, it is redefining the meaning of "work" in an era of ageing populations.

CASE STUDY: **Financial Inclusion Programme for Migrants** – *Mexico*

The Financial Inclusion Programme for Migrants is an innovative financial services initiative that provides bank accounts and other support to a unique set of migrants – Mexican citizens repatriating from the United States amid a political climate that has added a great degree of uncertainty to their lives. To help these citizens, the National Savings and Financial Services Bank (Bansefi), a development bank created by the federal government to reach vulnerable populations, has opened 11 strategically located service branches along the US-Mexico border and one at the Mexico City airport. These provide repatriating citizens with financial services and vital information.

CASE STUDY: **Asker Welfare Lab** – *Norway*

Asker Welfare Lab is a new concept for service delivery centred solely on the citizen, where all relevant municipal services together with external partners – the Investment Team – invest jointly in a person's welfare. The lab adopts an investment mind-set and treats citizens as co-investors. The aim is to raise the living standards of vulnerable individuals, thereby bettering the quality of life of each person and family in the programme. Most importantly, experts have to partner with the citizens whose lives they want to change, on the basis that "No decision about me shall be taken without me". Public sector investment is closely monitored through a new form of reporting that focuses on the realisation of outcomes.

Introduction

Governments face both unprecedented challenges and immense possibilities

The current global political and economic setting is complex and fast-changing. Society is in the midst of an incredible transformation that challenges both existing systems and views about how the world works and how it should be governed. Emerging technologies are not only disrupting the status quo, they are altering existing preconceptions and creating a future of unknowns. Ten years ago – when the iPhone first launched, Twitter was taking off and Uber did not yet exist – few could have imagined today's constantly connected and endlessly interconnected world, where the majority of the population use mobile Internet on a daily basis (see Figure 1).

This interconnectedness has accelerated the already rapid pace of globalisation, further spurring structural adjustments that demand a government response, as well a growing backlash caused by resentment to growing inequality worldwide. There is a widespread sentiment in many countries that the benefits of this connected and fast-changing world have been concentrated in too few hands. In the vast majority of advanced countries, the gap between rich and poor has reached its highest level for three decades. Today, the richest 10% of the population in the OECD area earn nearly 10 times the income of the poorest 10%, up from seven times in the 1980s. The problem is only getting worse (see Figure 2), with just eight men controlling as much wealth as the bottom half of the world (Mullany, 2017). This situation affects people's trust in institutions, and their belief in the benefits of a globalised world. At present, only 43% of citizens trust their government, and this rate is dropping (see Figure 3). There is a general belief that governments are unable to protect the best interests of their people (OECD, 2016a: 198).

Figure 1: **A constantly connected world: total daily and mobile Internet users, 2016**
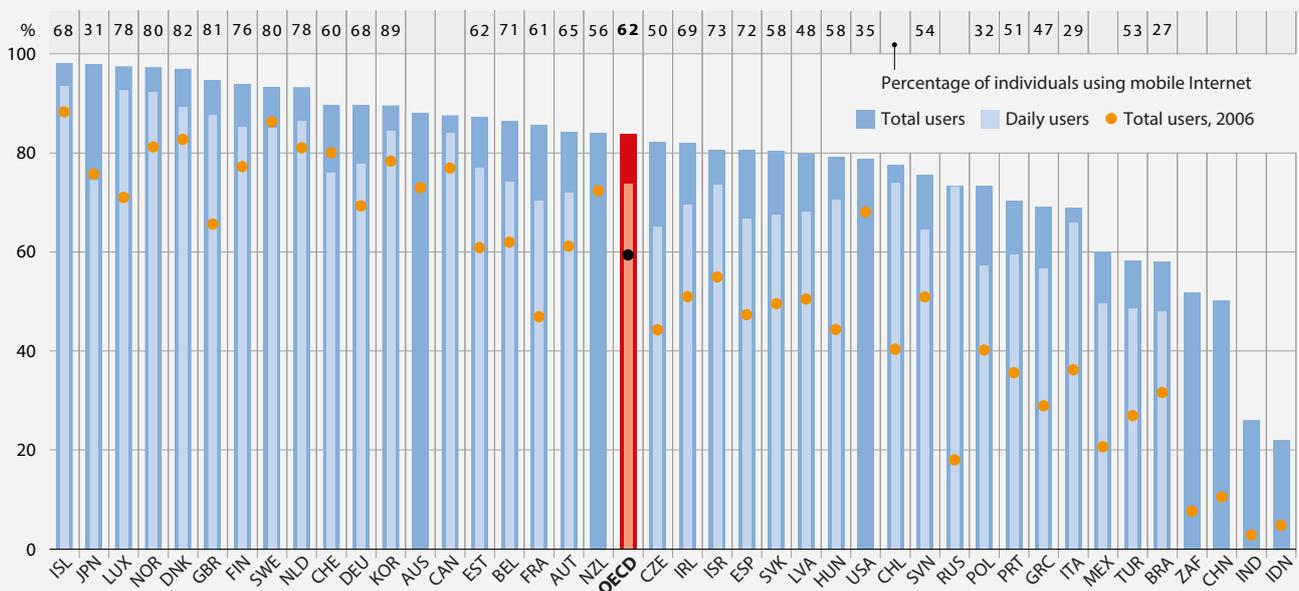
Source: OECD (2017a: 196).

Figure 2: **The rich get richer and the poor poorer**

Household incomes, OECD average
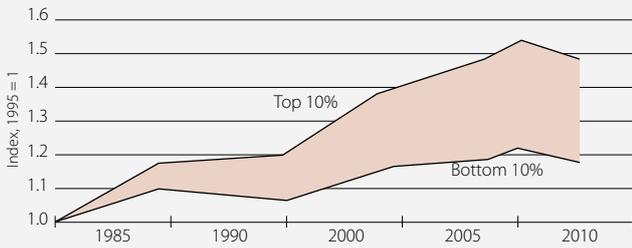
Source: OECD (2016: 66).

Waning faith in the ability of governments to manage global challenges represents a poor foundation for navigating even further waves of change. The combination of technological change and globalisation is reshaping the notion of work, human purpose and livelihoods. The OECD estimates that 10% of jobs in OECD countries are at high risk of being automated (OECD, 2016a), while the tasks of an additional 25% of the workforce will change significantly because of automation (OECD, 2016c: 57).

Figure 3: **Confidence in national government in 2016 and its change since 2007**
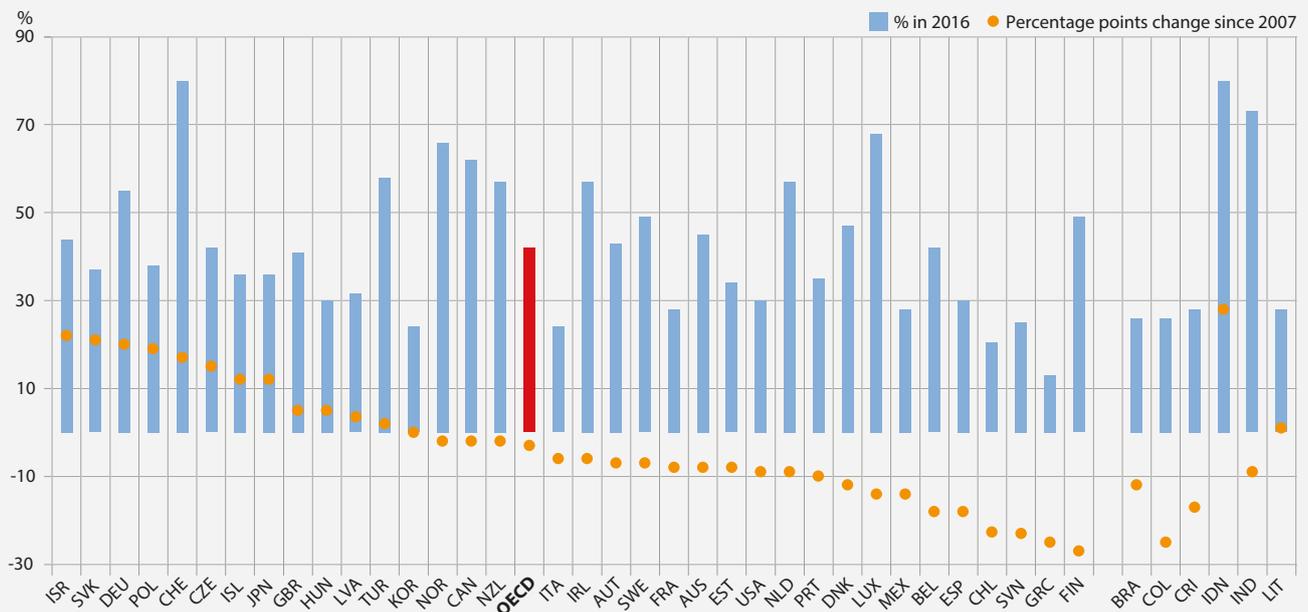
Source: Gallup World Poll.

Introduction

Major demographic shifts also feed this transformation. The current generation of young people worldwide is the largest ever; however, the proportion of young people in OECD countries has declined over the last 50 years with clear consequences for intergenerational spending on pensions, healthcare and education. Many countries are faced with an ageing population, placing increasing pressure on many government programmes and social dynamics (see the Inclusiveness and Vulnerable Populations section of this review on page 75).

Migration pressures are another compounding factor. Record numbers of people are being forced from their homes due to conflict or violence and environmental factors such as climate change, with more than 1.5 million new asylum requests registered by OECD countries in 2016 compared to the previous year.[6] This trend exerts considerable pressure on governments to adapt their public services to ensure no one is left behind.

6. See www.oecd.org/newsroom/oecd-calls-on-countries-to-step-up-integration-efforts-for-migrants-and-refugees.htm.

Given the scale of change, the magnitude of the accompanying transformation and the resulting uncertainty for the future, one thing is clear: there is no going backwards. The rate of change is accelerating at an exponential pace. There is a strong imperative for countries and individuals to question the status quo and discuss possible ways forward. New approaches are needed to ensure that everyone has the opportunity to improve their well-being in an increasingly globalised and digitalised economy. The only path to a prosperous, productive and inclusive future is to modernise, and more importantly, to innovate.

Innovation in government is about opening up new ways to positively influence the everyday lives of people, and new approaches to encourage them to become partners in shaping the future of government together. It involves overcoming old structures and modes of thinking and embracing new technologies, processes and ideas. In order to be sustainable, it must also be based on securing the public's trust, building faith in the government's ability to adeptly navigate a fast-changing world, and acting as sound stewards of their resources.

Governments are innovating to tackle these challenges and seize these possibilities

The OECD Observatory of Public Sector Innovation's (OPSI) mission is to serve as a forum for shared lessons and insights into the practice of innovation in government. Since 2014, it has worked to meet the needs of countries and cities around the world, providing a collective resource to identify, collect and analyse new ways of designing and delivering public policies and services. In a time of increasing complexity, rapidly changing demands and considerable fiscal pressures, governments need to understand, test and embed new ways of doing things. OPSI works to empower public servants with new insights, knowledge, tools and connections to help them explore new possibilities by:

● **Uncovering emerging practices and identifying what's next.** Identifying new practices at the leading edge of government, connecting those engaging in new ways of thinking and acting, and considering what these new approaches mean for the public sector.

● **Exploring how to turn the new into the normal.** Studying innovation in different public sector contexts and investigating potential frameworks and methods to unleash creativity and innovation and ways to connect them with the day-to-day work of public servants.

● **Providing trusted advice on how to foster innovation.** Sharing guidance and resources about the ways in which governments can support innovation to obtain better outcomes for their people.

To help achieve this mission and to learn from governments at the leading edge of this field, OPSI has forged a partnership with the Government of the United Arab Emirates (UAE) and its Mohammed Bin Rashid Centre for Government Innovation (MBRCGI)[7] as part of the MENA-OECD Governance Programme. The MBRCGI serves to stimulate and enrich the culture of innovation within government. Together, OPSI and the MBRCGI conducted a global review of government-led innovation to identify how governments respond to the enormous challenges of today's complex world and

to highlight recent trends and examples in public sector innovation. By identifying and sharing these trends and examples through this review and by serving as a global forum for connecting ideas and innovators around the world, the OECD and MBRCGI hope to inspire action, embed successes, reduce the impact of failure, and speed up the transformative process of innovation to deliver value for citizens at new heights and scales. OECD and the MBRCGI invite public servants interested in innovation to connect with OPSI and join a growing community of innovators to share ideas and initiatives that may help others learn, and to seek out additional information and connections related to the examples covered in this review and the over 400 innovation case studies contained on OPSI's online platform.[8]

This review is published in conjunction with the 2018 World Government Summit,[9] which brings together over 130 countries and over 4 000 government officials, thinkers, policy makers and industry experts to discuss innovative ways to solve the challenges facing humanity. One of the features of the summit is the *Edge of Government,* a series of interactive exhibits that bring innovations to life.[10] These exhibits include two of the case studies presented in this review, as discussed later. This review represents the second collaborative initiative from the partnership between OPSI and the MBRCGI.

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7. See www.mbrcgi.gov.ae.

8. See http://oe.cd/opsi. OPSI may be contacted on Twitter @OPSIgov or via email at opsi@oecd.org. OPSI publishes an innovation newsletter every two weeks (see http://bit.ly/2AFsnKb for registration and past issues).

9. See www.worldgovernmentsummit.org.

10. See https://edge.worldgovernmentsummit.org.

Introduction

It follows the 2017 report *Embracing Innovation in Government: Global Trends,*[11] which was launched at the World Government Summit 2017. Last year's review identified key trends that demonstrate leading-edge practices and the paths governments are taking to meet growing challenges and citizen expectations. It found that governments have created innovation divisions, labs and ministries (e.g. Denmark's Ministry of Public Sector Innovation),[12] as well as apps, tools and methodologies to address specific public sector challenges and engage with citizens as partners and co-creators. It also found that governments are leveraging emerging technologies to rapidly redefine the role of government and the ways in which it provides services to citizens and residents. In addition, it found that many states are reconceptualising the back-office functions of government as opportunities to develop innovative programmes and services. These trends are still highly relevant and represent the foundation for future innovation.

However, more remains to be done. Around the world, the majority of government innovation agendas are built on loosely defined concepts and inconsistent implementation strategies. Most governments do not incorporate innovation into competency frameworks that prepare civil servants to meet challenges, and close to half have not allocated dedicated funding for innovation (OECD, 2016c). Perhaps, most importantly, innovation too often occurs in pockets and silos – an age-old challenge of government – such as hubs and labs. As long as this is the case, innovation may at best burn like a series of bright matches, but will never ignite a fire across government.

This review's most significant and hopeful finding is the enthusiasm governments have for addressing these challenges and building the infrastructure needed to ignite this fire. Even if innovation and the systems and skills required to foster it are still in a process of maturation, the trends and examples contained in this review demonstrate that governments are acknowledging the need for change. Moreover, such change must transcend fragmented government structures designed for earlier times that employ tools and problem-solving methods that no longer work in the context of unprecedented complexity and uncertainty. Governments are building the enabling conditions and mechanisms that serve as foundational building blocks for innovation, and adopting innovative

solutions and approaches than can provoke cascading effects for new innovations to be built upon. Furthermore, these processes promote interconnectivity, taking a systemic approach to public sector transformation instead of viewing government as a series of discrete entities. All of this is being done with a key purpose in mind: to build a more inclusive society that ensures the well-being of all people.

Proof of this innovation can be seen in the crowdsourced Call for Innovations that OPSI and the MBRCGI conducted to identify examples of innovative practices in governments worldwide (see Figure 5).[13]

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13. See http://oe.cd/2017callforinnovations.

Figure 4: Trends identified through this review

Key trends in public innovation identified through this review

Figure 5: Call for innovations results
Run from July 25, 2017 through September 22, 2017
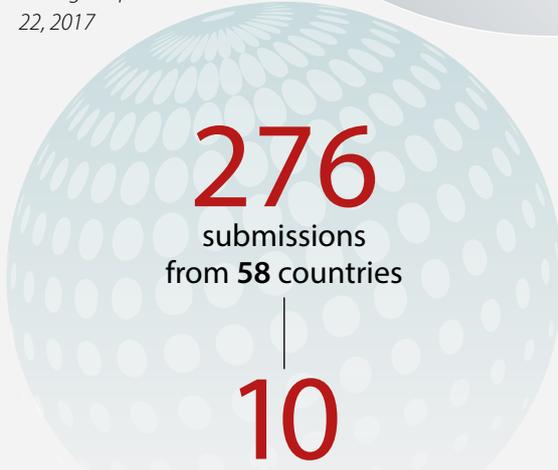
276
submissions from **58** countries

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11. See http://oe.cd/eig.

12. See https://uk.fm.dk/about-us/minister-for-public-innovation.

Through its recent research and the Call for Innovations, OPSI has identified three key trends in public sector innovation that build upon trends identified last year and catalyse innovation in a cross-cutting, interconnected manner (see Figure 4). These three trends form the structure of this review. Each respective section includes a discussion of innovative initiatives by governments and their partners, real-world examples of the trend in action, and recommendations to help countries unlock innovation. The trends focus on:

Identity

An identity is a fundamental requirement for individuals and businesses to access government services and participate in society and the economy, and for governments to help unlock the potential of new innovative services. Governments and their partners are innovating to conceive of new ways to provide identities to individuals and businesses through emerging technologies. They are also helping citizens demonstrate the unique combination of knowledge, skills and experiences that make up their own personal identities. In an interconnected and increasingly borderless world, they are also questioning traditional conceptions of national identity and pushing the boundaries of what it means to be a citizen and resident.

Systems approaches and enablers

Governments are using innovation to lead a paradigm shift in the way they provide government services. The most innovative approaches refrain from layering one reform on top of another, instead repacking them in ways that allow them to get to the real purpose of the underlying change. Systems approaches step back and view the entire operation of government as an interconnected system rather than disparate pieces. They transform and re-align the underlying processes and methods to change the way government works in a cross-cutting way, while involving all of the affected actors both inside and outside government. In so doing, they leverage a number of tools and enabling conditions to succeed.

Inclusiveness and vulnerable populations

In the face of major cross-cutting challenges such as migration, ageing population crises, uncertainties about the future of work and job automation, and continued gender and economic inequalities, governments are turning to innovation to build more inclusive societies. Governments are rallying behind the Sustainable Development Goals (SGDs), finding new paths towards gender equality, and easing the transition and economic circumstances for migrants. A few are also looking for innovative ways to prepare society for the challenges of job automation and the future of work. There remains a long way to go and there may be some gaps in the road ahead, but inclusiveness is growing and a safety net is being strung. The world is at a juncture that challenges governments to acknowledge new realities and create new solutions for everyone through innovation.

Trend 1:
Identity

Every citizen, resident and business needs to have an identity to access government services and participate in society and the economy. While this seems simple, the process is often complicated and in many contexts can be controversial. Governments are conceiving of new ways of providing identities to individuals though biometrics and emerging technologies such as blockchain. They are also helping businesses make better decisions about their brand identities in an increasingly competitive marketplace, and helping citizens demonstrate the unique combination of knowledge, skills and experiences that make up their own personal identities. In the modern interconnected world, governments and individuals are also raising questions about national identity and re-imagining what it means to be a citizen in an increasingly borderless world. Government innovators are exploring these many aspects of identity and pursuing initiatives that serve as essential building blocks of innovation.

DIGITAL IDENTITIES HAVE BECOME THE FOUNDATION OF DIGITAL ECONOMIES

As all sectors of the economy digitise, it becomes increasingly critical for users of digital services to have a digital identity in order to access accounts and services. Such identities have existed in the private sector since the early days of the Internet, with users easily logging into services to access email, social media networks and bank accounts. In many ways, the provision of digital identities transformed the purpose and function of the Internet. The evolution of the Web from a publishing medium to an interactive platform for the delivery of personal services made possible electronic commerce, electronic government, and many other rich and diverse online interactions, from electronic learning to social networks and the broader participative Web. The possibility for individuals to establish a personalised interaction with, and be recognised by, a remote computer has ushered in two decades of innovation, making Internet services pervasive, ubiquitous and increasingly essential in everyday life. It has transformed economies and societies, and served as a core building block for the modern economy (OECD, 2011).

Figure 6: **Log-in page for *The New York Times* using Facebook and Google digital identities**

Source: https://newyorktimes.com

Figure 7: **Individuals using the Internet for sending filled forms via public authorities' websites in the past 12 months, 2006 and 2016**
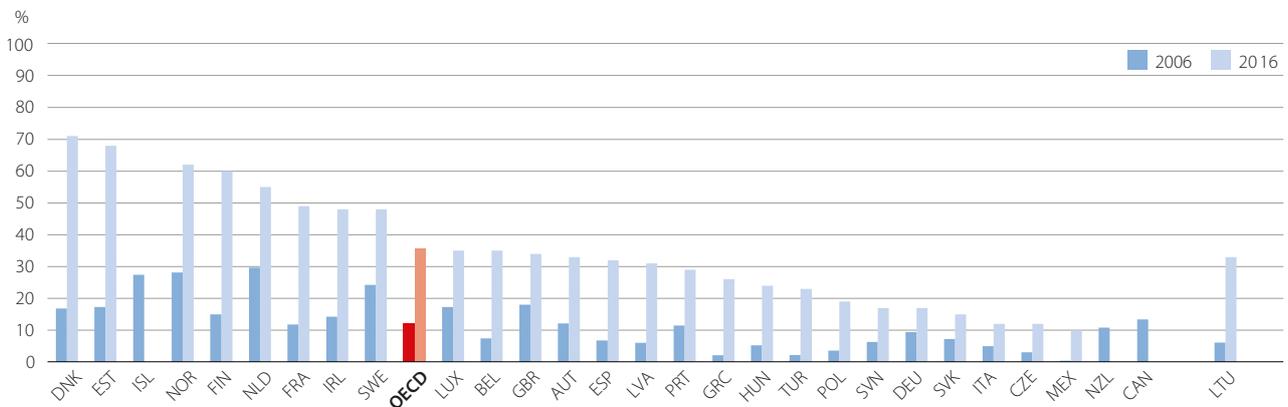
Source: OECD (2017b: 205).

Figure 8: **Individuals not submitting official forms online due to privacy and security concerns, 2016**

As a percentage of individuals having chosen not to submit online
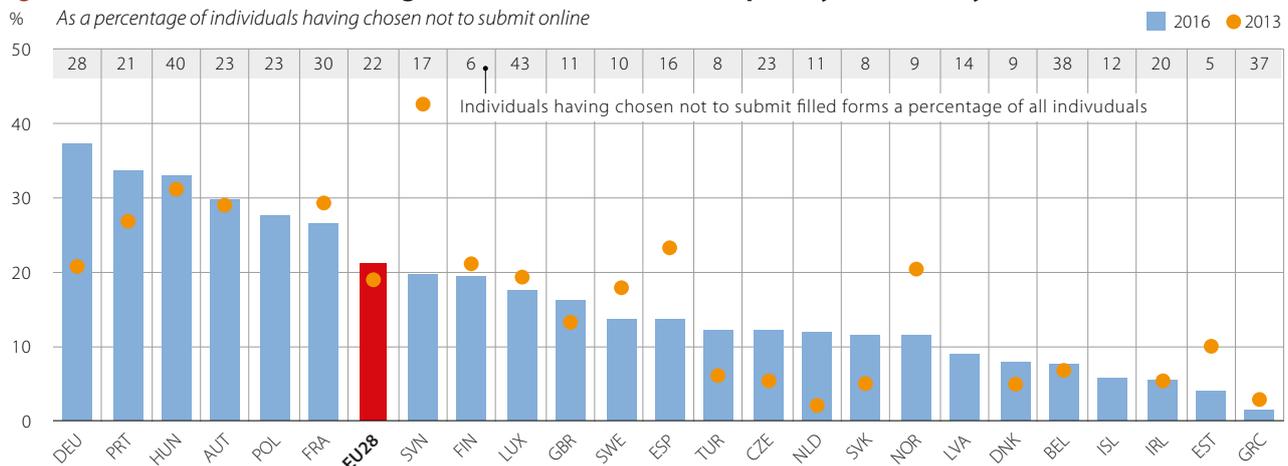
Source: OECD (2017a: 203).

In recent years, federated digital identities have provided a means to link an individual's digital identity across multiple platforms and systems (e.g. Google, Facebook, Twitter and GitHub) through a single sign-on (see Figure 6). The public sector has experienced some success in providing digital users access to specific services, or even all services provided by a single department; however, it has faced challenges in building a more federated model to provide citizens and other users with a single identity that can be used across digital and even non-digital services. The current siloed approach that exists in most governments, which requires individuals to create and manage a digital identity for each online service or offering and involves multiple databases containing sensitive information, is not sustainable. It increases the risk of data breaches and identity theft and reduces willingness to engage online. As shown in Figure 7, citizens' usage of governments' digital services has increased significantly in recent years, but remains fairly low in most countries. A significant factor in this regard is users' privacy and security concerns (Figure 8). Secure, private digital identity management is fundamental for the further development of digital economies.

Trend 1: Identity

Electronic authentication provides a level of assurance that someone or something is who or what it claims to be in a digital environment. It plays a key role in establishing trust for digital commerce, digital government and many other social interactions. It also constitutes an essential component of any strategy to protect information systems and networks, financial data, personal information and other assets from unauthorised access or identity theft. Electronic authentication is therefore essential for establishing accountability online. The Recommendation states, among other things, that countries should:

● establish technology-neutral approaches for domestic and cross-border digital authentication of persons and entities;

● foster the use of digital authentication products, services and safeguards;

● encourage interoperable authentication methods for cross-sector and cross-border interactions; and

● ensure privacy and security of user data.

*A "Recommendation" is a legal instrument which, although not legally binding, is considered by member countries to carry great moral force. OECD Recommendations are adopted when member countries are prepared to make the political commitment necessary to implement the principles set out in the text. This type of instrument is often referred to as "soft law".

Source: OECD (2007).

Accordingly, the OECD issued a formal Recommendation on Electronic Authentication (see Box 1), which countries are acting to implement, for example, through the United Kingdom's Identity Assurance Principles.[14]

COUNTRIES ARE ROLLING OUT NEW IDENTITY PROGRAMMES

By 2021, an estimated 3.6 billion citizens will hold a national digital ID card (Acuity Market Intelligence, 2017). A growing number of countries already have fully functioning and successful national digital identity programmes in place. Estonia, for example, is the perennial success story of an advanced digital government underpinned by secure and reliable digital identities for all citizens. The country's "X-Road" data-exchange network

and connected biometric national ID card allows its citizens and residents to conduct virtually all government and even private sector transactions online using their ID card and a PIN. Such transactions include voting, banking, filing taxes, and accessing health records and prescriptions (Eggers, 2016). However, Estonia's situation is unique in that its population of 1.3 million is proportionate to a few large tech companies.[15] This allows Estonia to serve as a testbed of innovation and experimentation, from which the world can learn. Estonia's identification scheme now serves as a platform for numerous other ground-breaking and innovative initiatives, as discussed later.

No other country has reached the level of digital identity sophistication set by Estonia, though many are innovating to unlock the promise of digital governments to meet the growing expectations of their people. These innovative countries have made great strides in the last few years in developing national digital identity programmes. Many of the most recent innovations have come from countries facing challenges related to larger populations and cultural resistance to any type of national identity card. This has necessitated innovation in its own right to develop a solution that is acceptable to the population.

● In March 2016, the Agency for Digital Italy (AgID) launched "Sistema Pubblico per la gestione dell'Identità Digitale" (SPID), a digital identity solution that enables users to access government digital services (e.g. view health records and pay school fees) through a single sign-on. Their digital identities are issued by private sector identity providers. SPID is compliant with the European Union's eIDAS regulation (see Box 2), which will make it interoperable with other national identity programmes that meet the same standard as they come online.[16]

● In April 2017, the United States Digital Service (USDS) and 18F launched Login.gov, a single sign-on solution for government websites that enables citizens to access public services across agencies using the same username and password (and two-factor authentication via mobile phones or an authenticator application). At present, Login.gov allows users access to just a handful

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14. See https://identityassurance.blog.gov.uk/2015/09/11/gov-uk-verify-identity-assurance-principles.

15. For example, the global employee counts of Amazon (541 900 as of 2017), IBM (380 000 as of 2016) and Samsung (308 745 as of 2016) total 1.23 million employees (Cakebread, 2017; IBM, 2016; Samsung, 2016).

16. AgID submission to the OECD Call for Innovations crowdsourcing exercise, 29 August 2017.

of services, but this is expected to change in the near future as the roll out continues, replacing hundreds of individual logins. All data are end-to-end encrypted and are not shared with partner agencies unless the user gives explicit permission (Minton and Mills, 2017). The code and support documentation for the platform are available online as open source, allowing other countries to learn from and potentially even adapt the technology for their own purposes.[17]

● In May 2016, The United Kingdom Government Digital Service (GDS) launched GOV.UK Verify, an online solution that allows people to create a digital identity in order to access digital services (e.g. pay their taxes or access social benefits). In order to create a trustworthy digital identity, a user provides evidence such as a passport and bank and mobile phone account data to a certified company, which then verifies their identity against different trustworthy public and private sector sources. The process takes 5-15 minutes. To ensure security, the data are not stored centrally and there is no unnecessary sharing of information. According to the United Kingdom, "A citizen will be able to use their digital identity across their full digital life without their actions being tracked or profiled."[18] An independent group of privacy advocates has been set up to provide advice to the government on the development of the service. The initiative is the first of its kind in the world, according to the United Kingdom (GOV.UK, 2017). In 2018, the service will be rolled out to the private sector.

● In October 2017, the Australian Government launched a beta version of Govpass, a digital single sign-on programme that seeks to replace over 30 different logins for all digital services. To verify themselves, a user provides details from a number of personal documents (e.g. a birth certificate or driver's license), which are then verified by the government document issuer. Users also upload a photo which is submitted for comparison with existing photo IDs. All submitted data and photos are deleted after verification is complete. The service will be rolled out more broadly in 2018 (Hitchcock, 2017). The Australian government has recognised digital identity as the most important of all the key digital priorities (Easton, 2017).

More countries are planning to follow suit. For example, Singapore views the upcoming launch of a new national identity as a strategic priority and a "prerequisite" to the digital economy (Rohaidi, 2017). In another highly novel example, China will begin allowing WeChat[19] users to use the app as their national ID. In the initial pilot in the city of Guangzhou, limited functionality using the WeChat ID will be accessible through facial recognition alone, with full functionality granted after a user visits an offline station to physically validate their paper ID cards (Wildau, 2017). It is increasingly clear that countries are accelerating efforts to provide digital identities to their citizens, often in innovative ways, through multiple different arrangement mechanisms that fit the unique needs of their countries. In 2017, all EU countries signed the Tallinn Declaration on eGovernment, which formalises these commitments (see Box 3). For these countries, the Digital Single Market

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17. See https://github.com/18F?utf8=%E2%9C%93&q=identity.

18. UK Cabinet submission to the OECD Call for Innovations crowdsourcing exercise, 22 September 2017.

19. WeChat is a messaging and calling app that allows users to connect with others. It is often considered to be an all-in-one communications app for text, image and video messages; voice and video calls; photo sharing, games and sending payments. See https://play.google.com/store/apps/details?id=com.tencent.mm.

is one of the main priorities of the European Commission, contributing considerably to economic resilience and growth. To ensure its success, electronic identification and guarantees regarding privacy are essential. Citizens and businesses must be given assurances that treatment of their data respects existing data protection legislation.

This enhanced focus on innovative identity programmes will likely have significant positive spill-over effects for the private sector, especially as the Tallinn Declaration commits countries to enabling private sector use of government digital identities, in order to build services useful to citizens. While many private services provide various levels of assurance for their digital identities, governments are generally the primary issuers of the most trustworthy credentials for individuals' identity attributes (OECD, 2011). This high level of confidence in users' identities may open doors to services and transactions not presently conceived.

THE LATEST DEVELOPMENTS ARE IN BIOMETRICS AND BLOCKCHAIN, BUT CAN RAISE PRIVACY CONCERNS
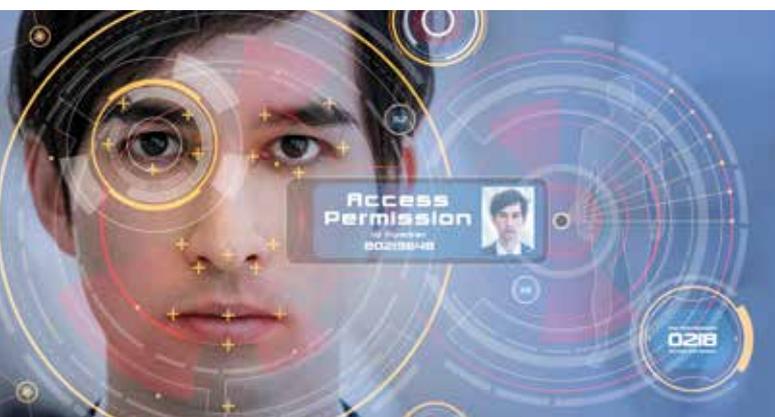
BIOMETRICS
Biometrics involves the use of automated tools to identify an individual through physical characteristics, such as fingerprints, iris scans or face recognition.[20] Many people use biometrics multiple times a day, for example, by unlocking their Apple iPhone with their fingerprint or through facial recognition (Glaser, 2016). In the public sector, biometric government identities are not a recent innovation, with Malaysia issuing the first biometric passport 10 years ago.[21] However, biometric IDs are now being applied in new ways and used at an unprecedented scale, with a corresponding escalation in controversy and resistance among some opponents. Over 120 countries

are now deploying biometric passports and over 50 are implementing biometric eID cards.[22] Biometric eIDs contain a photo of the cardholder and some form of bio-identification, most usually fingerprints, and can be used for the purposes of highly accurate identification.

The benefits of biometric identities are undeniable. Identity confirmation can be determined with a high level of accuracy, thereby minimising identity theft and replacing the need for "face-to-face" validation. When compared to current practices which usually involving passwords and PINs, biometrics cannot be easily defrauded by others (Glaser, 2016). In government, they can dramatically reduce beneficiary fraud, make digital interactions seamless, enable electronic signatures, and allow for simpler interactions for both government and businesses, thereby making it easier to create innovative programmes and services (Singh, 2017). They are rapidly becoming a standard for accessing services because of their efficiency, effectiveness and security of access.[23]

However, biometric IDs have also sparked fierce controversy. Opponents of biometric identities argue that they could be used to monitor and track individuals, leading to lack of privacy, and take away citizens' ability to control data about themselves.[24] With biometric IDs, a detailed profile of an individual can be used to infer current situations and predict future behaviours in a manner not possible with traditional methods of identity. While this may offer user convenience and benefits to organisations in terms of innovative new services, changes in the nature of digital identity will introduce policy concerns if not implemented in a sufficiently secure and privacy-respecting manner that allows the citizen to own their personal data and control how it is used. Some opponents fear that biometric identities and the data collected, if not carefully protected and controlled by the citizen, may result in individuals becoming trapped in the profiles created for them. Under such a scenario, an individual born into an impoverished family or who makes mistakes early in life may never be able to escape the ramifications of these circumstances. They could become mired in a cycle of disadvantage and find themselves consistently treated negatively by businesses and government agencies as a result of their

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20. See www.rand.org/natsec_area/products/biometrics.html.

21. See http://passport.com.my/biometric_passports.htm.

22. See www.gemalto.com/govt/identity/2016-national-id-card-trends.

23. See www.rand.org/natsec_area/products/biometrics.html.

24. See www.rand.org/natsec_area/products/biometrics.html.

profile. Interestingly, recent research indicates that robust democracies are less likely to adopt strong biometric identity programmes and are more likely to have privacy and data protections laws (Venkataramakrishnan, 2017).

In addition to privacy concerns, there are legitimate concerns about information security. Recent years have seen major hacks and data breaches of personally identifiable information (PII) in both the private and public sectors. Notable examples include a data breach at credit reporting company Equifax that disclosed sensitive data on 143 million US consumers,[25] and a data breach at the US Office of Personnel Management (OPM) that resulted in the disclosure of critically sensitive information for over 21.5 million records, including detailed security-clearance background information and fingerprints of 5.6 million public employees.[26] The real-world consequences of a massive leak of biometric information, such as the fingerprints compromised in the OPM hack, are not fully known. Discussion of biometric information in this review is not intended to endorse or promote its use, but instead to demonstrate its innovative potential as well as the challenging questions and trade-offs governments must address in today's digital world.

A strong example of the innovative application of biometric identity, as well as the potential for associated controversy and backlash, is the Government of India's Aadhaar (meaning "foundation") programme, launched in 2009. Aadhaar has grown to become the largest biometric initiative on Earth and centres on databases of names, addresses, phone numbers, fingerprints, photos and iris scans of 1.2 billion Indians, representing a staggering 15% of the global population. Its introduction is provoking debates about privacy and surveillance that are novel in their own right. With a population of over 1.3 billion,[27] India is poised to overtake China as the most populous country in the world in the next seven years (Rukmini, 2017). The government must handle identity-related issues on a massive scale and is seeking to remedy numerous problems by assigning a uniform identity to every individual in the country. A full case study on Aadhaar is presented later in this section.

25. See www.oecd.org/going-digital/oecd-digital-economy-outlook-paris-2017.htm.

26. See www.opm.gov/news/releases/2015/09/cyber-statement-923.

27. Custom data taken from the World Population Prospects 2017 website (https://esa.un.org/unpd/wpp/DataQuery) and https://en.wikipedia.org/wiki/United_Nations_Department_of_Economic_and_Social_Affairs.
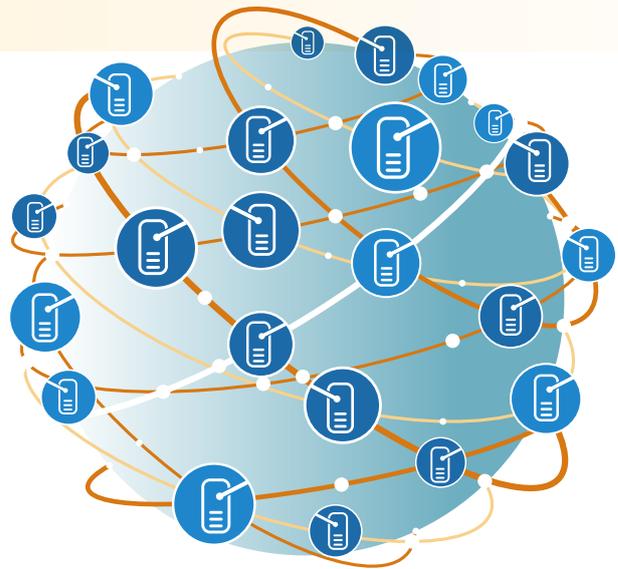
BLOCKCHAIN

The most novel types of emerging identity programmes involve the use of blockchain (see Box 4).

Box 4: **WHAT IS BLOCKCHAIN?**

Blockchain has been a frequent topic of discussion in recent years, yet its technical complexity can make it difficult to describe or understand. According to the World Economic Forum, "currently, most people use a trusted middleman such as a bank to make a transaction. But blockchain allows consumers and suppliers to connect directly, removing the need for a third party".

By using cryptography to keep exchanges secure, blockchain provides a decentralised database, or "digital ledger", of transactions visible to everyone on the network. This network is essentially a chain of computers that must all approve an exchange before it can be verified and recorded. The network of computers is the "chain" and the verified transaction is referred to as the "block". Once verified, the block transaction is added permanently and cannot be altered.

Blockchain is most commonly associated with Bitcoin, a digital "cryptocurrency" that has attained record-breaking values in recent months, reaching a peak value of nearly USD 20 000 per bitcoin and a total value over USD 326 billion in December 2017, (Rosenfeld and Cheng, 2017) and fluctuating dramatically thereafter. However, blockchain has potential uses far beyond digital currency, including government-issued credentials and identities.

Source: www.weforum.org/agenda/2016/06/blockchain-explained-simply/, https://gsa.github.io/emerging-technology-atlas, https://blockchain.info/charts/market-cap.

Trend 1: Identity

Relevant to this review's section on inclusiveness and vulnerable populations (see page 75) is the innovative blockchain identity project ID2020.[28] ID2020 is a public-private partnership between United Nations agencies, private sector companies such as Microsoft and Accenture, and foundations such as the Rockefeller Foundation. ID2020 has the potential to make a profound impact on the public sector as well as the 1.1 billion people in the world who live without an officially recognised identity, including many refugees. The lack of an officially recognised identity severely limits people's access to education, healthcare, voting, banking and housing options, among many other things.[29] It also renders them more vulnerable to risks of exploitation, such as human trafficking.[30] ID2020 aims to tackle these challenges by providing these individuals with an identity through a platform based on blockchain and built on open standards and an interoperable application programme interface (API).[31] They are currently experimenting with a functional prototype.[32] Biometrics will also be incorporated through the use of fingerprints and iris scans.[33] It is of paramount importance to ID2020 that the identities for individuals are user-owned, and that the platform enables users to have direct control over who has access to their data and when it is shared.[34]

"This could be the greatest poverty killer app we've ever seen."
Jim Yong Kim, *President of the World Bank*

The ID2020 initiative is founded on the belief that the present convergence of trends provides an unprecedented opportunity to achieve the goal of universal digital identity (see Figure 9) through co-ordinated, concerted efforts. ID2020's philosophy is grounded in the UN's Universal Declaration of Human Rights (UDHR), which states that "everyone has the right to recognition everywhere as a person before the law"[35] and Sustainable Development

Goal (SDG) 16.9 (see Box 5).[36] The initiative is being executed through the ID2020 Alliance, a network of non-governmental organisations (NGOs) and companies working together to co-ordinate funding, and also build standards and innovative technology solution responsive to the needs of countries and individuals, and incorporate innovative technologies. The initiative plans to introduce a safe and verifiable identity system by 2030. In the short term, the goals are to experiment and test different technology solutions and partner with governments and organisations for early implementation.

> **Box 5: SUSTAINABLE DEVELOPMENT GOAL 16.9**
>
> *"By 2030, provide legal identity for all, including birth registration."*
> Source: https://sustainabledevelopment.un.org/sdg16
>
> Making Everyone Count — Identification for Development

Figure 9: **Enabling trends for ID2020**

Growing political willpower: SDG target to "provide legal identity for all" by 2030

Rising global connectivity: Rapid proliferation of smart devices, broadband and computing power

Emerging technologies: Blockchain working alongside long-proven biometrics

Global calls for a new identity model: User experience demands, regulations for security, and privacy and user-owned data

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28. See http://id2020.org.

29. See https://newsroom.accenture.com/news/accenture-microsoft-create-blockchain-solution-to-support-id2020.htm.

30. See https://static1.squarespace.com/static/578015396a4963f7d4413498/t/596e5d636a49635fe12cf40b/1500405109983/ID2020+Alliance+Governance.

31. A fuller explanation of APIs can be found on page 63.

32. See https://static1.squarespace.com/static/578015396a4963f7d4413498/t/596e5d636a49635fe12cf40b/1500405109983/ID2020+Alliance+Governance.

33. See https://newsroom.accenture.com/news/accenture-microsoft-create-blockchain-solution-to-support-id2020.htm.

34. See https://static1.squarespace.com/static/578015396a4963f7d4413498/t/596e64b037c581db7dcc748a/1500406962140/ID2020_2017SummitHighlights.pdf.

35. See www.un.org/en/universal-declaration-human-rights.

36. See the *Inclusiveness and Vulnerable Populations* section of this review on page 75 for more information on SDGs.

Also in the development arena, the company "AID:Tech"[37] has been launched to leverage blockchain to provide digital delivery of benefits via a digital identity. AID:Tech has already been piloted to deliver international aid to Syrian refugees in Lebanon. Working alongside the International Federation of Red Cross and Red Crescent Societies (IFRC), the company delivered identity in the form of 500 smart cards to 100 Syrian families (see Figure 10). Each smart card contains records of aid entitlement, which beneficiaries are able to redeem at local merchants (see Figure 11). In the pilot, all provisions were successfully redeemed, and all attempts at fraud were caught and stopped at the point of sale. AID:Tech's core goal is to achieve social and financial impacts for the world's under-served by combining identity and emerging technology. There are currently around 2 billion people in the world without access to a bank account. Their lack of access to formal social and financial services are direct inhibitors to development. In addition, 1.1 trillion is lost every year from developing countries due to theft and fraud. AID:Tech believes their solutions, in partnership with governments and other organisations, can help solve these problems.[38]

Figure 10: AID:Tech identity card and app

Figure 11: Use of AID:Tech digital identity to deliver benefits

Source: AID:Tech submission to OECD Call for Innovations. Submitted on 31 August 2017.

These blockchain identity programmes are still in their infancy. However, blockchain is considered by some to be as revolutionary as the Internet itself. OPSI will be tracking future development in this space, and expects significant innovation in this area in the near future.

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37. See https://aid.technology.

38. AID:Tech submission to the OECD Call for Innovations crowdsourcing exercise, 31 August 2017.

OPEN STANDARDS CAN HELP INDIVIDUALS EXPRESS THEIR UNIQUE IDENTITIES

Identity is not just a matter of providing an individual with a formal credential. It can also be a question of allowing individuals to express the unique aspects of their selves and the experiences that make them who they are, and to recognise these aspects in others. For example, "Be Badges" is an innovative application of Mozilla's Open Badges platform by the government of Belgium, which allows users to provide others with virtual badges that communicate skills and achievements of interest in the job market. This concept has recently been expanded to ESCO Badges, which syncs up with the European Unions' new ESCO classification of skills and competences. A full case study on innovative uses of open badges for public good can be found on page 33.

TECHNOLOGY IS ENABLING BETTER DECISIONS IN BUSINESS IDENTITY

Government's role in the identity space extends beyond the provision of identity credentials for individuals. Governments are also involved in facilitating the development of private sector identities through recognising and registering brands and trademarks to help their businesses succeed in a global marketplace. There are approximately 31.5 million trademarks in force globally and about 8.5 million trademark applications per year. Thus, millions of existing brand identities must be considered before a business can finalise a trademark representing who they are. This is no simple task for governments, but one of the Call for Innovations case studies examined for this review has created an innovative new technology to give businesses a new edge. In February 2017, IP Australia, the Australian Government agency that administers intellectual property (IP) rights, launched the Australian Trade Mark Search to help companies make informed decisions around their branding and business identity strategies. Australian Trade Mark Search combines world-leading image recognition and artificial intelligence (AI) to power a search engine of company identities, including branding, logos and other trademarks to help companies distinguish their brand identity from others. Its goal is to provide a platform that allow members of the public to search for brand identities using only an image, such as a drawing or digital sketch. A full case study on this initiative can be found on page 37.

INNOVATION IS SPURRING NEW DISCUSSIONS ABOUT NATIONAL AND INDIVIDUAL IDENTITY

As technology continues to enhance global interconnectivity, national borders become less relevant. A 2016 survey from the BBC World Service shows that, for the first time, nearly half (49%) of the 20 000 people surveyed across 14 countries see themselves more as global citizens than citizens of their own country. A 2016 World Economic Forum survey of 26 000 participants from 181 countries also found that 36% of young people (ages 18-35) defined themselves as global citizens (Dai, 2016).

People worldwide are now more mobile than ever before. Individuals may live in one country and work in another, shop across borders or move permanently to a new home abroad (see Figure 12).

Individuals are not the only ones to question the role for country borders. Estonia, the aforementioned testbed of government innovation, is on the way to transforming itself into a "country without borders" (MoEAC, 2016), and has launched several innovative initiatives that re-imagine traditional thinking around identity and national boundaries.

The Government of Estonia has implemented "e-Residency", a transnational digital identity available to anyone interested in running an online global EU-based company from anywhere in the world, regardless of their nationality or place of residence. This flagship initiative aims to create a new borderless digital society for global citizens, allowing individuals to become virtual e-residents via a secure digital ID card that will enable them to establish a company within a day, apply for a digital bank account and credit card, conduct e-banking, digitally sign documents and contracts, and declare taxes. The Estonian government launched the e-Residency programme to

Figure 12: **Individuals participating in globalisation**

429m international travellers

361m cross-border
e-commerce shoppers

240m
people living
outside home
country

914m
social networking
users with at least one
foreign connection

44m
cross-border online workers

13m
cross-border
online students

5m
students
studying abroad
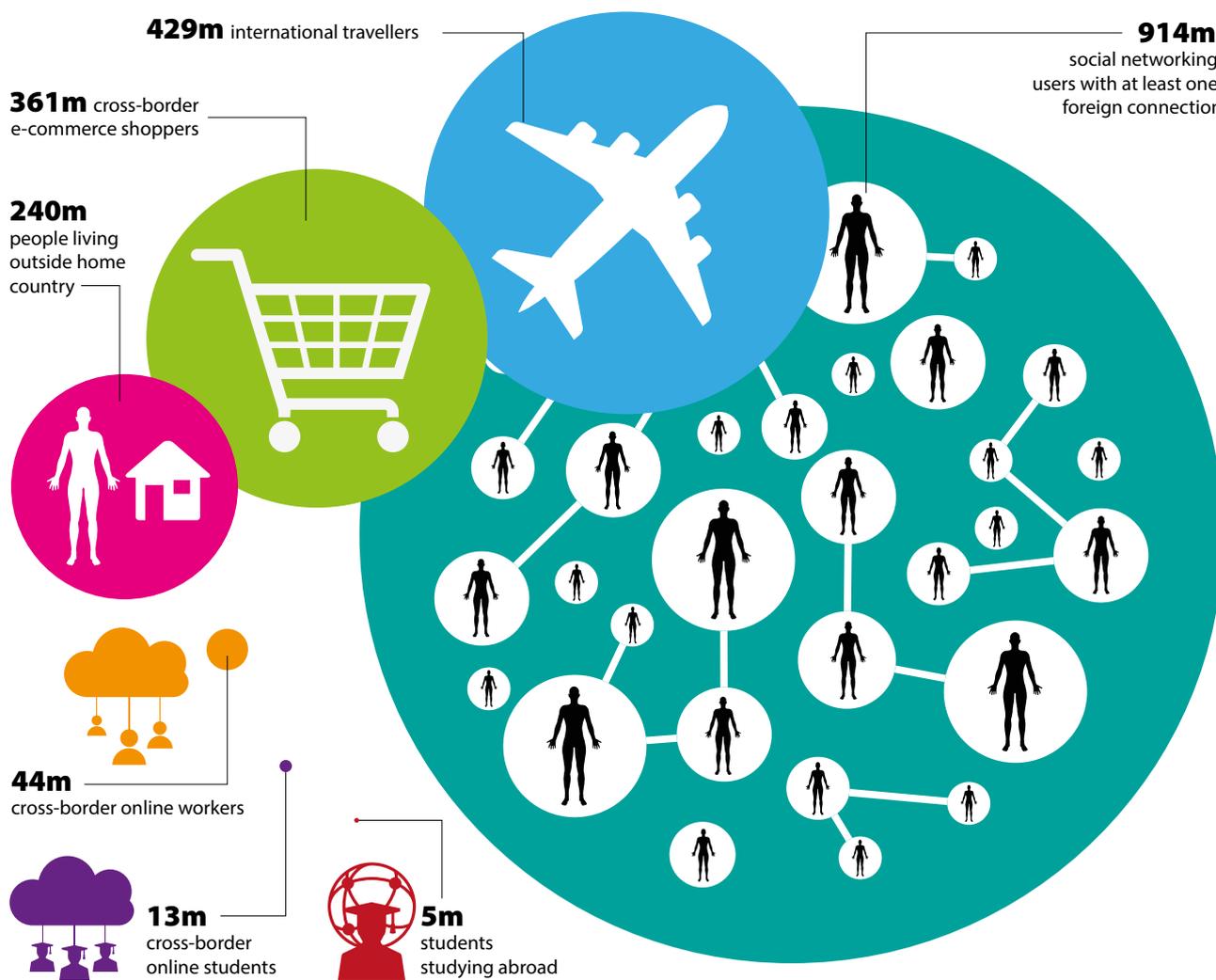
make Estonia bigger by building a digital population and help unleash the world's entrepreneurial potential.[39] The e-Residency programme just celebrated its third anniversary, and has amassed nearly 30 000 e-residents from 151 countries around the world who have set up nearly 3 000 businesses (Korjus, 2017).[40] Estonia's goal is to attract 10 million e-residents to add to the country's population of 1.3 million physical residents by 2025. The initiative has been very successful financially – every EUR 1 invested in the programme is projected to return EUR 100 to the Estonian economy through taxes and wages, according to a study by Deloitte.[41] Other countries

are taking notice and starting to replicate the model. Azerbaijan has launched a similar programme, and a number of other countries are exploring the possibility (Korjus, 2017).

In addition to e-Residency, Estonia is developing the world's first Data Embassy to help address a challenge that has arisen from the country's efforts to be digital-only and paperless: how to ensure the digital continuity of the country by securing its data against risks of cyber-attack or major disaster. The Data Embassy consists of servers held in other countries but under the full legal jurisdiction of Estonia. These store constantly updated data that would allow the state and its services to continue in the event of a catastrophe (in-depth coverage of Estonia's Data Embassy can be found in the case study on page 42.

39. Government of Estonia submission to the OECD Call for Innovations crowdsourcing exercise, 30 August 2017.

40. A real-time dashboard of e-resident applications can be found at https://app.cyfe.com/dashboards/195223/5587fe4e52036102283711615553.

41. See http://news.err.ee/646254/deloitte-e-residency-brought-14-4-million-to-estonia-in-first-three-years.

Recommendations

Providing digital identities that enable citizens to authenticate themselves in order to conduct trusted transactions is a foundational step in creating modern and innovative government services and moving towards a digital economy and society. Helping people to make these virtual identities more reflective of their personalities and achievements, to the extent they see fit, can also open doors to new possibilities. Businesses too can benefit by crafting their own unique identities, and governments can help by providing new tools to help them succeed in the new economies. Governments are also benefiting from today's interconnected world by re-thinking traditional concepts of borders and identity. To maximise the potential for identity-related programmes, OPSI recommends that governments:

1. Develop identity solutions that fit with the culture of the country. Countries are looking at identity programmes through a variety of lenses. What works for one country may not work for another. Governments must appreciate the cultural realities of their countries to determine the best approach for the creation and use of identity programmes. For example, the United Kingdom created a biometric national identity programme in 2008 and issued identity cards to thousands of people, but the programme was scrapped in 2010 as constituting a "substantial erosion of civil liberties" (Kirk, 2010). Through its GOV.UK Verify programme, discussed earlier, the country is now building identity solutions more suitable for a country that conceptualises and values privacy in this way. All countries can and should build digital identity programmes that unlock digital services from government and the private sector. However, there is no single best approach to creating a digital identity programmes. Each country will need to identify an approach that best reflects their national values.

2. Make trade-offs clearly understandable by the population. Even when following the principles in the previous recommendation, governments will always need to make trade-offs when developing an identity solution. Transparent public consultations are essential to determine and communicate these trade-offs to their citizens and residents.

3. Think beyond traditional concepts of identity. There are many aspects of personal, business and even national identity. Governments should consider ways to help ensure their citizens and residents are able to express and leverage all facets of their identity, and recognise the same in others. For example, in Belgium the launch of Be Badges is adding new vectors to the labour market. As the world becomes more connected, national borders may continue to lose some aspects of their relevance. Countries should not fear this development, but instead consider the potential impact and explore and even embrace the opportunities that may result.

4. Use open standards and application programming interfaces (APIs) to unlock potential. Identity can be seen as a unique set of characteristics that makes up an individual, business, or nation. However, identity can also be seen as a platform for connecting people and building trust-based exchanges and relationships in a modern economy. The use of open standards and interfaces, such as the Open Badges standard in Be Badges, and open APIs, such as in Aadhaar, enables the creation of new services, with identity as the foundation, that have the potential to catalyse innovation at a scale not yet imaginable.

CASE STUDY

Aadhaar – India

Aadhaar – meaning "foundation" in several Indian languages – is the largest biometric identity programme in the world. Since its launch in 2009, Aadhaar has enrolled nearly 1.2 billion Indian citizens and residents (about 15% of the global population), including over 99% of all Indian adults. Each Aadhaar recipient receives a unique 12-digit ID number, and submits their photo and their biometric data in the form of fingerprints and iris scans. Originally designed to help mitigate fraud, waste and abuse in social benefit programmes by ensuring benefits went to the right person, the initiative has grown to encompass many parts of everyday life in India, such as bank transactions and activating a mobile phone. Use of Aadhaar is mandatory for a growing number of these programmes. As the programme has grown, so has the controversy surrounding it, including a landmark November 2017 Indian Supreme Court ruling that for the first time recognised privacy as a fundamental human right, which may have implications for the future of Aadhaar. As far as digital identities are concerned, all eyes are on India.

Trend 1: Identity

THE PROBLEM

India had major problems in identifying beneficiaries for social programmes. A significant proportion of residents lacked formal identity credentials, and many of those who had credentials possessed ones that were only recognised locally. Inadequate identity records and verification processes meant that government agencies frequently distributed social welfare benefits to the same people multiple times, or to people who did not qualify. Prior to Aadhaar, it was estimated that 58% of subsidised food grains and 38% of subsidised kerosene disbursed under government programmes did not reach their intended beneficiaries (Government of India, 2005). This resulted in tremendous waste of resources. Such issues also affected other social programmes including scholarships, healthcare, pensions and subsidised household goods. Significantly, some eligible households were denied social assistance for which they qualified because they could not easily prove their identity.

AN INNOVATIVE SOLUTION

To overcome these problems, the Indian government launched Aadhaar – an ambitious programme intended to provide every man, woman and child living in India with a unique digital identity based on their biometric information (thumbprints and iris scans). Unique identification through this biometric information makes it simpler for authorities to verify that subsidised goods are delivered to the right recipients and limits the scope of fraudulent activities.

The initial target of Aadhaar was the country's Public Distribution System (PDS), a government-subsidised programme designed to enhance food security and serve as a safety net for the 330 million Indians who are nutritionally at risk. The food is distributed at over 500 000 "fair price shops", making it the largest distribution network of its type in the world. The primary challenge for the government has been widespread pilferage and diversion of food grains meant for low-income beneficiaries. Prior to the introduction of Aadhaar, pilferage could occur in a number of ways:

- Sales records were manually recorded, making it impossible to know whether a sale actually took place, whether food was fraudulently diverted by FPS staff, or whether the staff overcharged for provisions.

- Individuals would secure bogus rations cards by creating fictitious families.

- Individuals would use genuine rations cards stolen or purchased from someone else.

By enabling end-to-end digitisation of distribution and sales processes, Aadhaar helps eliminate these issues. Diversion during transport and delivery to fair price shops is mitigated through Aadhaar-enabled automatic weighing of the rations, which is tied directly to the current handler's Aadhaar identity.[42] If the weight is not accurate, the transfer of goods cannot take place and the identity of the handler is known. To mitigate abuse at the beneficiary end, each fair price shop is equipped with digital point-of-sale devices used by shop employees to authenticate beneficiaries using their fingerprints or iris scans (see Figure 13). The device links to the Aadhaar database via a mobile, Wi-Fi or cabled internet connection, and then verifies the beneficiary's identity and eligibility. When payment is required, the benefits are paid for using cashless payments through Aadhaar, so no money physically changes hands, which prevents overcharging of customers. The rations are also weighed to ensure the appropriate amount is given to the beneficiary (see Figure 14). A shop is unable to dispense benefits to individuals who are not eligible or who have already received their ration, or if the weight is incorrect. In some states, disabled beneficiaries are authenticated and the rations provided directly to the home, while in other states, a relative or neighbour can be designated to collect the rations. Finally, Aadhaar has made the process more efficient by allowing the government to determine the inventories of each FPS in real-time, so they can replenish just the right amount of inventory when required. This mitigates the possibility of shops operating black markets using excess stock, as was frequently the case in the past.

In addition to reducing fraud in PDS, Aadhaar's streamlined and automated system means that beneficiaries:

- Receive SMS messages to alert them to the existence of new supplies, rather than having to physically check the shop repeatedly.

- Can view a map of all stores and their current inventory level via a mobile app.

- Authenticate their identity instantly to collect their benefits, reducing in-store wait times from half a day to a matter of minutes.

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42. When supplies change hands from one person to another (e.g. when a deliverer drops off supplies at a fair price shop), both the deliverer and recipient must authenticate simultaneously to validate the transaction, which also involves an automated weighting. This ensures clear lines of accountability without the potential for either party to divert supplies.

Figure 13: Obtaining rice using fingerprints

Figure 14: Weighing rice at a fair price shop

● Select the shop where they prefer to receive their benefits. A central database manages the benefits and permits authentication of a beneficiary at any location, thereby promoting choice and mobility.

In addition to social services such as PDS, Aadhaar also now encompasses over 3 500 government and non-government services in India, ranging from opening bank accounts to making digital payments, enrolling in school, activating a mobile phone, receiving pension payments, filing taxes, voting and making e-signatures.[43,44] The government has also launched DigiLocker,[45] a platform for issuing, sharing and verifying documents and certificates, in an effort to move towards a paperless society.

Government officials believe that the full potential of Aadhaar is not yet apparent,[46] and that the next wave of innovation will come from the private sector with businesses using Aadhaar as a platform. The system includes an open application programming interface (API), which allows the programme to serve as a platform for private sector companies to build services using Aadhaar identity management as a foundation, which has the potential to enable a whole ecosystem of apps. For example, Google's Tez app allows people to send instant digital payments to friends, relatives and businesses. Tez gained 7.5 million users in its first five weeks, drastically increasing the number of Aadhaar transactions (see Figure 15) (Pahwa, 2017). Given the open nature of its interface, the architect of Aadhaar believes that in the future people will use Aadhaar in ways that are unimaginable today (Mirchandani, 2017).

43. See https://economictimes.indiatimes.com/tdmc/your-money/7-benefits-of-aadhaar-card/tomorrowmakersshow/58412087.cms.

44. See http://etaal.gov.in/etaal/auth/Login.aspx.

45. See https://digilocker.gov.in.

46. Interviews with J. Sathyanarayana, Indian Administrative Service (IAS), Chairman of the Unique Identification Authority of India (UIDAI) and Advisor to the Chief Minister of Andhra Pradesh, and Ajay Sawhney, IAS, Secretary to the Government of India for the Ministry of Electronics and Information Technology, 12 December 2017.

Figure 15: **Count of Aadhaar transactions**

July 1st–September 30th 2017 in millions
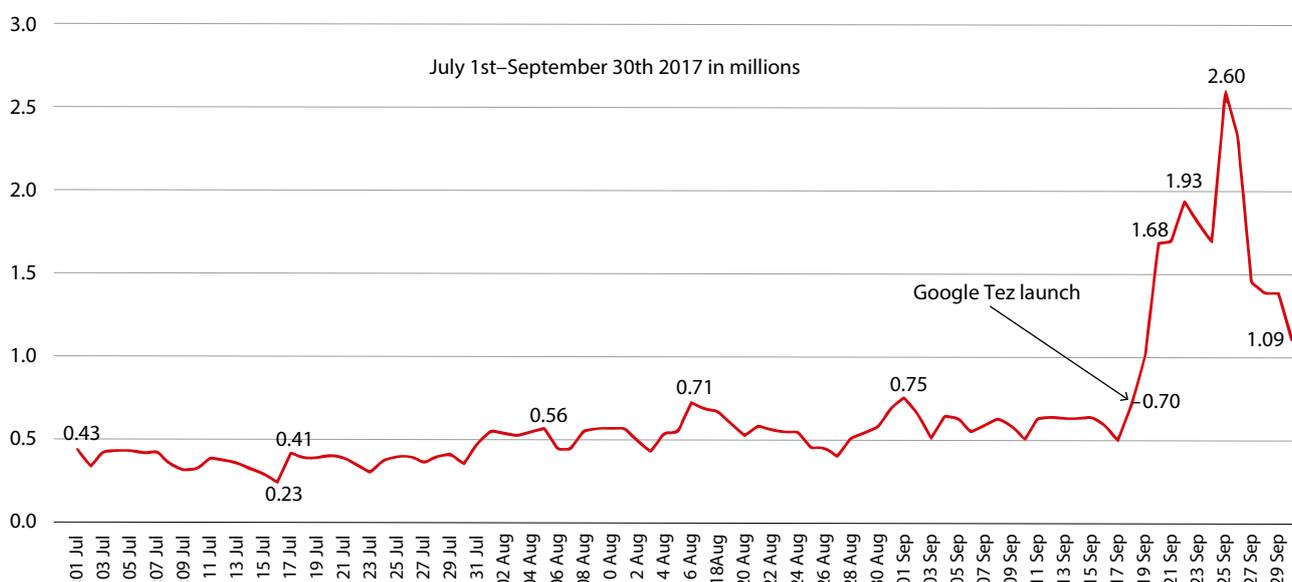
Source: National Payments Corporation of India (NPCI) via Reserve Bank of India (RBI); Pahwa (2017).

Undoubtedly, Aadhaar has been as controversial as it has been innovative. As more services become integrated through Aadhaar, it becomes possible to piece together data to create a detailed profile of an individual. Over time, such profiles could even be used to predict future behaviours in ways impossible with traditional methods of identity. Privacy advocates argue that this can limit social mobility, as people could be trapped by their class, past actions or any associated stigma. Some also argue this could constitute a step towards a surveillance state, or misuse by the private sector, as businesses continue to enable Aadhaar authentication on their services (Kolachalam, 2017). Some also raise security concerns about the potential for privacy leaks or hacks of the Aadhaar database, which could potentially result in fraudulent use of an individual's identity. This concern is not without merit, as sensitive Aadhaar data have already been breached on several occasions. In July 2017, the names, addresses, Aadhaar numbers and bank account details of 1.4 million pensioners were accidentally leaked by a state Social Security office (Sethi, Bansal and Roy, 2017). Most recently, Indian newspaper The Tribune reported that they were able to purchase access to Aadhaar details for every registered Aadhaar number – including names, addresses, postal codes, phone numbers and email addresses (but not biometrics) – from anonymous sellers on WhatsApp. The transaction took 10 minutes and cost EUR 7. For an additional EUR 4, the newspaper was able to obtain software that would allow them to print their own Aadhaar cards with

the obtained information (Khaira, 2018). The source of the stolen information was one of tens of thousands of private Aadhaar registration providers licensed to process new Aadhaar registrations, who thus had access to the Aadhaar database (*The Economist,* 2018). The government responded by giving users the ability to generate and use virtual IDs instead of their Aadhaar number. This extra layer of privacy can help mask the identities of users even if their data is compromised (Singhl, 2018). They also restricted the number of Aadhaar registration providers with access to the Aadhaar database (*The Economist,* 2018). However, it is too early to determine the extent to which these actions will address security concerns.

In interviews with the OECD, senior officials in the Indian government countered privacy and security concerns, stating that Aadhaar data operations are founded on three core principles:

1. *Minimal data:* the government collects only the data needed to prove identity. Other information, such as race, religion, education and profession, are not collected.

2. *Optimal ignorance:* although the Aadhaar database authenticates individuals, no data are sent to the government regarding the usage of the Aadhaar account. This limits the ability of the government to accumulate data on an individual's habits. In addition, no information from the Aadhaar database is shared

with a service provider. The Aadhaar system only provides the servicer with a yes or no (authenticated or not). Finally, by law, anyone who collects Aadhaar data is mandated to use them only for the purpose for which they are needed. Even if a large business has many different Aadhaar-enabled services, they cannot share Aadhaar data among themselves without the consent of the identity holder.

3. *Federated databases:* all services that use Aadhaar (e.g. PDS, scholarships, pensions, businesses) maintain their own database containing the data of relevance to them. This lack of centralisation protects privacy by helping to prevent data from multiple sources being combined to enable profiling. It also protects security, as there is no central knowledge base, and thus no central host for attacks or leaks.[47] In addition, informed consent by the Aadhaar identity owner is required for one service to share information with another.

Officials further stated that the need for physical biometrics to authenticate a user largely precludes the possibility of fraudulent transactions in the event of a data breach. To further mitigate privacy and security risks, the government has assembled a data protection committee comprising privacy and security experts, headed by a former member of the Supreme Court. This committee can make recommendations on policy and legislation to ensure the protection of privacy and security going forward. One of their first acts was to develop a data protection framework, which is currently in draft form.[48] Government leaders expect the framework to be launched in the first half of 2018.[49]

In spite of the above core principles, the controversies surrounding Aadhaar have played out in the Indian judicial system. In August 2017, in response to a case brought about by a series of petitions by privacy advocates challenging the constitutionality of Aadhaar, the Indian Supreme Court unanimously issued a landmark ruling that the constitution of India provides that all Indians have a fundamental right to privacy (see Box 6). In so doing, the court overruled two

previous rulings.[50] While this judgement has set a major new precedent for Indian society, it makes no formal ruling on whether Aadhaar violates privacy. However, it clears the way for a future court hearing to proceed, using this new precedent as an argument (Mirchandani, 2017).[51] According to the Aadhaar CEO,[52] and the original architect of Aadhaar (Mirchandani, 2017), this should have no bearing on the programme, as the system is premised on the belief that there is a right to privacy and is said to collect minimal data. The ruling also provides that, under certain instances, such as social welfare and public safety, the government can circumscribe this right, although this would need to be tested on a case-by-case basis. It is not clear what the ruling could mean for the future of Aadhaar, but numerous parties, from proponents of biometric and national identities to privacy advocates, are watching closely.

Box 6: **SUPREME COURT RULING ON THE RIGHT TO PRIVACY**

"The right to privacy is an element of human dignity. The sanctity of privacy lies in its functional relationship with dignity. Privacy ensures that a human being can lead a life of dignity by securing the inner recesses of the human personality from unwanted intrusion. Privacy recognises the autonomy of the individual and the right of every person to make essential choices which affect the course of life. In doing so privacy recognises that living a life of dignity is essential for a human being to fulfil the liberties and freedoms which are the cornerstone of the Constitution."

Source: www.countercurrents.org/2017/08/24/right-to-privacy-judgement-highlights-and-full-judgement.

NOVELTY

Aadhaar is the largest identity programme ever created and has resulted in the biggest repository of biometric data in existence. The scale of its current system and the potential for its use as a platform is unprecedented.

RESULTS AND IMPACT

In just a few years, Aadhaar has given almost 1.2 billion Indians a nationally recognised identity that unlocks a wide variety of government and private sector services.

47. Interview with Ajay Bhushan Pandey, CEO of the Unique Identification Authority of India (UIDAI) and Secretary for IT, 11 December 2017.

48. See http://meity.gov.in/writereaddata/files/white_paper_on_data_protection_in_india_171127_final_v2.pdf.

49. Interviews with J. Sathyanarayana, Indian Administrative Service (IAS), Chairman of the Unique Identification Authority of India (UIDAI) and Advisor to the Chief Minister of Andhra Pradesh, and Ajay Sawhney, IAS, Secretary to the Government of India for the Ministry of Electronics and Information Technology, 12 December 2017.

50. See http://indianexpress.com/article/india/right-to-privacy-judgment-a-fundamental-right-here-are-the-two-judgments-supreme-court-overruled-4811117/ for information on the two previous rulings.

51. See https://thewire.in/170700/right-to-privacy-aadhaar-supreme-court.

52. Interview with Ajay Bhushan Pandey, CEO of the Unique Identification Authority of India (UIDAI), 11 December 2017.

Connection of services to Aadhaar is completely changing sectors across India. Over USD 12 billion in financial transactions have taken place (Mirchandani, 2017), and over a billion bank accounts and mobile phones have been linked to Aadhaar.[53]

Aadhaar has also simplified and made more efficient many processes, resulting in better services for citizens and residents and significant cost-savings for the government. By mitigating fraud and abuse, the initiative has saved the government an estimated USD 10 billion over the last 2.5 years, according to the Aadhaar CEO.[54] Pilferage of food benefits, for example, has been drastically reduced.[55]

New data also show that Aadhaar has promoted financial inclusiveness and gender equity. The Centre for Global Development conducted a survey of Aadhaar users in the state of Rajasthan to learn more about their experience (Gelb et al., 2017).[56] It found that nearly all households now have at least one bank account, and a significant proportion of them are held by women. Before the introduction of Aadhaar, only 44% of women had bank accounts; this proportion has now grown to 90%. It also found that women tend to do the most banking for the family.

Aadhaar has fundamentally changed bargaining power from supplier to consumer, according to Nandan Nilekani, the original architect of Aadhaar and the cofounder of the major tech company InfoSys (Mirchandani, 2017). For PDS alone, customer wait times have fallen from hours to minutes. Enhanced mobility allows customers to receive their rations at any shop they like. If a shop provides bad service, keeps irregular hours or tries to scam customers (e.g. overcharging or putting stones in the rice to manipulate weighing), customers have the ability to vote with their feet and go instead to another of the many shops. The government tracks usage data and shuts down underperforming shops, thus providing them with an incentive for good customer service.

The function and functionality of Aadhaar has had a perceptible influence on citizens' trust in their government and each other, according to Aadhaar government officials. Receiving their payments and benefits on time and knowing that the government is protecting them against corruption and diversion helps to increase citizens' trust in government (Mirchandani, 2017). It increases trust among communities, as beneficiaries no longer fear that others may take what is rightfully theirs. It also increases trust among servicers and businesses in clients and users, as their visibility means they cannot defraud them. For example, Aadhaar helps to increase banks' trust in clients, increasing the likelihood that they will lend to them. According to the Aadhaar CEO, the Aadhaar identity and the trust it inspires will help to unleash the full potential of each Indian,[57] although critics may not agree.

The results and impact of Aadhaar are poised to expand beyond the borders of India. Despite the ongoing controversies, over 20 other countries are interested in potentially implementing similar identity programmes and the underlying technology, according to reports (Jayadevan, 2018).

USER PERSPECTIVE
Feedback on Aadhaar-enabled services, such as PDS and pensions, was generally positive in the Centre for Global Development survey. Most respondents found that Aadhaar services were at least as good as the previous systems, with many stating they were better and only a few believing they were worse. Users generally found the services to be faster and more convenient, and appreciated that no one else could steal goods meant for them. There were some challenges, however, with 25% of users reporting having to authenticate three or four times before being accepted by the system, and some saying that the system has not worked for them at all (Gelb et al., 2017).

CHALLENGES AND LESSONS LEARNED
Aadhaar's main challenges stem from the privacy and security concerns of people and advocacy groups. Strong political support on the part of the Congress and the Prime Minister, as well as the Finance Ministry, was crucial to the success of Aadhaar in terms of programme implementation and subsequent interactions. Collaboration across many divisions and levels of government has also been critical, according to the original Aadhaar architect (Mirchandani, 2017).

53. Interviews with J. Sathyanarayana, Indian Administrative Service (IAS), Chairman of the Unique Identification Authority of India (UIDAI) and Advisor to the Chief Minister of Andhra Pradesh, and Ajay Sawhney, IAS, Secretary to the Government of India for the Ministry of Electronics and Information Technology, 12 December 2017

54. Interview with Ajay Bhushan Pandey, CEO of the Unique Identification Authority of India (UIDAI) , 11 December 2017.

55. Interview with Guru Prasad, National Informatics Centre, India, 12 December 2017.

56. The survey interviewed 633 households from both urban and rural areas, with a mix of incomes and land-owning statuses. Sixty-three percent of the respondents were women.

57. Interview with Ajay Bhushan Pandey, CEO of the Unique Identification Authority of India (UIDAI), 11 December 2017.

CASE STUDY

Be Badges – Belgium

People learn and develop throughout their entire lives. Whether in school, training, careers or their personal lives, individuals continue to grow and acquire new competencies and skills. However, there are few options for people to highlight and showcase these skills beyond formal credentials, such as diplomas and certificates, or unverified and non-detailed feedback, such as LinkedIn endorsements. In 2016, the Belgian federal agency Selor[58] launched Be Badges,[59] a Digital Platform where employers, schools and training centres can formally recognise skills and experiences earned by individuals. Badge-earners can share these skills digitally with others and the labour market, and prospective employers and recruitment agencies can access the platform to find new skilled employees.

58. Selor was a separate agency of the Belgian federal government responsible, among other things, for the recruitment of public servants at all levels of government (federal, regional and local). Its name was a portmanteau of Selection and Orientation. The entity was recently incorporated as part of the Government of Belgium's Directorate-General Recruitment and Development and no longer exists as a separate agency.

59. See www.bebadges.be.

THE PROBLEM

Job seekers often face numerous discouraging challenges in their paths towards new employment. These include taking many similar and time-consuming tests covering the same essential information. Conversely, employers spend a significant amount of resources on developing such tests to help ensure the skilled candidates they select meet their needs. In addition, tests or systems of recognition have historically tended to favour formal degrees and diplomas at the expense of soft skills or skills acquired through non-academic settings.

AN INNOVATIVE SOLUTION

Be Badges is a digital platform where training centres, employing companies and hiring agencies can award digital badges – visual representations of a soft or hard skill – to people they have trained, employed and tested (see Figure 16). It is built on the Open Badges philosophy and standard initiated by the Mozilla Foundation in 2011.[60] Open Badges are "verifiable, portable digital badges with embedded metadata about skills and achievements" and serve as a form of "open recognition".[61]

The aim of the platform is to enable badge-holders to obtain formal recognition of informal learning and skills obtained. The badges serve as proof that the badge-holder has demonstrated or developed certain skills. They can be earned through processes such as completion of a training programme or passing a test. They can also be awarded for the successful completion of projects, which may be ignored by typical credentials and forms of certification.[62]

Only organisations verified by the Be Badges team may issue Be Badges.[63] Badge-issuing organisations provide a thorough description of the skills involved in the awarding of a badge. Each badge contains digital information that confirms the value of this

recognition, the skills the individual demonstrated, how they were tested and the criteria met. This information empowers badge-holders to promote their verified skills on the job market, including through online resumes, websites and social media accounts such as LinkedIn. Employers can also access the Be Badges platform to identify potential candidates with the skills profile they need. Be Badges enable users to obtain recognition for their skills, as well as the job they deserve.[64] The platform also enables badge-holders to monitor the number of times a badge has been viewed.[65]

Figure 16: **Three parties involved in Be Badges**

ISSUERS
Companies that assess the presence of competencies and/or experiences of candidates (training centres, employing companies, hiring agencies, etc.).

EARNERS
People who have demonstrated certain competencies and receive a badge for this purpose.

DISPLAYERS
Organisations that encounter an earner's badge (e.g. on a job application or via social media). The display can view the badge and accompanying information and act accordingly (e.g. recruiting and hiring).

Source: Be Badges team.

Selor has extensive experience in evaluating job candidates, as it screens up to 100 000 public service candidates per year. Only 2-3% of these candidates get a job; however, there are many others who were screened positively but were not selected. Selor wanted to enable these candidates to bring their positive screening

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60. See https://openbadges.org.

61. See https://openbadges.org/get-started.

62. See https://youtu.be/jlYUuwwy3v4.

63. See www.bebadges.be/how-does-it-work.

64. See https://youtu.be/jlYUuwwy3v4.

65. See www.bebadges.be/how-does-it-work.

Figure 17: **Summer of Code Meetup** *Source*: Be Badges team.

results to other employers so they would not have to be tested again for the presence of identical or similar competencies. With Be Badges, Selor wants to look further than only formal degrees and education and, by doing so, find a new answer to challenges of talent and job mobility, waste of talent, employability, and talent mismatch.

Since its inception, Be Badges has been an ongoing open source community effort. Open meetups are organised to engage with all interested parties from both public and private organisations, as well as individual users. Participants collaborate through an open meetup group[66] and an open Slack channel.[67] Participants and users are considered to be codevelopers and partners helping to spread open badges.

Over 3 000 organisations around the world are now using Open Badges (the open standard upon on which Be Badges are built) to build talent and recognise achievement. The system is constructed around an open standard that enables Open Badges to be interoperable and shared across the Internet. Badge-holders can combine badges from numerous badge issuers to provide a complete picture of their experience and achievements.[68] Selor actively supports the Open Badges community in spreading this standard, not only as outcomes of learning experiences, but also as an entry point to labour markets and the building blocks of a digital curriculum vitae (CV) or resume. As part of this

community, Selor works with, learns from and helps to inform different organisations working on Open Badges worldwide, sharing knowledge and expertise in the spirit of open innovation and the open source philosophy. Because Open Badges represent an interoperable open standard, badge recipients can collect other types of badges not provided by Be Badges in "digital backpacks" to further illustrate other elements of their identity.

Selor is already scaling the idea beyond the Belgian labour market. In 2017, Selor co-initiated, together with the Belgian Digital Transformation Office,[69] Jobpunt Vlaanderen[70] and Cognizone,[71] an Open Knowledge Summer of Code[72] project to build a tool linking Open Badges to the newly launched European Skills/Competences, Qualifications and Occupations (ESCO) multilingual taxonomy of the European Commission (see Figure 17).[73] The resulting product, ESCO Badges, is now available online as an open-source beta platform.[74] By linking badges to the new ESCO taxonomy, ESCO Badges make it easier for displayers to correctly assess the exact skill represented by the badge via the principle of linked open data.[75]

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66. See www.meetup.com/Belgian-Open-Badges-Meetup.

67. See http://bebadges.herokuapp.com. Slack (slack.com) is a digital collaborative workspace. A Slack channel is a conversation space where discussions can be organised around any topic.

68. See https://openbadges.org/get-started.

69. See https://bosa.belgium.be/en/dg-digital-transformation.

70. See www.jobpunt.be.

71. See www.cogni.zone.

72. See http://2017.summerofcode.be.

73. See https://ec.europa.eu/esco/portal/home. Part of the Europe 2020 Strategy, ESCO identifies and categorises skills, competences, qualifications and occupations relevant for the EU labour market and education and training. It facilitates dialogue between the labour market and the education/training sector by providing a common language that could help overcome labour market imbalances and increase occupational and geographical mobility in the European Union.

74. See http://escobadges.eu.

75. See Figure 18 for a photo of the Be Badges and ESCO Badges team presenting their work at a conference.

NOVELTY

Be Badges represent a unique form of innovation worldwide, both in terms of government usage of Open Badges and the application of Open Badges in the labour market, according to Selor.

RESULTS AND IMPACT

Even though Be Badges, and the associated ESCO Badges, programmes are fairly new, they have already ushered in significant progress in Belgium. The City of Ghent, Belgium's second-largest municipality, conducted a pilot, together with Jobpunt Vlaaderen, allowing some candidates with sufficient Be Badge qualifications to bypass the initial selection phase and pass directly to a second stage of hiring. Be Badges have also been incorporated into pilots at Belgian educational institutions and universities, such as Odisee, one of the largest educational institutions in Flanders, Belgium.[76]

Over time, Be Badges and ESCO Badges could have the ability to promote "open recognition". This allows individuals to be recognised for all aspects of their identity, not just those listed on a certificate. This has the potential to unlock new types of motivations in individuals, and to build a more diverse and inclusive job market.

USER PERSPECTIVE

At present, little information from the users' point of view is available. Programme leadership has indicated that implementation and use of the programme is relatively recent and that a more significant focus on user perspectives is underway as the team iterates the original products.

CHALLENGES AND LESSONS LEARNED

Within government, it proved somewhat challenging to get people to accept the notion of undertaking the work involved in a transparent, open manner, for example, through open meetup groups and on open online platforms. Some people believed that time spent on open channels was not the core business of government. However, this initial reluctance fell away as it became evident that working in the open enhanced the product and service in ways that would have been impossible in a closed system.

Another challenge consisted of explaining the standards and benefits of open badges to a non-technical audience. However, production of a short video[77] that walks interested individuals through the product and benefits proved a highly effective means of convincing people of the merits of the programme and familiarising them with the underlying concepts.

A lingering challenge that Be Badges and ESCO Badges teams face is building acceptance of badges in the job market. This challenge will require constant work and must be addressed through continuous and clear communication on the benefit of the programme, highlighting success stories over time from the perspectives of issuers and badge-holders.

76. See www.bebadges.be/single-post/2017/01/25/What-if-LinkedIn-endorsements-would-have-real-value.

77. See https://youtu.be/jlYUuwwy3v4.

Figure 18: **Conference presentation of Be Badges and ESCO Badges** *Source*: Be Badges team.

CASE STUDY

Australian Government
IP Australia

Australian Trade Mark Search – Australia

Over 87% of a company's value is rooted in its intangible assets, including brands and trademarks that represent the identity of a business (Stathis, 2015). A good trademark is a way of identifying a unique product or service in the marketplace. It distinguishes a company's brand identity from others in the same or a similar industry. This initial step is a critical foundation upon which the rest of the business is built. However, the steps to ensure the uniqueness of a company's brand are difficult and time consuming. IP Australia, the government agency that administers intellectual property (IP) rights in Australia, has launched Australian Trade Mark Search[78] to help businesses thrive in a global economy.[79] Powered by industry partner TrademarkVision's revolutionary image recognition and AI technology, the solution provides security for businesses by protecting their most important assets and has significant global applicability.

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78. See https://search.ipaustralia.gov.au/trademarks/search.
79. See https://youtu.be/CKzx0mKt9PU for a demo video.

THE PROBLEM

The value of brand identities continues to grow internationally. In 1975, it was estimated that 80% of the value of top companies were tangible assets. In 2016, the situation has reversed with more than 87% of the value of top companies consisting of intangible assets – including brand identity (Stathis, 2015). There are approximately 31.5 million trademarks in force globally and at least 8.5 million trademark applications per year. There are over 70 000 applications per year in Australia alone, ranging from individuals or small businesses interested in registering their first trademark through to multi-national corporations. If a business applies for a trademark that is too similar to an existing trademark, it is rejected. This can result in loss of time and money for the applicant, especially if they have already entered the marketplace. If a business does not apply for a trademark, they may miss the opportunity to secure their most valuable asset.

Millions of trademarks must be considered before a new businesses or product can enter the market. Searching trademarks allows businesses worldwide to make informed decisions around their branding strategies. Moreover, an effective trademark search conducted before entering the market can provide invaluable business insights that have cascading effects for the future of the business. Having a system in place that enables members of the public to search trademarks is therefore vital. Australia has had the ability to search electronically for trademarks since the 1990s, but the system was highly complex, requiring words to search visual elements in an existing database of brand identities. IP Australia has a unique glossary of over 3 500 English word terms describing visual elements of trademarks. Previously, this was the only way to search visual elements (see Figure 19).

Novice users found the process nearly impossible and even specially trained experts expressed frustration at the complexities involved. For many, the use of text-based searches to locate images similar in visual appearance was inherently difficult. It could also lead to lack of awareness among businesses of existing trademarks similar to their own, which could result in expensive rebranding processes or potential lawsuits.

AN INNOVATIVE SOLUTION

To help Australian businesses launch as early as possible with a successful brand identity strategy, IP Australia decided to rethink their approach by adopting industry-leading practices and pushing the boundaries of trademark search systems. They assembled a small, multi-disciplinary team (see Figure 23) and empowered them to work innovatively. In February 2017, they launched the Australian Trade Mark Search. The new system leverages revolutionary combined image searching and machine-learning technology to drastically simplify trademark searching and break down barriers for users. Instead of using text descriptions to search for brand identities, users can upload a logo and instantaneously search IP Australia's database of 400 000 images, which then returns trademark results based on visual similarity through image recognition. The process renders image searches more achievable for businesses, both in Australia and globally, not least because it is language independent, an important factor in the global market (see Figures 20 and 21). It also helps to increase the quality of trademark applications in Australia, delivering greater economic benefits to Australian business. As a result, fewer businesses will file applications for trademarks similar or the same as previously registered trademarks, and can have greater confidence in the applications they file.

Figure 19: Previous trademark search using words

Source: IP Australia.

Figure 20: **Australian Trade Mark Search by image**
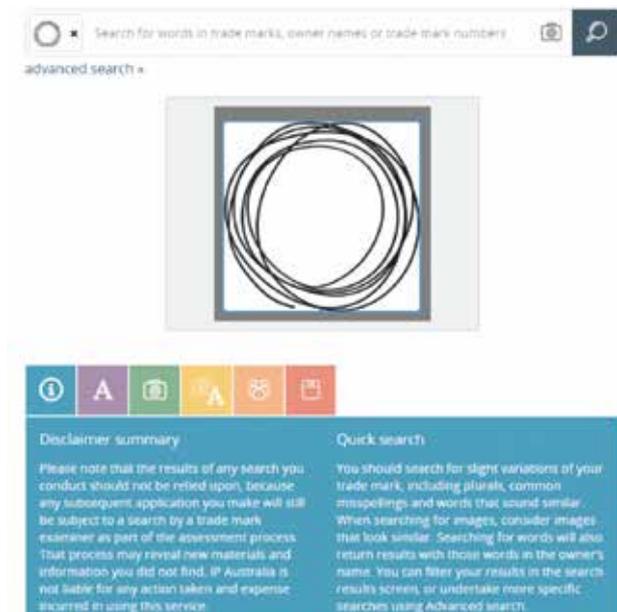
Source: IP Australia.

In developing the system, IP Australia collaborated closely with private sector partners and the Australian start-up TrademarkVision, identified through an open tender process. They also worked closely with users to understand their needs, including through face-to-face codesign sessions and exposure to alpha (prototype) and beta (test) systems as the project progressed. The use of state-of-the-art technologies and agile delivery processes resulted in the development of Australian Trade Mark Search as a platform for continuous improvement over time, as user needs, expectations and technical capabilities change. This will allow the service to evolve iteratively, ensuring its continued relevance and success, according to IP Australia leaders.

The success of Australian Trade Mark Search for brand identities has led IP Australia to expand the technology into other IP domains. The next public-facing IP Australia search solution will be Australian Design Search, which will allow users to search registered industrial designs using images.

Figure 21: **Australian Trade Mark Search results**
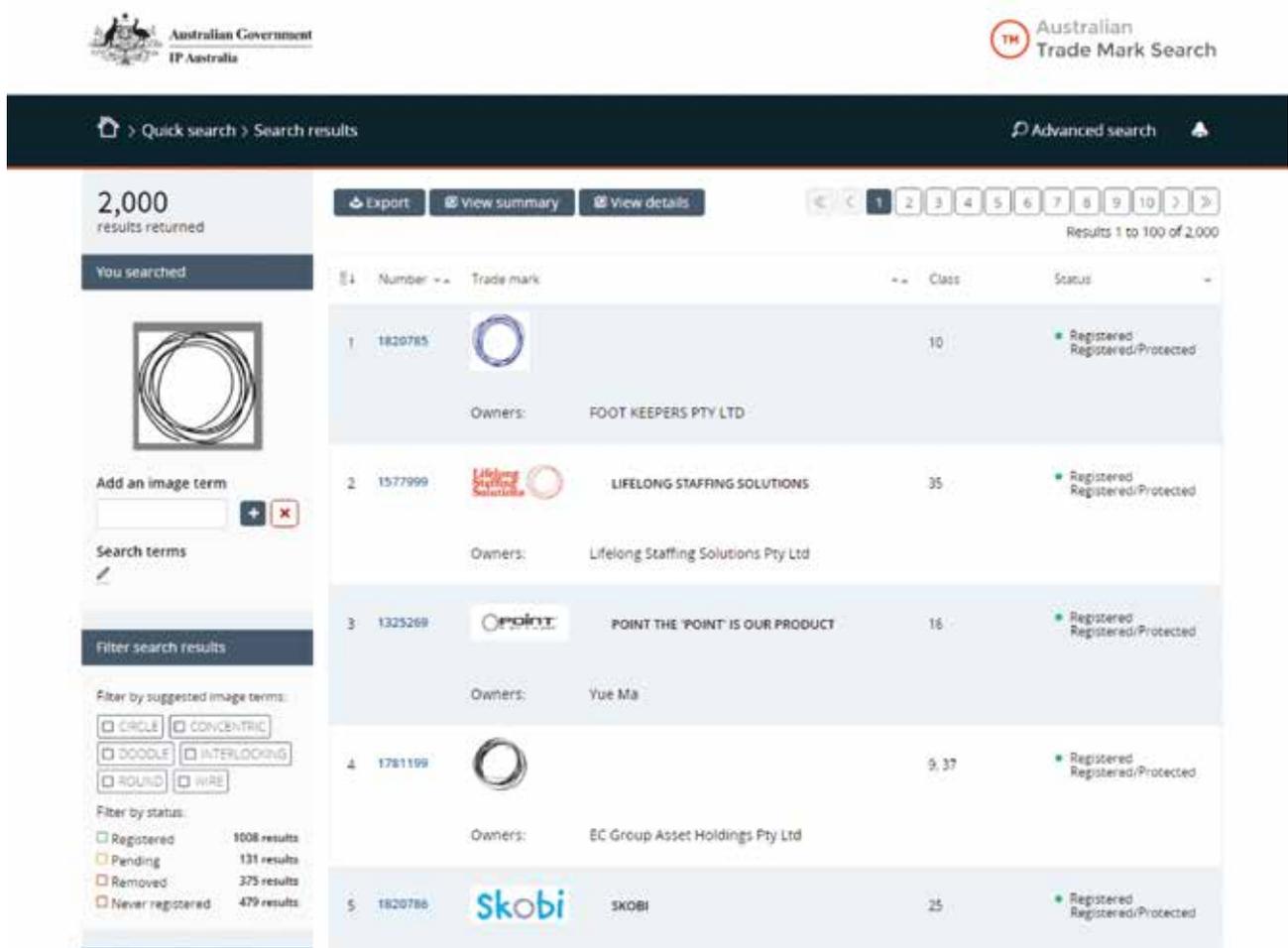
Source: IP Australia.

Figure 22: **Australian Designs Image Search**
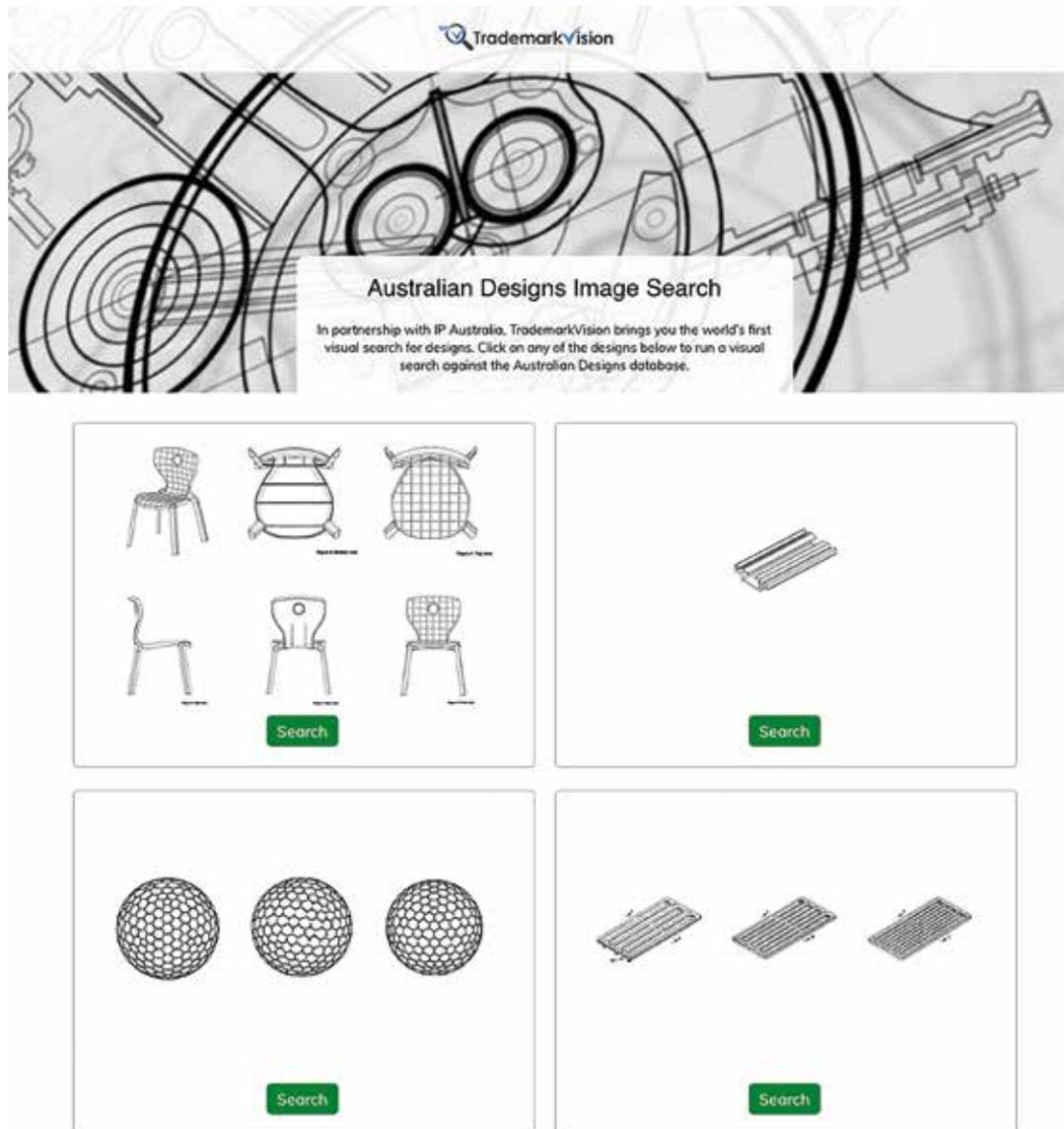
Source: IP Australia.

IP Australia was the first IP office to provide a public demonstration of this capability (see Figure 22). This world-first initiative has generated interest at international conferences and among Australian bodies for industrial designers, as it has the potential to greatly simplify the process of searching registered designs in Australia. As industrial designs are exclusively visually based, image recognition has great potential to help businesses understand whether their product is sufficiently new and distinctive to be registered for design protection, or if they are at risk of infringing on another registered design.

In the future, IP Australia will extend the functionality of this technology to patents and plant breeder's rights.

NOVELTY

Image recognition technology is most commonly photo-based and used to identify life-like objects in images (e.g. automatic image tagging on Facebook). Very few trademarks contain photos or life-like objects. The vast majority are highly stylised or cartoon representations of things. This makes Australian Trade Mark Search, and the underlying technology from their partner TrademarkVision, a unique and specialised form of image recognition technology. Trademark search systems, some of which use image recognition, have been available for some time, but the Australian Trade Mark Search technology disrupts this field by using machine learning algorithms to detect objects within a trademark image.

RESULTS AND IMPACT

One year after its launch, Australian Trade Mark Search is receiving over a million views per month. IP Australia has seen a 54% reduction in calls related to trademark searching, demonstrating greater ability on the part of businesses to meet their own information needs, and saving Australian businesses time and money. Knowledge of, and conversations around, Australian trademarks in the media and among small business and start-up networks continues to mature. This in turn helps businesses to launch quickly with unique and compelling brand identities, which are crucial for competitiveness in the global marketplace. Australian Trade Mark Search also leads to efficiencies within government, as trademark examiners now use the system to evaluate trademark applications with greater ease and speed than before.

The novelty and success of Australian Trade Mark Search is also being recognised on the world stage. The system is considered to be exemplary and is influencing and inspiring many other governments. International IP offices continue to reach out to IP Australia to understand how to develop similar solutions that will influence millions of businesses worldwide, from the world's largest corporations to the smallest start-ups. IP Australia was awarded the silver medal in the 2017 Prime Minister's Awards for Excellence in Public Sector Management.[80] In addition, *Fast Company* magazine recognised its partner, TrademarkVision, as one of the world's 10 most innovative companies for AI and machine learning.[81]

USER PERSPECTIVE

IP Australia conducted a survey among novice searchers on their experience with the new image search tool. Out of those that responded, 87% found the system "easy to use". This represents a dramatic improvement on the previous search system. Feedback from users also described the new tool as "very fact and informative", "much better than the [previous] website" and "so much more user friendly".

CHALLENGES AND LESSONS LEARNED

One of the core challenges IP Australia faced was identifying novice users. Over a third of the system's users are first-time or one-off searchers. While their interactions with IP Australia are often short-term, they remain an

important segment. To locate such users, IP Australia attended small business and start-up events to meet those who were familiar with the system and those who had yet to try it. As a result of these interactions, they realised that two modes were necessary: a quick search mode for more casual users, and an expert mode for advanced users, many of whom worked in the legal sector or in-house for large corporations.

Working closely with these and other users in their own environments helped IP Australia to understand their uses and needs. This broad research and user-centred focus also helped to identify existing products that met needs, while highlighting the importance of agility and flexibility for future use. This led IP Australia to determine that a custom solution was necessary. Without this process, they would have likely chosen an off-the-shelf solution, which would have resulted in compromised outcomes and costly remediation.

Another critical lesson learned during the innovation lifecycle and resulting success of Australian Trade Mark Search was the extensive due diligence performed on available solutions in IP and similar industries, according to IP Australia officials. During the development phase, IP Australia approached other IP offices around the world and evaluated many potential solutions available on the market.

Figure 23: **The IP Australia team**

Source: IP Australia.

80. See www.act.ipaa.org.au/pms%20-awards-winners2017.

81. See www.fastcompany.com/company/trademarkvision.

CASE STUDY

The world's first data embassy – Estonia

Through its e-Estonia initiative,[82] Estonia has built a digital society and developed the most technologically advanced government in the world. Practically every government service is paperless and performed electronically. As a result, Estonia is highly dependent on its information systems and the data stored on them. To protect its data, Estonia developed the concept of data embassies – servers outside the country that are legally under Estonian jurisdiction. The digital copies of key databases they store can be accessed in the event of a major data incident in the country, thereby protecting the digital lifeblood of this small Nordic country. Estonia is on its way to becoming a "country without borders" (MoEAC, 2016), and the data embassy is one of several Estonian programmes that blurs the lines of national borders and sovereign identity in a digital world.

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82. See https://e-estonia.com.

THE PROBLEM

As part of its digitisation process, Estonia has actively implemented a "paperless governance" policy. This has resulted in a situation in which essential databases (e.g. land, population and business registries) exist only in digital form. While the benefits of a paperless government are immense, it does raise a few challenges. One is the issue of how to secure data that could become vulnerable in the event of a major natural disaster or cyber, terrorist or military attack. Such an attack is not purely theoretical; Estonia has faced a number of cyber-attacks in recent years. In 2007, Russian attackers took 58 Estonian websites offline, including those of the government, most newspapers and many banks.[83]

AN INNOVATIVE SOLUTION

This initial attack demonstrated the need for an outside-the-country solution, which was subsequently discussed for several years by cyber-security experts, academics and state IT professionals. To address the problem, Estonia launched the world's first data embassy in partnership

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83. See https://e-estonia.com/estonia-to-open-the-worlds-first-data-embassy-in-Luxembourg.

with the Government of Luxembourg. In June 2017, the Prime Minister of Estonia and the Prime Minister of Luxembourg signed a unique bilateral agreement between the two governments regarding Estonian data and related systems (see Figure 24), which are stored in Luxembourg's government-owned data centre. This agreement creates the basis for establishing the world's first data embassy. The data embassy is an extension of the Estonian government cloud, meaning that the Estonian state owns server resources outside its borders. These will be used not only for data backup, but also for operating critical services. As with physical Estonian embassies, the servers are considered sovereign embassies in foreign data centres.

"One of the most important tasks of any country is to ensure continuity both on a state level as well as in terms of public services. The Estonian digital and information society is already so highly sophisticated that it is no longer possible to move back to a paper era. Therefore, we have to do our utmost to ensure cyber security, including maintaining digital continuity."
Siim Sikkut, *Government Chief Information Officer Estonia*

Figure 24: **Signing ceremony between Estonia and Luxembourg** *Source*: Government of Estonia.

While opening the first data embassy involves placing Estonian systems and data in another sovereign county, it creates an additional security guarantee for Estonian sovereignty. Estonia will back up critical data and services important for the functioning of the state outside the physical territory of Estonia, while Luxembourg guarantees that the data and the servers are protected by the same legal guarantees as the data and servers in Estonia. This approach will help ensure the country's digital continuity – its capability to maintain services and digital data regardless of interruptions.

The data embassy benefits Estonian citizens, who will be the recipients of a more reliable and secure digital society. Additionally, it creates an extra security guarantee for 30 000 and more e-residents of Estonia, as discussed previously, who expect Estonian digital services to be available at any time independent of location.

After the first data centre in Luxembourg is fully implemented and lessons are learned, Estonia is likely to open additional data embassies in other countries.[84] Data embassy leaders believe that the concept should be considered by every government as countries become more and more technologically advanced. A number of countries have already contacted Estonia and are planning to establish a network of data embassies abroad.

NOVELTY

The data embassy is the first of its kind. It introduces an innovative new paradigm in a digital world whereby a country distributes its critical data and information systems in co-operation with other countries to ensure its continuity and security. This innovation also represents the first bilateral agreement to expand the Vienna Convention on Diplomatic Relations, which provides the framework for international diplomatic relations, to the hosting of data and information systems. As such, Estonian officials describe it as a unique case study in international law and relations. It may also support a new concept of the free movement of data, in addition to people, across the European Union.

The data embassy is also innovative in terms of technical design and implementation. Novel thinking is required to design a system that keeps the data of the two sites in sync, while preventing data loss. To achieve this, new technological solutions will be developed including, for example, the use of blockchain technology to ensure data integrity.

RESULTS AND IMPACT

The data embassy is still very new and not yet fully developed and implemented. Much of the initial impact has been intellectual and political, with innovative conceptions of cross-border storage and use of data spearheading a new phase in international law. Over time, the world's first data embassy will validate the importance of ensuring digital continuity of the state and the possibilities of building distributed systems with the assistance of technologies such as blockchain to help increase a country's security.

CHALLENGES AND LESSONS LEARNED

The data embassy project encountered legal challenges which primarily revolved around guaranteeing the confidentiality and security of critical data lying within the jurisdiction of another state. To overcome these challenges, the governments of Estonia and Luxembourg signed a bilateral agreement that established immunity for the data embassy. This agreement is the first of its kind. The project has also encountered technical challenges (e.g. how to protect the integrity and confidentiality of critical data outside Estonia, how to redesign information systems to work reliably in globally dispersed environments, etc.), which require new technological solutions. These solutions and the tools to overcome the outlined challenges are currently under development.

One of the key lessons learned according to Estonian officials is the importance of finding partners who think similarly and are eager to innovate, and with whom mutual trust exists or can be cultivated. Luxembourg is a good partner for Estonia as the government understands the importance of digital continuity and is ready and willing to make efforts to secure this future. The project was made possible by Luxembourg's support for the project and readiness to host the world's first data embassy within their government-owned data centre, thereby providing legal immunity for the data and server hosting.

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84. See https://e-estonia.com/estonia-to-open-the-worlds-first-data-embassy-in-Luxembourg.

Trend 2:
Systems approaches and enablers

The complexities of today's problems require systemic change rather than simple, incremental responses. Technology, environmental challenges and citizens' dissatisfaction with "business as usual" are all putting pressure on governments to change their working methods and reach beyond simple solutions and linear equations of cause and effect. This marks an innovative paradigm shift in governance. Rather than layering interventions on top of one another, the public sector should repack policies in ways that allow them to get to the real purpose of change and deliver value to citizens. Human wants, needs and desires are complex, and the systems created to satisfy them are even more so. If simple models are used to analyse them, they will produce simple answers. As human lives and the problems that affect them are intertwined, innovative working methods are needed that take this complexity into account and provide solutions that actually work. One way to address these challenges is to apply a more systemic approach to innovation. Systems approaches can have a transformative effect across the board in the public sector:

- They identify the real purpose behind the change process.

- They help to analyse the interlinked determinants behind complex problems.

- They help to design systemic innovations that work in specific contexts.

INNOVATORS ARE EMBRACING COMPLEX SOLUTIONS FOR A COMPLEX WORLD

Systems approaches have a long history in engineering, ranging from constructing cities to planning traffic. Increasingly, they are being applied to social problems (see Box 7 for definitions). However, until recently they did not receive adequate attention in the public sector, largely because systems approaches do not offer simple solutions, 10-point guidelines or toolkits (or at least they should not). Instead, they focus more on applied expertise, holistically analysing how to reach a purpose, selecting tools and methods that fit the problem, not vice versa.

Box 7: **DEFINITIONS OF SYSTEMS AND SYSTEMS APPROACHES**

Systems are interlinked elements bounded and created to achieve a specific purpose.

Systems approaches are a set of processes, methods and practices that aim to affect systems change. Systems approaches focus on the impacts and outcomes of policies and their purpose, going beyond the linear logic of "input-output-outcome" of traditional policy design. They emphasise the involvement of all affected actors inside and outside government, as well as the importance of leaving room for iterative processes to account for the uncertainty associated with wicked problems.

Source: OECD (2017c).

In complex systems, change occurs due to the interplay of diverse factors that can be very loosely connected to one another. It is important not only to identify the different elements of the system, but also how they influence and interact with each other, in order to be able to reach positive results in complex settings. For example, is it possible to attribute why citizens distrust[85] the government to one cause? Citizens conflate their personal experience at the doctors, police or post office with the broader functioning of government. Furthermore, trust is interpersonal: if a government does not trust its citizens, can citizens be expected to trust their government? Can the loss of confidence in government (Figure 25) be linked purely to the effects of the financial crisis when these effects vary across countries? Addressing these issues means going beyond piecemeal policy interventions that address only part of the problem.

The Observatory of Public Sector Innovation (OPSI) at the OECD is continuously updating its tactics for systems change (Figure 26). Getting to the heart of the problems in systems is difficult, and sometimes involves making sense of huge datasets (e.g. mobility planning in cities), thus, governments need expert help. But knowing what kind of help is needed is a skill in itself. OPSI is now familiarising countries with systems approaches by working with

85. In a recent Pew survey, only 18% of Americans said that they trusted the government always or most of the time. See www.people-press.org/2017/05/03/public-trust-in-government-1958-2017.

Figure 25: **Confidence in national government in 2016 and its change since 2007**
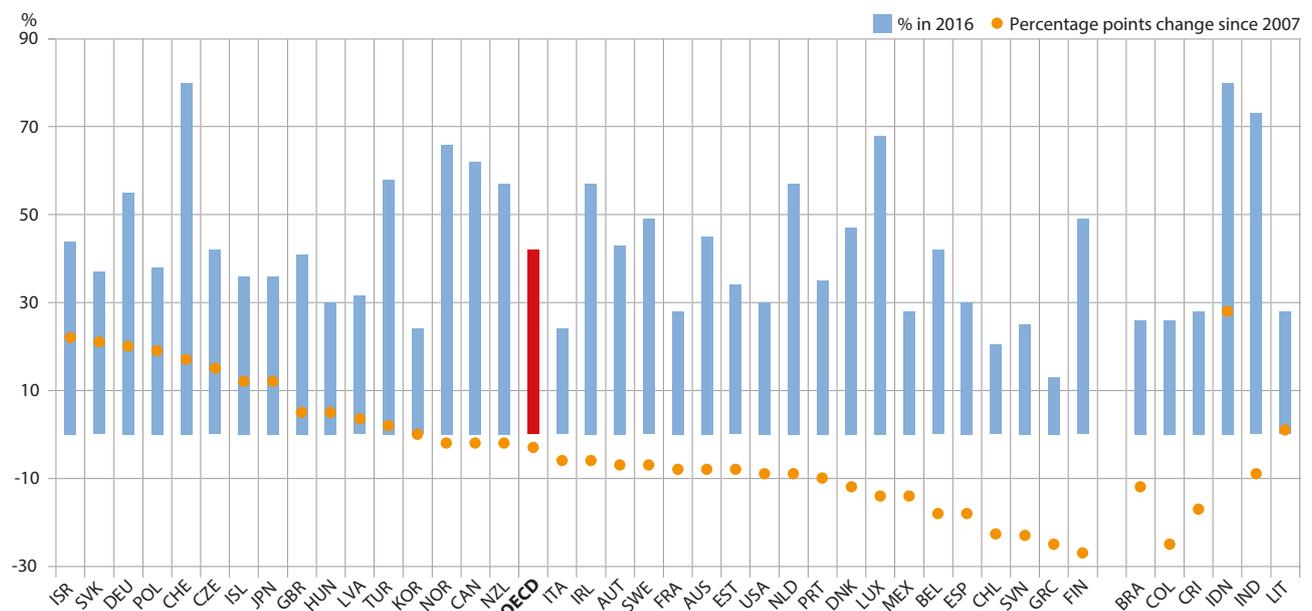
Source: OECD (2017b).
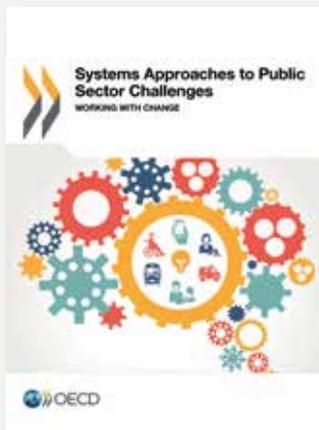
PEOPLE
Combining a diverse set of people: "If you know everyone in the room: you will fail".

PLACE
Creating the neutral space to deliberate and set back from the everyday system.

DWELLING
Creating the time and conditions to think and deliberate on the end purpose.

CONNECTING
Connecting to all stakeholders to both inform the process and form advocacy coalitions.

FRAMING
Framing the issue based on the outcome/purpose (public value) not existing system structures.

DESIGNING
Based on the analysis before, designing solutions that may have systemic effects.

EXPERIMENTING
Reducing uncertainty by experimenting on a smaller scale with different solutions and clear action plans.

PROTOTYPING
Creating a prototype for scale that can be tested by diverse populations.

STEWARDING
Guiding and supporting the process by both creating the resources and political backing for change.

MEANINGFUL MEASUREMENT
Measuring the effects based on the outcomes wanted to achieve, not proxies.

Source: OECD (2017c).

them on specific complex issues. This work is intended to empower public sector innovators to look beyond their immediate silos and the systems of today and envisage the systems of the future. In this effort, the OECD is not alone. The World Bank has been introducing systems approaches iteratively to issues of development (Bauer, 2017), while the United Nations is analysing environmental problems at the "ecosystems" level, and futures experts in international organisations have tied strategic foresight to anticipatory systems frameworks (Miller, 2017).

Beyond advocacy and the work of international organisations, several trends linked to systems approaches are taking shape:

- First of all, innovators are increasingly transcending administrative silos to deliver real value to citizens.

- Second, innovators are using more advanced diagnostic tools to get to the root causes of problems.

- Third, innovators are debating and analysing value trade-offs and unintended effects of systemic innovations. This means that delivering public value to citizens is being put back at the heart of change efforts.

- Fourth, innovators are searching for levers of change to move from incremental to radical transformation in the public sector.

- Last, but not least, innovators are looking to provoke systemic change in the public sector itself, by exploring how to make public institutions function in ways that allow them to work differently and experiment with far-reaching ideas.

INNOVATORS ARE TRANSCENDING ADMINISTRATIVE BOUNDARIES

The first trend in emerging practice is the move to transcend traditional administrative silos. Technology, as touched on in the previous section, is having a profound

effect on the core concepts and operating practices of the public sector. Data are no longer bound to one department or agency, but can be interlinked, made interoperable and used for different purposes. This approach produces not only whole-of-government, but also whole-of-society solutions. Solutions like APEX from Singapore (see later in this section; page 62) open up and unify data-operating practices across sectors, producing systemic effects. With regard to data security and privacy concerns, Justice Data Lab[86] in the United Kingdom is the first service to evaluate the impact of rehabilitation interventions, by providing secure access to sensitive data and technical analysis for the third sector and beyond. It demonstrates how data security obstacles can be overcome and how statistical techniques have enabled innovation through the use of administrative datasets above and beyond their original purpose.

Knowledge is power, and sharing information means that governments, to some extent, have started to share their power as well (Tõnurist, 2015). The traditional boundaries (political mandates, working with citizens, partnerships, etc.) of the public sector are changing (Figure 27). Through digital transformation, services can be personalised with individual life-events and context taken into account, and solutions cocreated with citizens. On one level, the automation of simple bureaucratic tasks is releasing more resources to core responsibilities. For example, Trelleborg municipality in Sweden[87] uses a case handler robot to automate certain parts of social support processes that concern financial assistance. This has resulted in large efficiency gains (90% of social assistance processing time was saved), and also opened up more time and resources in government to undertake important work relating to individual citizen's needs. In a similar vein, the Estonian Tax Authority automated data analysis, cutting down on employees and investing heavily in new digital services making it more difficult to work in the shadow economy (Lember, Kattel and Tõnurist, 2017). Major gains can also be achieved through GaaP (government as a platform) (Tõnurist, Lember and Kattel, 2016).

On another level, new platforms linking people and their complex needs play a key role in re-shaping boundaries. In this context, breaking down administrative silos is

Figure 27: **The changing boundaries of the public sector**
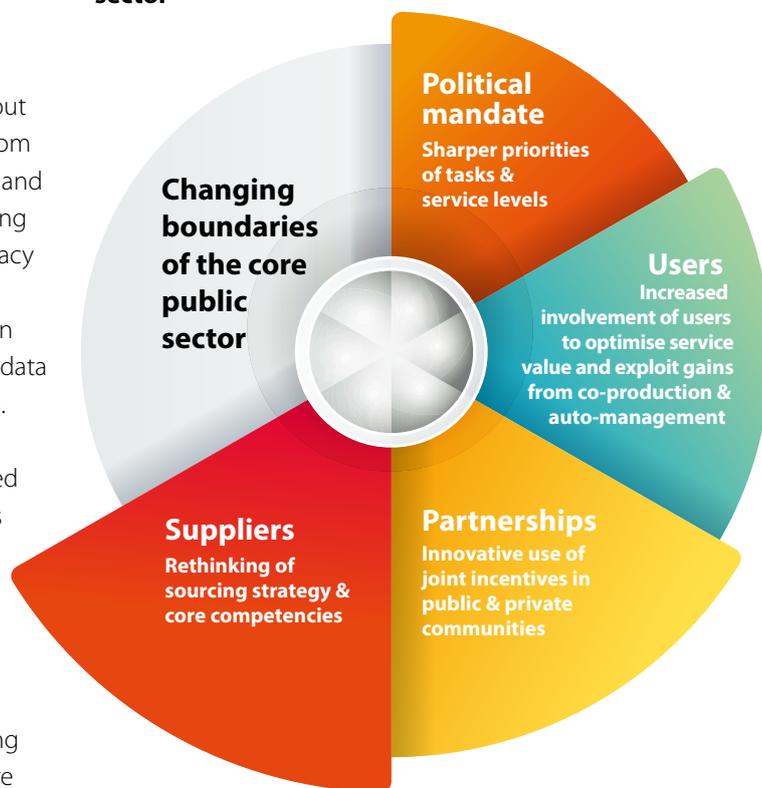
Source: OECD (2017d: 21).

not a goal in itself – the real aim is the value from new systematic solutions for people's complex needs. For example, in New Zealand data integration is used to model critical life events (see Box 8), making all necessary services available to people in one place when they encounter a change in their life and require assistance. This approach also prompts more considered responses from citizens, who are now better informed, because government has anticipated their needs rather than requiring them to assemble information from diverse sources. In another example, the less data-heavy, yet very innovative, One-Stop-Guidance Centres for youth in Finland (see Box 9) bring together various service providers across sectors to avoid duplication of activities. This approach simplifies matters for users who no longer need to familiarise themselves with internal government structures in order to receive services. Hence, a unified response to the needs of a specific target group is cocreated across sectors. Other examples of this approach include the Seoul 50+ Policy and the Asker Welfare Lab, both outlined in detail in the next section of this review (pages 89 and 98, respectively).

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86. See www.gov.uk/government/publications/justice-data-lab.

87. See www.trelleborg.se/en/english.

SmartStart is a cross-agency online life event service in New Zealand linked to the birth of a child. This is the first of a number of integrated digital services based around critical life events. Through SmartStart, New Zealanders can learn about having a child; navigate, access and engage with government services; and consent to having information provided to one agency reused by another agency.

SmartStart integrates 55 services (e.g. birth registration, financial assistance, child health services) and shares data between departments with minimal effort required on the part of the customer. Integrated web content and service access means that citizens no longer have to complete forms and provide the same information multiple times.

Source: "There is a baby on the way", 2017 brochure produced by SmartStart, Government of New Zealand.

To Do List

Pregnancy weeks 0-14
☐ Choose a lead maternity carer

Pregnancy weeks 15-30
☐ Check what parental leave you can get
☐ Check what financial help you can get
☐ Verify your identity with RealMe

Pregnancy weeks 31 to birth
☐ Get a car seat ready
☐ Choose a Well Child Tamariki Ora provider

New baby weeks 1-6
☐ Register the birth
☐ Apply for an IRD number for your child
☐ Add your child to your Working for Families application
☐ If you're on a benefit, tell the Ministry of Social Development your child has been born
☐ Order a birth certificate

Baby 6 weeks to 3 months
☐ Check if the financial help you can get has changed

Baby 3 months to 6 months
☐ If you get Working for Families payments, let Inland Revenue know if your income changes
☐ Check if you can get help paying for childcare

SmartStart
The one place to go for step-by-step information to help you and your baby get off to the best start

smartstart.services.govt.nz

Ohjaamo is a One-Stop-Guidance Centre that serves as an easy-access service point for young people below the age of 30. It brings stakeholders together from diverse sectors, provides services to young people in new ways and encourages them to work together, creates new operating practices and develops skills in multi-sector management.

Ohjaamo's core function is to provide personal advice and guidance, support in life management, career planning, social skills and capacity building, as well as education and employment. The professionals working at Ohjaamo examine the situation and service needs of each young person individually, with the objective of helping young people to take charge of their lives.

In 2016, 429 employees worked in 40 Ohjaamo centres. Their services reached 69% of Finnish youth from ages 15 to 29. Across Finland, 80 000 young people used Ohjaamo services in 2016. By 2025, Ohjaamo services will reach all young people below the age of 30.

Source: Government of Finland.

Adding another layer of complexity, people nowadays live more mobile lives. It is not uncommon, for example, for individuals to live in one city, or even country, and work in another. This is the main principle of the free movement of labour in the European Union – making mobility a right in itself. However, this raises the question: are public services sufficiently mobile to meet the needs of citizens? Should citizens have to contend with different government administrations at different levels for their rights to be ensured and their needs met? OECD countries use various mechanisms to co-ordinate action from the national to the regional level (see Figure 28), but the scope of this co-ordination differs in terms of content (Figure 29). New, emerging challenges are pushing for quicker co-ordination across traditional administrative silos. One such example is Co-lab Sweden (described in more detail Chapter 3, page 84), which has introduced new working methods to work across sectors in order to address the needs of unaccompanied minors among refugees.

Figure 28. **Vertical co-ordination instruments in OECD countries** (total number of respondents is 30)

National level regional development agencies	14
National representatives in regions	18
Contracts or other agreements	23
Project co-financing	26
Consultation forum or other form of regular dialogue	26

Source: Charbit and Romano (2017).

Figure 29. **Areas with extensive scope in OECD countries' national urban policies**

Number of countries

- Economic development: 19
- Spacial structure: 16
- Human development: 11
- Enviromental sustainability: 15
- Climate resilience: 5
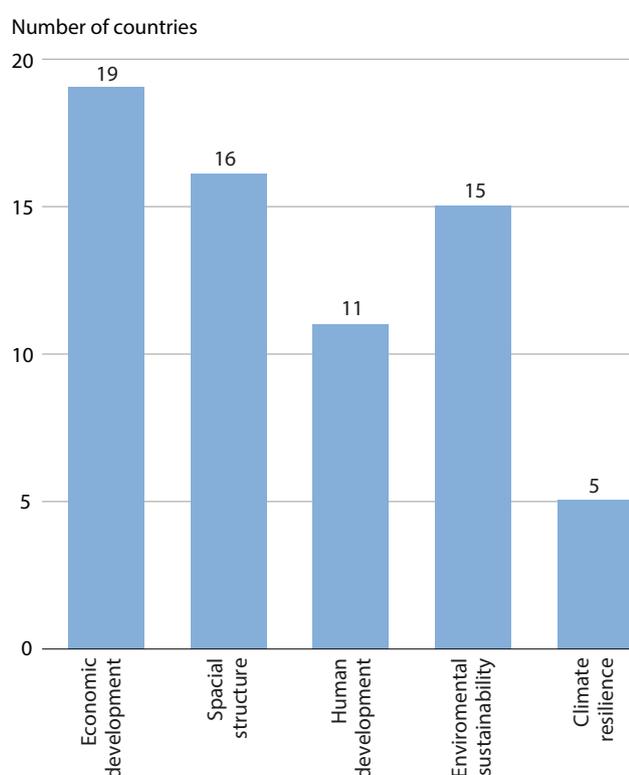
Source: OECD (2017e: 15).

Another example from the Gothenburg region of Sweden (see Box 10) shows how collaborative innovation can be pushed to the fullest. The region starts with the smallest common denominator and builds and extends consensus by collaborating across municipalities. They also see themselves as part of a much larger international context, where the needs of their residents transcend their direct control. Thus, nowadays challenges cross administrative boundaries, often due to globalisation. In some cases, policy problems emerge where causes and effects are difficult to identify, and addressing them requires broader inputs than the efforts of a single actor or policy sector. Lack of adequate answers to people's needs across countries could lead to polarisation and fragmentation.

BOX 10: **INNOVATION SPOTLIGHT: THE GOTHENBURG REGION ASSOCIATION OF LOCAL AUTHORITIES (GR)** (SWEDEN)

GR, a regional association covering 13 member municipalities in western Sweden, has been working to compensate for restrictions imposed by administrative boundaries between the city and the surrounding municipalities since its establishment. The inhabitants of the Gothenburg region want their needs to be met seamlessly, regardless of these imposed boundaries which play no role in their everyday lives.

To this end, GR is enhancing educational collaboration and common employment markets, community care services and transportation, sustainability strategies and competence enhancement in innovative ways. The platform has played a critical role in confronting acute challenges to the region (e.g. the reception of newly arrived refugees in 2015), by helping to cross administrative and sectoral boundaries to find solutions to complex problems.

Source: The Gothenburg Region Association of Local Authorities, Sweden.

Another innovative initiative working to cross broader administrative boundaries is the "Once Only Principle".[88] As a project part of the EU eGovernment Action Plan 2016-2020, it aims to ensure that information from businesses is supplied to public administrations only once, regardless of the company's country of origin. This represents a big push for the Digital Single Market, which is designed to increase the efficiency of business processes, but also possesses huge potential for systemic public sector innovation across countries as well. When data across countries become integrated, the next step is for public services to cross borders. Here, systems approaches are vital to see past existing silos – mental, administrative or thematic – and create value across boundaries and levels.

COUNTRIES ARE GETTING BETTER AT PROBLEM DIAGNOSTICS TO INITIATE SYSTEMS CHANGE

The second trend leading to systemic change is the use of more advanced problem diagnostics. Problem framing is the main key to the use of systems approaches and their impact. The end result will depend on the choice of aspects, relationships and values for inclusion in the debate, as well as how the problems are named and defined. For example, a recent systems approach in Iceland reframed domestic violence as a public rather than a personal matter, enabling the use of different tools and interventions to address the problem (OECD, 2017c). Systems approaches are also necessary to understand new information patterns and to use analytics in a meaningful way, especially taking into account the abundance of available data and enhanced data-processing capabilities (OECD, 2017c). Transformation does not come from big data alone, but from the ability to model interactions between data sources and analyse them in ways that provide greater insight into systemic problems. It is therefore promising to see new initiatives emerging that help to combine data for better problem diagnostics. For example, GovLab's "data collaboratives" project[89] identifies innovative uses of private (often corporate) data to meet public challenges.

Another area contributing to systemic change is the increased use of behavioural approaches in policy making. The study of behaviours helps to examine the complexities and contradictions of human actions and allow the use of behavioural insight initiatives to nudge behaviour. The

OECD recently published a collection of case studies on the application of behavioural insights, including cases from 23 countries (OECD 2017f: 27) in various policy areas such as consumer protection, education, energy, environment, finance, health and safety, labour markets, public service delivery, taxes and telecommunications (OECD, 2017f). One such example is Predictiv, outlined in depth later in this section (see page 67), which allows for the testing of various (behaviour-dependent) policy solutions iteratively on large-scale online panels. These kinds of initiatives help governments understand which solutions would work in practice, much quicker than normally possible, and then scale accordingly. Furthermore, the use of behavioural insights can provide empirical evidence of the complexity and interconnectedness of the personal choices people face every day. This will improve understanding among policy makers of the factors influencing behaviour, thereby allowing for better defined systemic solutions. However, care must be taken to ensure that the tools used to analyse problems do not draw attention away from substance and problem framing. Behavioural insights initiatives have been critiqued (Figure 30) for tweaking around the edges and playing to the mantra of "changing more by doing

Figure 30. **Type of opposition/criticism to applying behavioural insights** (total number of respondents is 60)
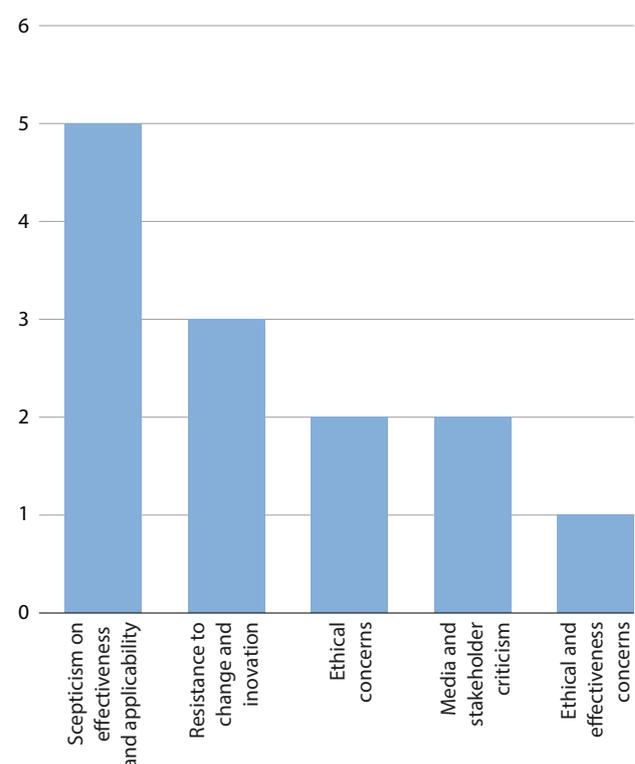
Source: OECD (2017: 34).

less", and in the process holding back fundamental change and innovation. Behavioural insights have been left on their own for too long in government, and should be incorporated into the toolboxes of systems thinkers and public sector change makers.

Nevertheless, systematic use of data in smarter ways for problem diagnostics and potential solutions can lead to better outcomes and also substantial financial savings. In the Netherlands, CBS (Statistics Netherlands) combines its considerable data expertise with real-life urban problems and city policy knowledge (see Box 11). As a federal body, CBS works to support cities through the provision of expertise that cities often lack. The resulting jointly developed Urban Data Centres help to better understanding the current situation and problem dynamics in a city. The centres create location and problem-specific data-driven input for local policy making that can lead to transformative change. In the United Kingdom, the Ministry of Housing, Communities and Local Government (MHCLG) has put in place a data strategy bringing together all data projects under a single programme to promote innovation and a clear and common vision.[90] This holistic approach allows the department to identify interdependencies and efficiencies across the department, consolidating data collection in a single electronic system, setting common data standards and promoting open data. For example, for the evaluation of the Troubled Families Programme, administrative data from 150 upper tier local authorities and three central government departments have been

linked for the first time, creating a uniquely rich dataset. The department has also used algorithms and open data to develop a prototype tool for automating fact sheet briefing.

However, data are not the solution to everything and sometimes existing data are not enough. New ways of analysing and diagnosing problems are needed. The next section of this review outlines the example of the Asker Welfare Lab (page 98) and their transformative diagnostic tool. Other countries have developed similar needs-based methodologies. For example, the MY LIFE initiative in Finland (see Box 12) created a self-assessment methodology to evaluate the life situations and goals of young adults, so as to address them systematically.

Box 12: **INNOVATION SPOTLIGHT: MY LIFE (CITY OF KUOPIO, FINLAND)**

The MY LIFE project (2015-16) worked to develop a comprehensive self-assessment methodology – 3X10D Survey – for evaluating the comprehensive life situation and goals of young adults. The methodology provides professionals with broader information about young people's lives and helps them to assemble the services young adults actually need. The approach enables services to be prioritised and facilitates the division of work between professionals and young adults towards reaching common goals. The initiative also introduced an integrated approach to well-being for young adults.

Source: City of Kuopio, Finland.

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90. See http://opendatacommunities.org.

Box 11: **INNOVATION SPOTLIGHT: URBAN DATA CENTRES (THE NETHERLANDS)**

In 2016, CBS (Statistics Netherlands) started to develop Urban Data Centres (UDC) by combining national data and data expertise with smart, data-driven city needs. The Dutch city of Eindhoven jointly developed an UDC with CBS. The centres are built around the city's interests and needs – smaller towns and big metropolises variably have different interests – by combining national survey, administrative and big data with city data. After launching the first CBS Urban Data Centre, seven additional centres were established in just one year. The concept can also be adapted to and implemented in developing countries, and can contribute to the realisation of the SDGs.

Source: Statistics Netherlands.

4 Advantages of an **URBAN DATA CENTRE**

01 Unique collaboration CBS and The Hague

02 Combining data

03 Rich data sources

04 Quality, privacy security and ISO certification

SYSTEMS APPROACHES INVOLVE TRADE-OFFS WHICH MUST BE EVALUATED

No innovative approach is perfect. All changes have unintended effects, some positive, others negative. This is even more the case with systemic change. An important part of using systems approaches is analysing the value trade-offs connected to different issues, and looking at their unintended effects. One example might be thinking about economic growth in the context of climate change, globalisation and quality of life. Growth is connected to multiple indicators that can be very complex to interpret, and thus must be placed in a broader context (Figure 31).

Figure 31: **Socio-economic context and characteristics of growth**

GDP per capita

Composition of value added, 2015

Income inequality (Gini coefficient)
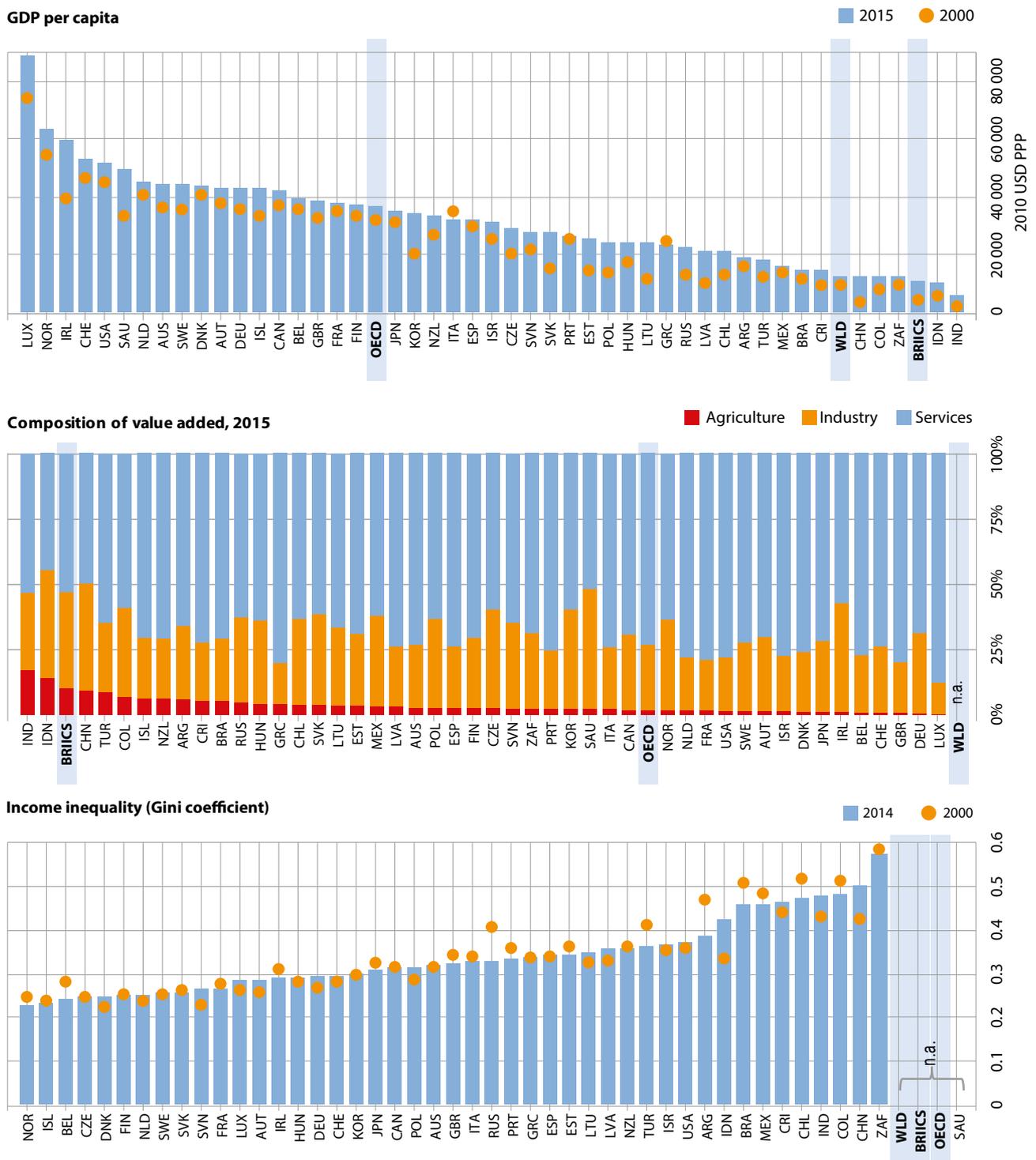
Source: OECD (2017g: 25).

While growth in some circumstances can have positive impacts on air pollution, land consumption and income inequality, in most cases potentially difficult trade-offs are present (OECD, 2017g). This raises the question – which values should prevail and who gets to decide?

Understanding the nature of problems and their interconnectedness also facilitates informed debate about public value trade-offs connected to innovations with systemic effects. For example, what are the trade-offs in an ageing society when a government is working to ensure high labour market participation in later life, while grappling with rising youth unemployment? (Read more about these issues in the case study on Seoul 50+ Policy, page 89.)

The problem with systemic innovation is that, in many cases, societies face proximate failure with distant impacts:

interventions and systems are delivering inadequate results today, but the more detrimental effects are felt only in the future. Climate change is the most obvious example here, but health prevention can also be used as a good analogy. Only a small fraction of all health spending in OECD countries goes towards prevention (Figures 32 and 33), and while countries have made headway with some behavioural risk factors (e.g. consumption of alcohol, smoking), others such as obesity resulting from poor diet and physical inactivity are on the rise (Gmeinder, Morgan and Mueller, 2017). These contribute to chronic illnesses that cost countries far more in the long run than prevention campaigns in the present. The challenge is to change the system while ensuring its continued operation: hospitals and services need to function today, even if governments want to invest in future savings. It is vital, therefore, to determine how to motivate politicians trying to get re-elected today to work on outcomes only visible decades later.

Figure 32: **Spending on health prevention**

Only a small fraction of the health spending goes on prevention activities

...with a large proportion allocated to healthy condition monitoring programmes

9%	Immunisation
7%	Early disease detection
44%	Healthy condition monitoring
27%	Information, education, counselling
13%	Other collective services

2.8%
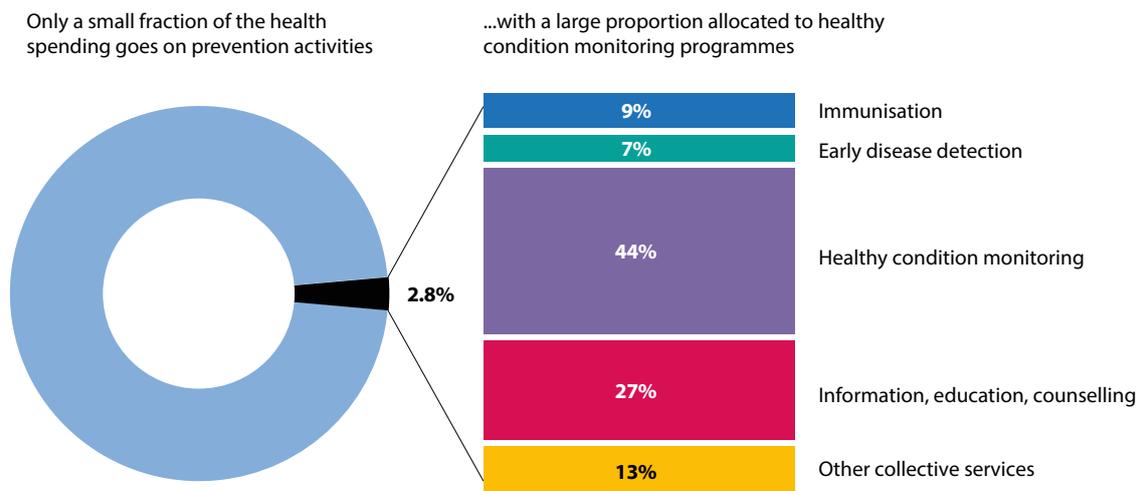
Spending on prevention was particularly affected following the economic crisis

Growth rate (%) in real terms, per capita
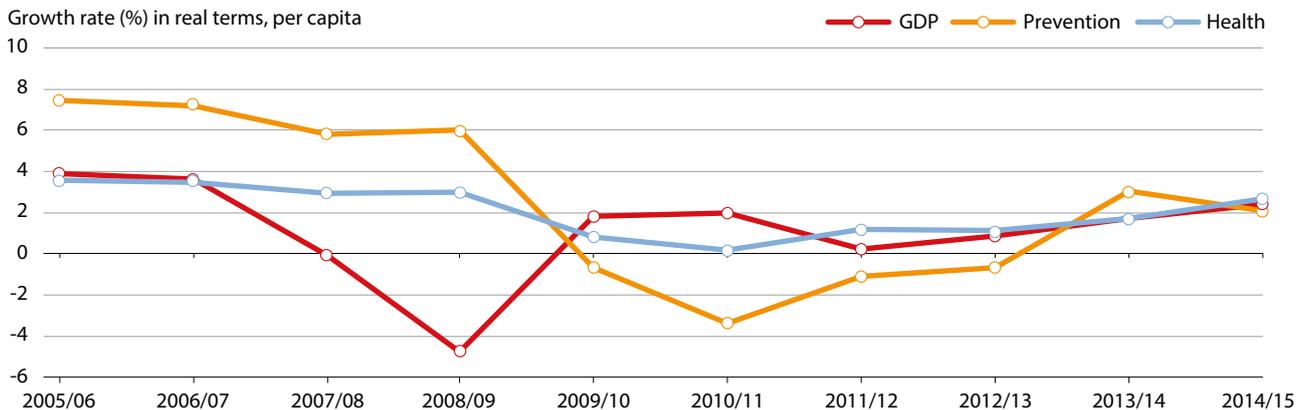
Source: Gmeinder, Morgan and Mueller (2017: 6).

Figure 33: **Prevention expenditure per capita and as a share of current health expenditure, 2015**

USD PPP   ☐ Per capita (left axis)   ● Share of CHE (right axis)   % of current health expenditure
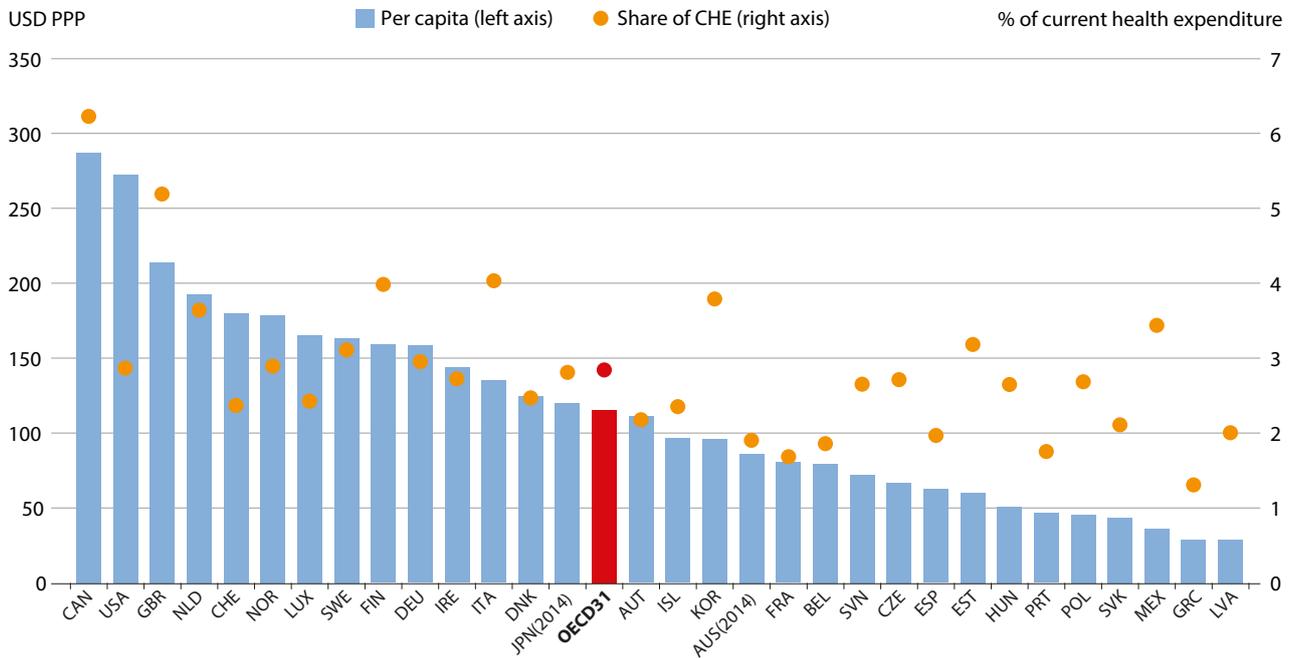
Source: Gmeinder, Morgan and Mueller (2017: 15).

Another complex example is the case of the sharing economy, specifically regulating Uber and other ride-sharing platforms (OECD, 2017c). While such platforms are changing perceptions of the mobility experience for the average consumer, the outcome for cities can include more cars on the streets, destruction of jobs, a rise in precarious employment and possibly economic value being directed away from cities. Thankfully, public sector innovators have started to think about creating spaces for these difficult "value conversations" as part of systems change. These spaces, like ARENA A-Lab in Australia which tackles energy transformation (see Box 13), make it possible for different stakeholders with conflicting interests to come together and discuss different notions of "public value", with a view to finding common ground. The Fusion Point in Sweden (see Box 14) brings together urban planners, developers and academics to discuss and inform action around the biggest urban development in Northern Europe. The City Hall adopted a vision for development defining RiverCity Gothenburg as "inclusive, green and dynamic". However, policy makers did not define, for example, what inclusiveness meant in practice. Is it a mixture of diverse communities living together, more affordable housing or just open access to the new region of the city? Such a large expansion will also affect other parts of the city. Can these changes be planned, anticipated and managed? The Fusion Point debates these issues together with all stakeholders concerned and

informs policy makers about the emerging practice and value trade-offs with the help of leading urban scientists.

Box 13: **INNOVATION SPOTLIGHT: ARENA A-LAB (AUSTRALIA)**

The Australian Renewable Energy Agency (ARENA) is a federal government body that funds new technologies, facilities conversations and shares knowledge about renewable energy. ARENA created the A-Lab in 2016 to break down barriers to renewable energy in Australia.

A-Lab draws on a network of people with a wide range of expertise and passion to make systemic change in the electricity sector. In A-Lab, stakeholders can design and deliver solutions to the most complex challenges of integrating renewable grids, combine their respective strengths and build momentum for change.

A-Lab's innovation frames tangible and tactical programmes of work that aim to solve future energy issues. The approach allows for a diverse group of people with opposing views to explore opportunities and find new and creative solutions.

Source: Government of Australia.

Box 14: INNOVATION SPOTLIGHT: FUSION POINT (SWEDEN)

The Fusion Point practice-based research programme brings together cutting-edge research and urban planning practice to inform the largest urban development project in northern Europe – RiverCity Gothenburg. Twenty years from now, central Gothenburg will be twice its current size. The aim of the programme is to strengthen the exchange between research and practice in architecture and urban design, and to create meeting spaces where different theoretical and practical perspectives fuse in productive ways. The focus is on developing a design methodology for urban development, in which academic knowledge is more efficiently integrated into various decision-making processes of public institutions.

Source: City of Gothenburg, Sweden; http://alvstranden.com/stadsutveckling/fusion-point-gothenburg.

Public value is not a constant, it is a changing variable. The understanding of value should be shared by society, and thus cannot be an elite-led discussion. It is therefore important that a broad base of stakeholders – especially citizens – understand the shifts and trade-offs of planned changes. This means that public engagement is also changing in a systematic way. There has long been dissatisfaction with traditional town hall meetings and public consultations, which tend to be shallow and regressive in nature. One way forward is to increase the volume of engagement. For example, in Korea, the Ministry of the Interior and Safety, with the co-operation of five other ministries, undertook a large-scale experiment entitled "Gwanghwamoon 1st Street" or the "People's Transition Office" to collect ordinary citizen's ideas for the transition to a new government.[91] The initiative was launched after only two weeks of preparation following the new President's inauguration day. People's suggestions were gathered through a variety of platforms including through temporary offices (see Figure 34), local branches installed in every municipality, website, telephone, text message and email. Over 49 days after its launch in May 2017, the initiative collected 180 705 suggestions, 99 of which were reflected in the national agenda and 1 718 were reflected in the policies of individual ministries.

Figure 34. Citizens providing suggestions to government staff at Gwanghwamoon 1st Street temporary office

Source: Government of the Republic of Korea.

New initiatives also aim to deepen community engagement and cocreate solutions with citizens. For example, in Italy, Laboratori di Quartiere (Neighbourhood Labs)[92] aim to shift away from the paradigm of a "smart city" towards a collaborative "Augmented City", requiring citizens not just to collaborate on the use of urban spaces, but to also become part of the ongoing transformation. In Canada, reference panels, citizens' assemblies and commissions (see Box 15) have been used to address complex problems, where different values can be in conflict or the self-interest of decision makers may undermine the legitimacy of their decisions. This is an in-depth, time-intensive format of engagement that can unearth new perspectives to policy problems and make clear what communities actually value.

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91. See https://gwanghwamoon1st.go.kr (in Korean).

92. See www.comune.bologna.it/laboratoriquartiere.

MASS LPB has been helping the Canadian government to organise reference panels, citizens' assemblies and commissions for government at various levels since 2007. These have helped to tackle some of the toughest and most divisive issues in public policy, in which complex value conflicts or ingrained political self-interest are involved (e.g. amalgamating municipalities).

As part of its work, MASS has introduced the Civic Lottery process in co-operation with Canada Post. MASS mails tens of thousands of Canadian households each year inviting residents to volunteer to participate in a reference panel or commission. Civic Lotteries produce random-representative cohorts for the communities involved around a specific issue under discussion.

For the deliberative work, MASS has developed the Reference Panel Playbook. Panels typically comprise 36 randomly selected residents who meet over several days to advise government on a specific policy issue. With an explicit mandate, the panels allow citizens to learn about a complex issue from leading experts and deliberate the value trade-offs involved with the help of trained facilitators. Going deeper than traditional consultation techniques, Reference Panels shed light on community perspectives and public policy choices.

To date, MASS has helped to organise 25 reference panels, citizens' assemblies and commissions for governments involving more than 1 000 Canadians, and reaching 250 000 households.

REFERENCE PANEL PLAYBOOK
How to run a deliberative process based on broader social value

Define the task	Ensure independence and balance	Create a curriculum	Host and facilitate
1	**3**	**5**	**7**
2	**4**	**6**	**8**
Plan your response	Who should be in the room	Involve the wider public	Time and money
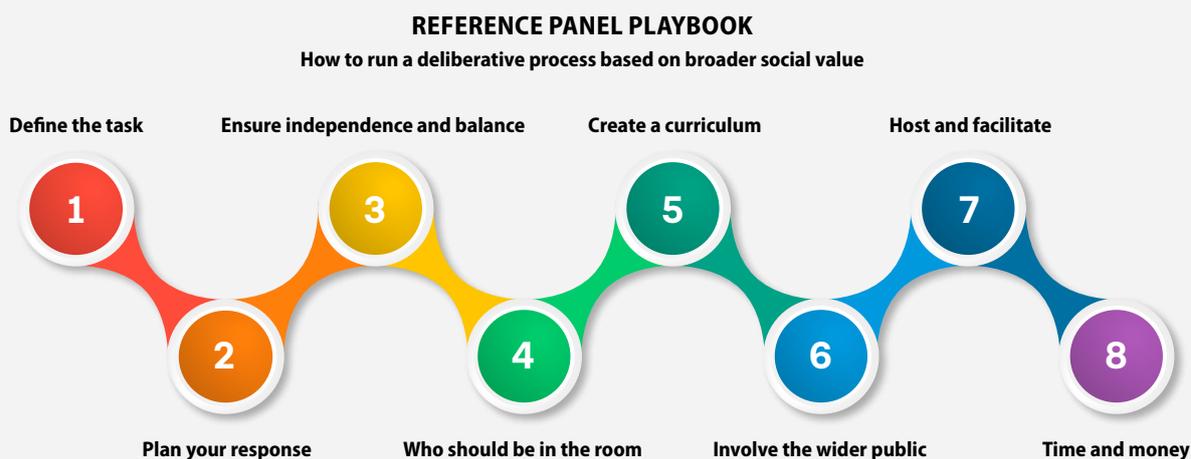
Source: Image based on MASS LBP; Government of Canada. See www.masslbp.com/the-reference-panel-playbook.

SYSTEMS INNOVATORS ARE LOOKING TO SCALE: FROM INCREMENTAL TO RADICAL

Not all systemic innovations are planned in advance. New concepts and approaches emerge from bottom-up experimentation, innovating by doing and technological developments outside the sector. However, governments need to apply solutions at scale, not just to discrete communities. Thus, experiments also need to be applied at the whole-of-government level, to ensure innovations benefit the whole user base equally (e.g. all students within the education system). This raises the question of how to foresee the systemic effects of incremental changes.

The section on identity highlighted the need to be aware of big technological developments, such as AI, blockchain and biometrics. However, many innovations start small or concentrate on a small process segment, but can have lasting ripple effects. For example, open standards and joint operating protocols (e.g. APEX) may have a continuous influence on how partnerships are forged and the kind of cross-sectoral innovations that emerge from the system. Identifying smaller issues within a system can become a source of legitimacy to work with larger problems. Roskilde Kommune has implemented an innovative complaints management system (see Box 16) where faults are used as a way to reach new solutions, some of them quite fundamental. Consequently, it is important to both identify potential levers for systems change – by looking for adequate scale and scope – but also remain open to potential from bottom-up developments.

Box 16: INNOVATION SPOTLIGHT: INNOVATIVE COMPLAINT MANAGEMENT (DENMARK)

In 2015, Roskilde Kommune developed an innovative complaints management system. It works by changing an organisation's understanding of complaints, by looking at complaints as errors and faults as a potential for new solutions. The aim is to improve the services offered by the municipality, by perceiving complaints as an opportunity to become a learning organisation.

Traditional complaint processing — **Innovative complaint management**

Theory of change: Creating new experience and learning with the employees will create the change
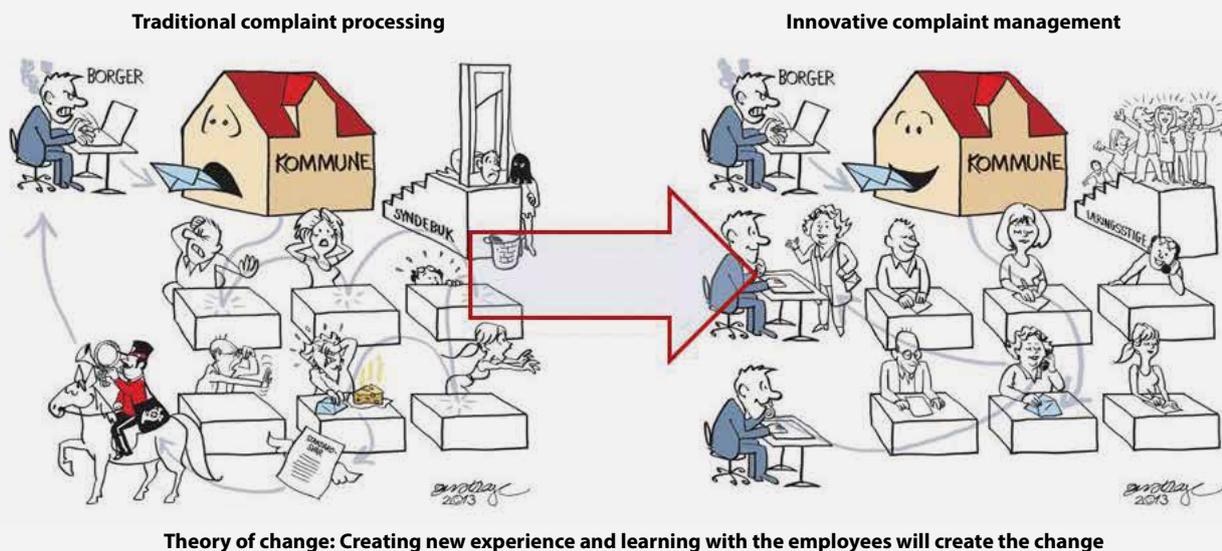
Source: Roskilde Kommune.

Many major systemic upheavals in government can come from things that may at first not seem innovative at all. One example would be to upgrade normal government operation protocols by making them more transparent. As systemic change often entails working across sectoral boundaries, one major lever of systemic change within the public sector is linked to public procurement and demand-based innovation. Governments in-source products and services on a daily basis, but their innovative and transformative nature (i.e. how they enable change for positive outcomes) is only rarely manifested in these transactions. Could governments in-source systemic change within a policy field?

Many OECD countries have developed procurement strategies for innovative goods and services at the central government level, while some have also used them at the agency level (see Appendix 1). However, OECD's survey on public sector innovation enablers (2017b) highlighted the significant confusion that still surrounds funding for innovation. Consequently, many policy makers do not explore demand-based strategies for public sector innovation in practice. This hinders the ability to systematically connect actors outside the public sector with government innovation efforts. Nevertheless,

innovators across countries are searching for ways to understand this area better and generate better information about public procurement in general. For example, Code for Australia[93] has worked in sprint cycles for several Victorian Government agencies to find, manage and communicate data in relation to public construction and infrastructure procurement. In Finland, Hansel OY has developed a real-time view of government spending.[94] Here, transparency has become the vehicle for innovation. When suppliers have access to current government spending, they may propose cheaper and more efficient alternatives. Greater clarity around spending not only makes transactions more transparent, it allows governments to work with outside partners towards a common, systemic purpose. Consequently, a simple operational upgrade can lead to a transformative "butterfly effect" within the public sector.

On the whole, governments should keep an eye on radical innovation projects, but also work to encourage bottom-up experimentation and change on the ground that may become a force for transformation in the future. Public sector innovators need to learn to see the systemic effects of incremental innovations.

93. See https://github.com/CodeforAustralia/dtf-genesis.

94. See www.tutkihankintoja.fi.

INNOVATORS USE SYSTEMS APPROACHES TO TRANSFORM THE PUBLIC SECTOR ITSELF

One of the most difficult topics facing innovators is how to incorporate change into government functions. Ensuring today's governments are ready to tackle 21st-century challenges means addressing issues such as the speed of change, technological upheaval and persistent wicked problems, among others. OPSI is currently conducting the first-ever review of a country's public service innovation system – in this case, Canada.[95] The process and results may also provide lessons learned for other countries. The aim is not only to offer public sector innovators in Canada static solutions (e.g. how to make innovation flourish in the country here and now), but also to design an innovation system that is adaptable and robust enough to cope with continuous change.

One of the major topics of concern for public sector innovators in Canada and elsewhere in the world is how to retain talent within the public sector that would enable broader systems change. Innovation is still an emerging topic in many traditional

HR management frameworks, strategies and programmes, and as measures become more concrete – directly influencing civil servants' performance and enhancement – innovation becomes noticeable by its absence (see Appendix 2). However, governments are facing the same challenges as other sectors: jobs are disappearing due to automation and digitalisation which require altogether different mind-sets and skillsets.

These skills may not always be digital, although awareness of technological potential is necessary. Skills that are becoming hardest to substitute with machines – including innovation and creativity – are the most difficult to recruit (see Figure 35). These are the skills most needed also for systems change. For example, some innovators that possess these abilities today are used to working with challenges in a "gig economy" (i.e. working on a challenge-basis rather than in government silos). They expect transformative leadership with autonomy, efficacy and affective commitment. They are attracted to governments due to their civic drive, but are driven away by the inability to apply it in pragmatic ways for better results. Hence, it can be difficult for governments to retain or attract upcoming talent. The Free Agent and GC Talent Cloud case (see page 71) works to address this issue.

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95. OPSI will be publishing a review of the public sector innovation system of the Government of Canada in mid-2018.

Figure 35. The hardest skills to find are those that cannot be performed by machines

Q: How difficult, if at all, is it for your organisation to recruit people with these skills or characteristics?
Q: In addition to technical business expertise, how important are the following skills to your organisation?

Difficulty in recruiting people with skills
Respondents who answered
"somewhat difficult" or "very difficult"

Importance of skill
Respondents who answered
"somewhat important" or "very important"

Skill	Difficulty
Creativity and innovation	77%
Leadership	75%
Emotional intelligence	64%
Adaptability	61%
Problem solving	61%
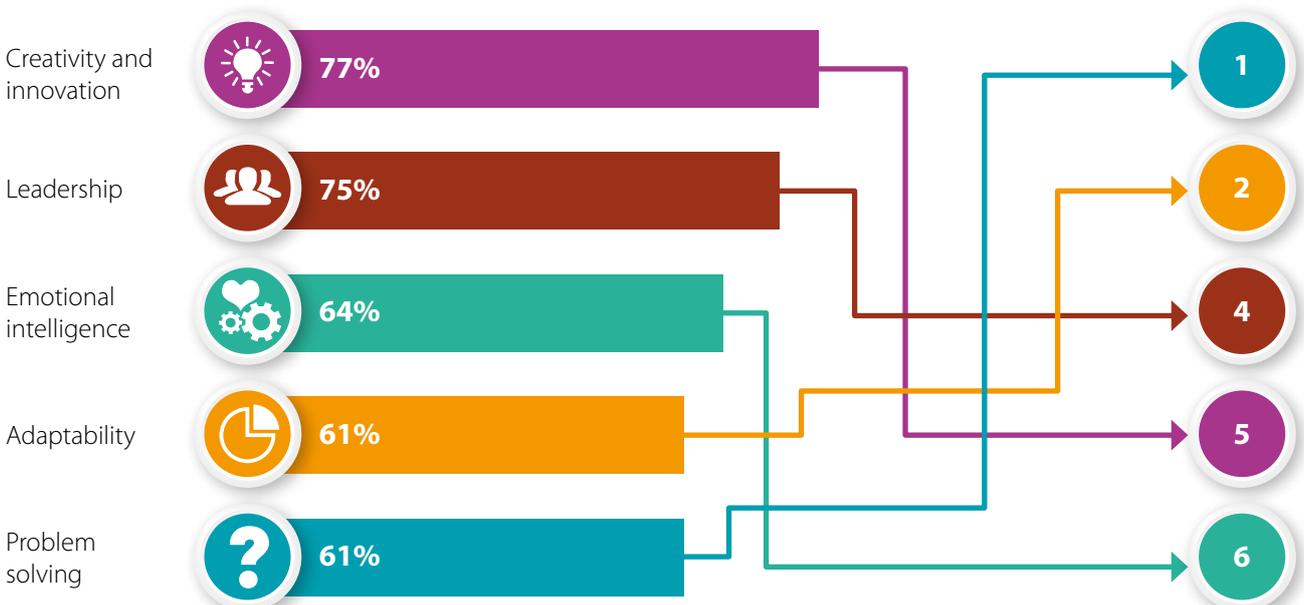
Source: OECD (2017h: 34).

These initiatives recommend that governments refrain from tinkering around the edges of existing HR systems, and instead experiment with more systematic solutions for the mobility of talent across the public sector.

Other governments are trying to build momentum for change from within to help ensure existing civil servants are not ignored by a focus on new teams – a frequent criticism of organisations such as innovation labs, digital service teams and other similar entities. For example, in 2015, the Government of Korea introduced the Personnel Management Diagnosis system with an index to diagnose the level of personnel management innovation in each agency. Using existing structures is a way to internalize the core value of innovation and secure it as a driving force behind management change. The Wicked Lab in Australia has taken an even more granular approach, by developing an Online Tool for Systemic Change (Box 17). The connected tool supports community transitions in real time. It takes an ecosystem approach and increases the coherence of all initiatives in a community that underpin a wicked problem, thus aligning actions and goals.

Box 17: **INNOVATION SPOTLIGHT: WICKED LAB ONLINE TOOL FOR SYSTEMIC CHANGE** (AUSTRALIA)

In 2017, the Wicked Lab developed a tool to help communities and governments address wicked problems (all types) by creating the enabling conditions for systemic change. It focuses on assisting communities to transition to more coherent and effective ways of working. It also assists governments to undertake the unplanned exploration of solutions with communities and the planned exploitation of community knowledge, ideas and innovations. The whole product solution includes apps, education programmes and forums, and was developed to support use of the tool by governments and communities.

Source: Wicked Lab.

HOW TO START USING SYSTEMS APPROACHES?

OPSI has identified five different trends emerging in the field of systems approaches: (i) embracing complexity, (ii) transcending administrative boundaries, (iii) using better problem diagnostics to initiate systems change, (iv) looking for ways to move from incremental change to radical transformation; and (v) using systems approaches to transform the public sector itself. Systems approaches are becoming increasingly popular with public sector innovators who want to deliver real value to citizens, in order to address their complex needs. In so doing, innovators are using new tools and methods to get to the heart of the problems – not only "nudging" citizens, but really understanding what is causing their behaviour and the consequences it will deliver in the future. Meanwhile, citizens are expecting more from their governments. A variety of innovations have been developed that are breaking silos, using new ways to analyse data in systemic ways, discussing the value trade-offs associated with innovations and approaching the scale of change needed in government. The following case studies explore these trends in more depth.

The last of these developments – using systems approaches to transform the public sector itself – is probably the most difficult and raises a number of questions: Where to get started? What is the best way to counteract push-back from the current system, established norms and culture that are not addressing the challenges of today and tomorrow? How can implementation of innovation for systems change avoid becoming destructive (change for the sake of change)?

The following three case studies highlight different strategies. The first starts with a non-threatening technical solution and then approaches the core business (APEX), the second takes the innovation slightly outside the current system (Predictiv), and the third adopts a portfolio approach – implementing a step-by-step proof-of-concept case while advancing the transformative innovation on the side (Free Agents and GC Talent Cloud). While these are not the only options, their practises and the challenges they face provide a variety of lessons.

The route OPSI has taken is to develop a service for governments to help them initiate and push forward systems change processes. The nature of the problem itself determine the way that OPSI introduces governments to systems approaches – even to the level of problem framing. In this way, it has become an objective unifier of different stakeholders connected to complex problems, and a facilitator of discussions in interactive workshops designed to unpack issues and re-examine problem definitions, knowledge gaps and potential solutions. OECD does not have to be the sole architect of these processes; countries can launch these activities themselves with the assistance of systems thinkers. However, OPSI advises all governments to bear some key recommendations in mind.

Recommendations

The time for piecemeal solutions in the public sector is over. Governments interested in successful innovative solutions need to take into account the complex nature of problems in the real world. Systems approaches can help governments tackle cross-cutting issues and analyse problems by focusing on the objectives the public sector wants to achieve, redrawing organisational boundaries based on those objectives, and bringing together different stakeholders able to transcend public sector capacities. To make the most of systems approaches, OPSI recommends that governments:

1. Focus on a problem, not a method. There are a variety of available systems methods ranging from the very quantitative to the very qualitative. It is important to diagnose the problem and the knowledge gap before choosing a method to apply. Systems approaches and methodologies are multifaceted for a reason – they deal with complexity – so there is no shame in asking for expert help. In fact, governments should also seek non-expert help, as the problem cannot be fully defined without input from all those involved. It is better to take more time in the beginning to understand the problem at hand, and define it well, rather than becoming locked into a solution from the outset.

2. Apply new problem diagnostic tools. The more interoperable data become, the more they can shed light on real time practice. New problem diagnostic tools – digitally or ethnographically co-created – can be a great way not only to obtain a different perspective on complex issue, but also to break down silos. Connecting the dots numerically, or creating a persona that speaks volumes, can create more legitimacy to push for more transformative changes organisationally.

3. Analyse potential systemic effects and value trade-offs of innovations. Nothing is perfect. The more systemic innovations become, the more they create winners and losers. Part of adopting a systems thinker mind-set is to analyse which public values innovations are actually trying to address, what are the trade-offs, and what is actually happening in practice (the butterfly effect).

4. Stay open to emergent, bottom-up change. The levers of systemic change may not always come from top leadership pet projects, but from the corner of the desk of a civil servant or coder. Perceiving the potential in small things and creating room for them to grow is a skill in itself. Become a catalyst and a sponsor for home-grown innovators.

5. Experiment with transformative change inside government. Governments have to lead by example. Experiments with systems approaches in back-office government functions can ripple horizontally across government and outward to other sectors and citizens. Governments may not always know the best way, but they should have the courage to experiment.
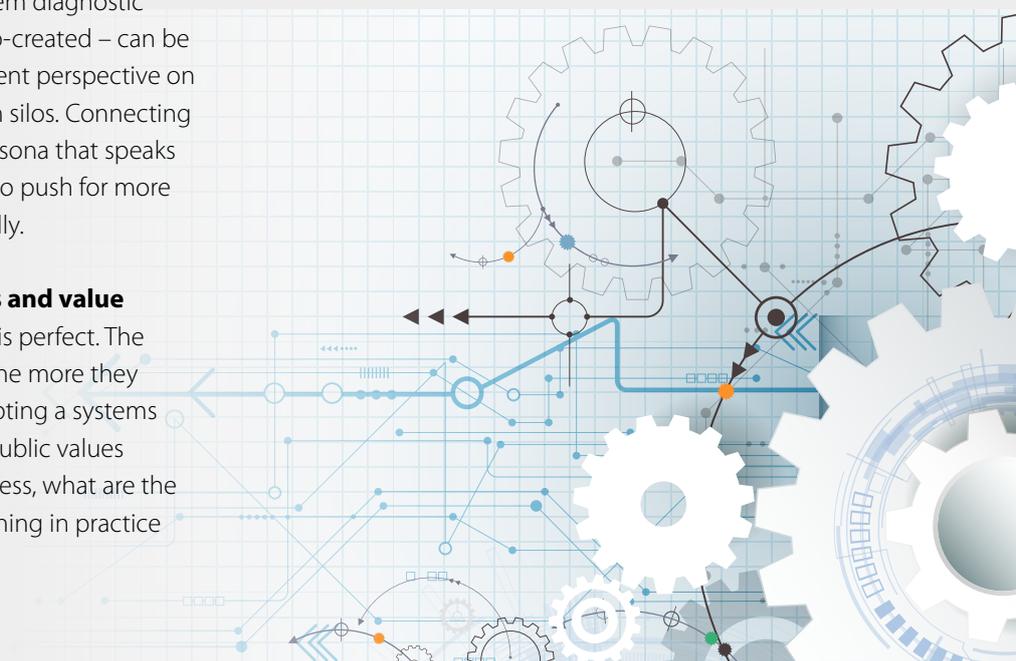
CASE STUDY

APEX – Singapore

APEX[96] is a whole-of-government platform which establishes common application programming interfaces (APIs) (see Box 18) that allow public agencies to share data and services with other agencies and private entities. APEX simplifies the communication protocols by which different government programmes can talk to each other, providing uniform governance, consistency and reliable performance. It enables innovation through a central catalogue and self-service portal where innovators can select common protocols to create new services and experiences for citizens. APEX thus addresses one of the biggest systemic challenges facing governments in the pre-era of machine-to-machine learning and AI – data and system interoperability.

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96. https://portal.apex.gov.sg (only accessible via intranet). The APEX Introduction Video can be downloaded here: https://drive.google.com/file/d/0B84-8GlFcQYKNVdmVVFMWHRVeWs/view?usp=sharing.

THE PROBLEM

In today's fast-paced and digitalised world, government agencies need to evolve quickly to stay relevant. Old methods of data acquisition and transfer are now too slow to satisfy citizen's needs. Consequently, there is a desire for innovative and integrated government services through which data can be shared seamlessly between public agencies. Equally appealing are the potentially more tailored and citizen-centric products businesses can offer if given access to selected agency data. Government agencies therefore need technological solutions to efficiently share data and systems, in order to provide more complete and citizen-centric services. However, data and systems interoperability is not easy. Data-sharing standards are often inconsistent and fragmented, while security needs and privacy concerns frequently dissuade governments from attempting whole-of-government platforms. With the exception of the most technologically competent, the majority of civil servants will encounter difficulties in implementing these new processes and solutions.

AN INNOVATIVE SOLUTION

In 2017, the Government Technology Agency of Singapore (GovTech) launched APEX, a centralised whole-of-government platform designed to allow all government

agencies to share data among themselves and with private enterprises through APIs. Prior to the launch, APEX was a small feature within a platform-as-a-service (PaaS) product that allowed hosted services to expose APIs to external services. However, it became evident that the API-hosting technology could be extended to meet a wider need across government agencies, providing a simple way to share data. The government spun off APEX as a separate project with a much more ambitious scope – to secure data-sharing, make API management user-friendly and increase the visibility of available APIs.

Figure 36. The difference in data sharing through traditional methods and through API gateway


Source: Government of Singapore.

APEX provides a secure data-sharing environment where agencies' APIs are protected by authentication policies that conform to the latest security standards (see Figure 36). Round-the-clock monitoring and transaction logging also ensure high system availability and access tracking. Most importantly, APEX allows data to be shared between the government intranet and the public internet by providing a bridge between the two networks in a safe and secure setup. This makes it possible for government agencies to publish APIs in order to share data hosted in the intranet with commercial entities deploying services on the internet. For example, one of the pilot projects, myInfo, was developed to share basic citizen data hosted on agency databases with banks to make it more convenient for citizens to set up bank accounts. This allows the private sector to build businesses using open government data. It also reduces substantially the number of times citizens need to register their information with the government – from multiple occasions to just once.[97]

97. See www.singpass.gov.sg/myinfo/intro.

Importantly, APEX simplifies API management by providing a user-friendly portal for both experts and ordinary users within the public sector (see APEX design principles in Figure 37). This is a rarity in government – the creation of user-friendly systems inside the public sector is often overshadowed by the prioritisation of intuitive solutions on the front-end for citizens. Yet, making such systems work inside the public sector – where IT skills remain scarce – is the foundation for future innovation. In addition, APIs served through APEX are registered in an API catalogue that can be freely browsed by other users. This encourages sharing and avoids the creation of digital silos or duplication of efforts. Users can browse and search the catalogue for relevant APIs, which may spark ideas for collaboration with other agencies or combining data in creative ways. The ability to perform self-registrations and request access to other agencies' APIs, enables agencies to begin using the data they need without significant administrative overheads. The portal also provides a repository of information to guide users in on-boarding as data consumers or providers. APEX professional services also assist agencies to improve their general standards of API design and security.

Figure 37: APEX design principles

Scales intelligently

User-centric

Promotes sharing

Built for extensibility

Makes security simpler
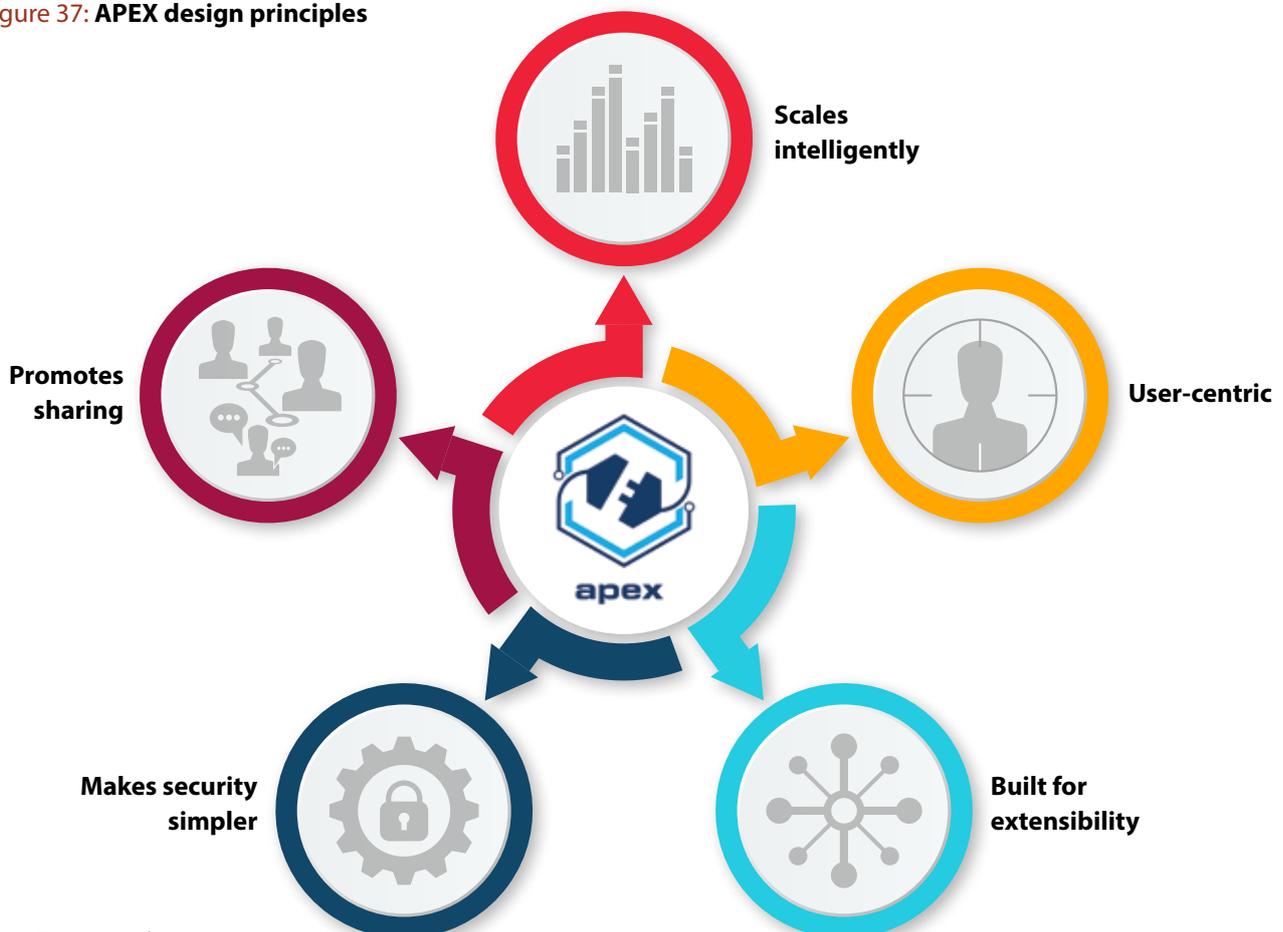
apex

Source: Government of Singapore.

APEX was built by an in-house engineering team around the concept of agile development, thus allowing the rapid addition of new features to the platform. Further modularity was ensured by building the platform on micro-services architecture powered by RESTful APIs.[98] This allows APEX to easily integrate with new systems both upstream and downstream.

NOVELTY

APIs and API gateways are no longer new or innovative technologies. The innovation and value of APEX stems from making these technologies more accessible and increasing their adoption in government. Interconnection and interoperability projects are currently receiving the greatest attention. For example, in Europe the ongoing Once-Only Principle Project[99] is working to pilot solutions for 50 organisations from the European Union and Associated Countries. When technology supports secure and seamless data exchange, the possibilities are endless.

98. Learn more here: https://restfulapi.net.

99. See www.toop.eu/about.

RESULTS AND IMPACT

APEX removes the need for users to handle many of the security challenges involved in serving APIs to a large consumer base. Since its launch in July 2017, APEX has steadily acquired new users, and on-boarded nine projects from across five agencies. These projects served a total of more than 625 000 API calls in a month. These figures are growing rapidly as APEX gains traction as a reliable API platform. For its success in this area, APEX recently received an award from ASEAN (see Figure 38).

USER PERSPECTIVE

The APEX team (see Figure 39) was deeply involved in the on-boarding of its initial users, many of which have become trusted partners. Their positive experience with APEX has spurred them to readily suggest new features to improve their services. APEX's professional services team regularly engages users in dialogue to better understand their needs. This enables them to identify and develop high-value, new user-centric features that can be added to APEX.

Figure 38. **The APEX team receiving the silver award at the 2017 ASEAN ICT Awards Ceremony under the public category**

From left to right: Dr Yaacob Ibrahim, Minister of Communications and Information, Singapore; Johnson Koh and John Tng of the APEX team; and H.E. Mr Masahiko Tominaga, Vice-Minister, Ministry of Internal Affairs and Communications of Japan. *Source*: Government of Singapore.

CHALLENGES AND LESSONS LEARNED

APEX is a model of innovation within tight restrictions that has succeeded in holding on to its vision. The team has navigated extensive government procedures and standards to redefine what it means to share data securely. APEX is reliant on a dedicated team with diverse skill-sets able to provide a clear vision and the impetus to deliver it with speed. Starting small as an in-house project, they had the freedom to self-manage, experiment, fail fast and regroup quickly.

As APEX's success depends on getting partners on board, the platform had to be built with the user in mind. APEX needed to remove barriers to entry for agencies using the platform based on user feedback. As such, the APEX team followed the agile methodology to iteratively and incrementally design, build and validate features of the platform. This helped the team to break down large problems into incrementally deliverable parts and empowered them to respond promptly to user feedback, as well as experiment with new, high-value features. The team was thus able to focus on releasing a minimal viable product early for testing. This drove a virtuous cycle of testing, iteration and extension, which allowed the team to release regular updates with enhanced features, bug fixes and the latest security patches.

There are, of course, obvious trade-offs between adhering to government security standards and providing seamless data-sharing between agencies which APEX needs to balance. Project challenges identified during the planning phase included the need to bridge an internet–intranet separated infrastructure and comply with strict security standards. These constraints shaped the architecture and design of APEX.

Continuing challenges include scaling APEX's systems to adapt to demand and maintaining system stability as the user base grows. The team has automated the deployment and configuration of most subsystems to quickly and reliably scale-up to meet demand. In order to maintain system stability, monitoring capabilities are continuously enhanced to ensure any system issues are noted and addressed in a timely manner.

Figure 39. **The APEX team**

Source: Government of Singapore.

CASE STUDY

Predictiv – United Kingdom

PREDICTIV

Predictiv[100] is an online platform for running behavioural experiments. It enables governments to run randomised controlled trials (RCTs) with an online population of participants, and to test whether new policies and interventions work before they are deployed in the real world. After a short design phase, the tests take one to two weeks to complete, enabling policy makers to obtain responses to questions that would otherwise have taken many months (or years) to answer. As such, it has the potential to profoundly change governments' working methods. While time constraints and political realities sometimes make it hard to run "field trials" on live policy, Predictiv makes experimental methods more accessible. However, it remains to be seen whether Predictiv will initiate a wider cultural shift in government departments and regulatory offices regarding the ways policies and processes are changed and implemented.

100. See www.predictiv.co.uk.

THE PROBLEM

Evidence is becoming increasingly important in policy making (OECD, 2016b). Even the best ideas can fail during implementation, because human behaviour is hard to predict, especially in different contexts. However, the policy-making process itself is not always conducive to producing or making use of available evidence. The speed of change is increasing and reacting to new problems on a daily basis does not leave sufficient time to review existing evidence for informed decision making. Parliamentarians or officials drafting a law do not always have six months to wait for their questions to be answered.

Governments possess tools to decrease uncertainty in policy making, but almost no time to use them in practice. For example, RCTs allow policy makers to evaluate what does and does not work in terms of changing behaviour and improving public policy outcomes (see Figure 40). However, they can take a long time to set up correctly and often need to be repeated in different contexts. It can take months or even years to run a research study or to put an RCT into the "field". Furthermore, traditional research methods (e.g. focus groups) are often bound by their size and, in many cases, reveal more about what a small number of people "say they do", rather than what they "actually do" in practice. Practical constraints – both time and money – limit the number of RCTs or focus groups that can be run and the different versions of a policy that can be tested. These complexities inevitably hold back the spread of experimental culture in government.

AN INNOVATIVE SOLUTION

Predictiv was launched in 2016 by BI Ventures, a team within the Behavioural Insights Team (BIT) (see Box 19) that builds scalable digital products that address social issues.[101] Predictiv was built on the premise that running RCTs with an online pool of participants is a quicker, cheaper and easier method to test for isolated behavioural triggers.

Inspired by academic "lab experiments" run through platforms such as Amazon's Mechanical Turk,[102] BIT started to question if a similar approach could be used by policy makers. Effective use of existing platforms such as Amazon

101. See www.behaviouralinsights.co.uk/ventures.

102. See www.mturk.com. MTurk is a marketplace for work that requires human intelligence and enables customers to access an on-demand workforce.

Box 19: WHAT IS BIT?

The Behavioural Insights Team was created by the Prime Minister's Office in 2010 to apply behavioural science to public policy. In February 2014, BIT became a social purpose company, owned by the UK Government, Nesta (an innovation charity) and its employees.

BIT aims to make public services more cost-effective and easier for citizens to use; improve policy by introducing a more realistic model of human behaviour; and wherever possible, enable people to make "better choices for themselves".

Source: www.behaviouralinsights.co.uk/about-us.

Figure 40: **Randomised controlled trials method**

Population is split into 2 groups by random lot

Intervention

Positive change

No change

Outcome for both groups are measured

Control
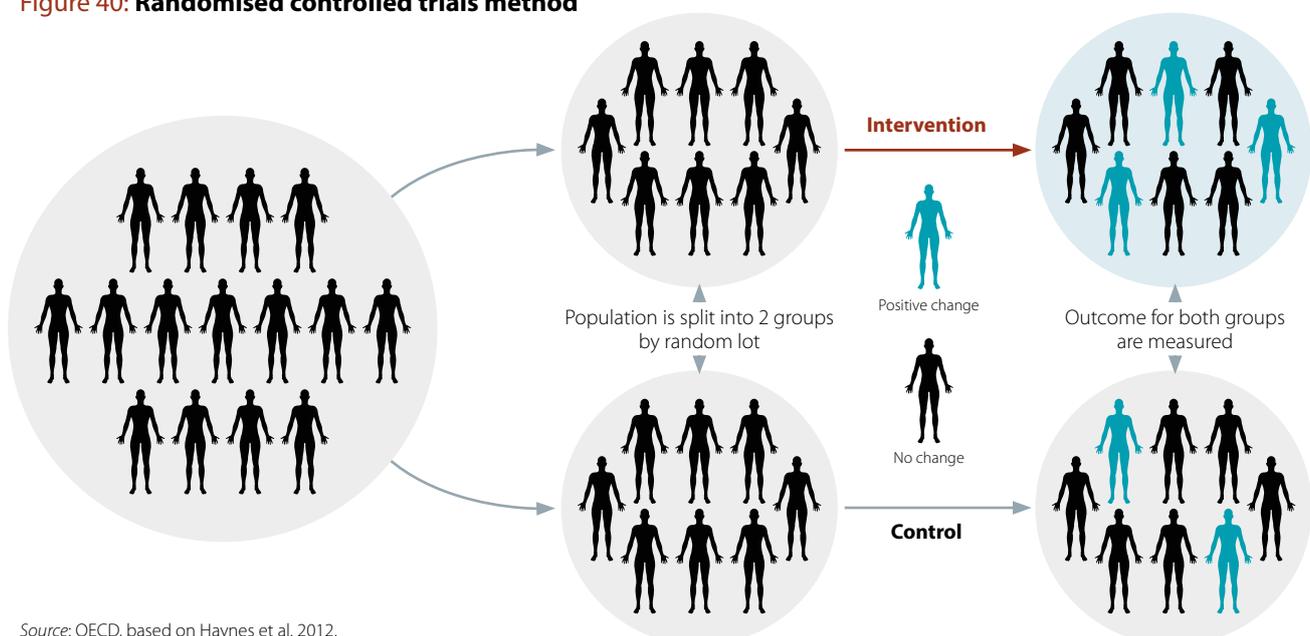
Source: OECD, based on Haynes et al. 2012.

Practical

By drawing on a large online panel of participants, Predictiv avoids many of the practical constraints of traditional research and can run research programmes that wouldn't be possible in the 'real world'.

Rapid & robust evidence

Predictiv recruits participants, runs the online research and summarises findings, generating quantitative evidence fast. We can create nationally representative samples or target specific groups, e.g. men 18-25, in work, with incomes <£20k.

Test a range of ideas

Predictiv tests different versions of a new policy, programme or communication campaign at lower cost vs. traditional research. For example, Predictiv can evaluate many versions of a letter for recipient comprehension.

Source: www.predictiv.co.uk/governments.html.

Mechanical Turk (MTurk) required substantial technical expertise, which represented a major barrier to entry for everyday users. Accordingly, BIT decided to develop its own more user-friendly platform, leveraging its team's technical expertise in behavioural end experimental economics to design and test interventions. The key question was how to reach large numbers of people. In an effort to address this issue, BIT partnered with organisations with experience in using online panels for simple survey-type research. The biggest technical challenge involved randomly allocating different "arms" of a trial to different participants in ways that maintained scientific rigour. Once this challenge was solved, BIT validated the platform through a series of tests to ascertain whether the results were consistent with equivalent, rigorous academic research.

Since its launch, Predictiv has enabled policy makers to obtain answers quickly, within critical time frames, allowing changes to policies as they are being developed. Predictiv makes it easier for a policy team or organisation to run an online RCT from start to finish, without requiring a team of behavioural scientists (see Figure 41). Users can choose from a selection of experiments designed by BIT and based on robust behavioural science and experimental economics methodologies. The platform then recruits the participants, runs the online research and summarises findings, generating quantitative evidence fast.

Predictiv also draws participants from a high-quality and large-scale online pool of adults across the United

Kingdom (up to 4 million people) who have consented to taking part in online research. This allows Predictiv to target research by demographics such as gender, age, income and education. This approach avoids many practical constraints of traditional research and enables Predictiv to conduct tests that would not be possible in the "real world". The online platform also allows testing of different versions of policies, programmes or communication campaigns at a lower cost compared to traditional research. This helps to identify which iteration is most effective at achieving the desired outcome.

Government departments are using Predictiv to tackle a wide range of policy questions. These include testing whether citizens understand new policies and processes (interpreting risk, knowledge of actions they need to take, and data consent and sharing); the effectiveness of new ways of working (e.g. how the new online component of a government programme will function); and responses to different choices (e.g. the impact of changing the way prices are presented). For example, Predictiv has been used to test, among others, whether changes to the presentation of credit card statements will increase the size of monthly payments consumers are prepared to make, whether changes to the way consent is sought will increase the number of citizens who agree to share their data with public service providers; and whether changes to an online tax form will increase the accuracy of the information provided by users. In each of these cases the answer was "yes". Apparently small changes can have a big impact on the choices people make.

BI Ventures plans to increasingly automate the platform by building and making available standard "templates" that cover the full range of questions policy makers might want to answer. It is also possible to use Predictiv outside the United Kingdom, as the platform already has links to international online panels.

NOVELTY

While Predictiv was inspired by academic online experiments running on private platforms, it is the first initiative of its kind to make RCTs accessible to policy makers. Policy makers can perform rigorous experiments online in a fraction of the time normally taken, without the need for a PhD in experimental economics. This enables them to test policy suggestions in a matter of days to ascertain whether they have the desired effect.

RESULTS AND IMPACT

More than 30 trials have been conducted via the Predictiv platform to date and the results are already shaping government policy. For example, the Government Equalities Office and the Department for Work and Pensions are using the results of one trial to change government communications around Shared Parental Leave. In addition, the Greater Manchester Combined Authority is rolling out a version of simplified Privacy Notices following another trial. Predictiv is only getting started and many other trials are in the pipeline.

USER PERSPECTIVE

User experience with Predictiv has been positive. The initiative has helped the Money Advice Service run a range of online RCTs as part of its Financial Capability Lab, which was created to test a large set of initial ideas to address financial challenges affecting people in the United Kingdom. "Predictiv enabled us to economically generate robust evidence of whether the ideas could help people overcome some of the key barriers to building a savings buffer, managing credit use and seeking financial help" (Money Advice Service).

The United Kingdom's Office of Gas and Electricity Markets (Ofgem) used Predictiv to optimise a letter targeting disengaged energy customers: "We were delighted with the efficiency of the setup process, the helpful advice provided by the team and the speed at which we obtained results – the whole thing was turned around in a matter of days. We are definitely hoping to use this service again in the future."

CHALLENGES AND LESSONS LEARNED

In general, BIT takes a portfolio approach to supporting innovations. Some innovations will fail, while others succeed. With Predictiv the main challenge was to identify a technological solution for the interface between the experiment and the online panels. As the platform is not restricted to a defined set of trials, the team continuously develops the platform to keep up with government interest.

Predictiv as a whole has great potential, as it makes robust experimental techniques more accessible to policy makers, who in many cases lack the skills or time to set up larger experimental trials. However, once this "low-hanging fruit" has been captured, the challenge will be to design increasingly complex experiments that closely mirror decisions in the "real world", and then integrate this approach with the full policy cycle (Figure 42). Moreover, digital platforms that permit the inclusion of near real-time user perspectives in policy development indicate a more systematic change in the making – the advent of real-time digital governance, where the public sector can iterate, test and change policies instantaneously in the present.

Figure 42. **Behavioural insights and the policy cycle**
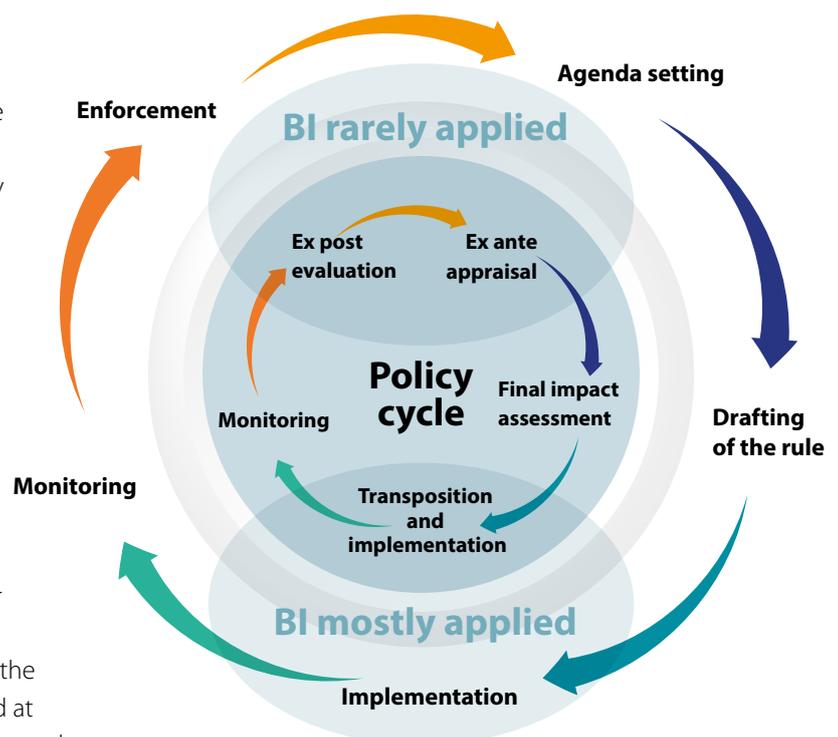
Source: OECD (2017f: 53).

CASE STUDY

Free Agents and GC Talent Cloud – Canada

The Government of Canada (GC) has been testing several models for recruiting and mobilising talent in the Public Service in the digital age. The most ambitious of the projects is the GC Talent Cloud, which aims to become a validated, searchable repository of cross-sector talent. It envisions a digital marketplace where workers have access to rights, benefits and union representation, while retaining the flexibility to choose work inside and outside government, as offered. It represents a departure from the permanent hiring model in the Public Service, organising talent and skills for project-based work. Still at the visionary stage, it has produced several spin-off projects that are becoming successful in their own right. One of these is the Free Agent model, which was originally created as a pre-GC Talent Cloud test of its core design elements. While the Free Agents Model has become a scalable programme, GC Talent Cloud is still getting up to speed and is currently in the design phase. This study looks to Canada to see if governments can lead paradigmatic shifts in a digital age or only innovate in incremental ways.[103]

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103. Canada's Free Agents and GC Talent Cloud are also featured in the 2018 World Government Summit's *Edge of Government* exhibit. See https://edge.worldgovernmentsummit.org.

Trend 2: Systems approaches and enablers

THE PROBLEM

In the face of increasingly complex and rapidly evolving challenges, policy makers have to work across silos, bring in new skills and capabilities, and adopt a more horizontal, fast-paced working style. Managers have to mobilise diverse skill sets rapidly to meet shorter project timelines. In parallel, the digital transformation is calling for much flatter organisations, with significant numbers of jobs in the knowledge and service sector likely to be made redundant in the coming decade due to machine-to-machine learning and AI. In the face of this new reality, OECD has identified a need for new leadership styles, working methods and innovation skills in the Public Service (OECD, 2017d, 2017i). However, most governments still rely on workforce models built for a different era.

In Canada, this scenario centres on indeterminate hiring[104] with a temporary workforce complement, which is poorly suited to deliver on the aforementioned challenges. Such employer-driven hiring models result in inefficiency: recruiters have to contend with high application rates to process, high levels of duplication, low visibility for employee skills, low levels of autonomy in choosing work and low retention rates for top talent. All of this is cost and time intensive, with mixed results in terms of "best fit" hiring, particularly for evolving jobs. It currently takes between 90 working days and one year to hire new people.[105] This timescale is inadequate for project-based work, an area of increasing demand in a rapidly evolving digital world.

A hierarchal culture and outdated work systems compromise the Public Service's ability to recruit top talent, and contribute to the loss of public sector "innovators" to the private sector. The Public Service must become faster at bringing in new talent and better at maximising existing talent and accessing new skills. However, it is not enough to invest in piecemeal solutions and streamline existing systems to peak efficiency, as such approaches address only a fraction of real needs.

AN INNOVATIVE SOLUTION

Inspired by the 2012 Deloitte GovCloud concept (Tierney, Cottle and Jorgensen, 2012), the Government of Canada proposed to restructure government workforces to meet the changing needs of citizens in complex environments. In this context, Natural Resources Canada (NRCan) set out to test a new form of workforce planning – the GC Talent Cloud. The central idea was that the GC Talent Cloud would become a new digital platform of pre-qualified talent with a competency validation process and easy searchability. Free Agents was one of its earliest pilots to test out the feasibility (including market viability, efficiency savings, psychological stress on workers in the gig economy, competency modelling and screening design) of a new type of workforce (see Boxes 20 and 21). The objectives of the pilot were threefold:

1. Demonstrate the benefits of the cloud-based free agency model for human resources.

2. Support, develop and retain talented public servants.

3. Increase the capacity of the Public Service to innovate and solve problems.

As many different types of work could benefit from the model, NRCan's Innovation Hub chose to forego the choice of a specific background or skill-set for Free Agents. Instead, the Innovation Hub developed a set of attributes and behaviours that the Public Service innovation community considered valuable for innovation and problem-solving in their organisations. These attributes formed the basis for the pilot's screening process. Candidates who successfully
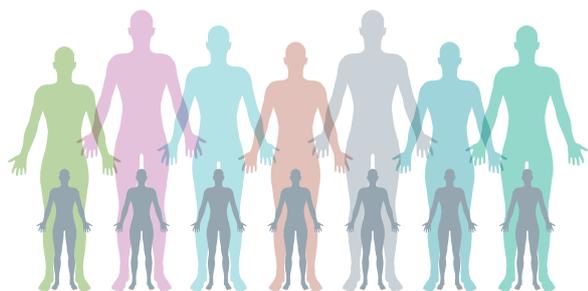
Ask NOT *"What types of work are being done?"*
BUT *"What is your talent force capable of?"*
GC Talent Cloud project proposal

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104. Hiring people within certain specific brackets of skills and competences.

105. Information drawn from the Talent Cloud Proposal (2017).

Box 20: **WHAT ARE FREE AGENTS?**

"Free Agents" are individuals who possess successful innovation and problem-solving attributes and wish to work in a project-based manner. They are able to choose their work and undertake project-based opportunities across the Public Service. They have the freedom to select work that matches their skills and interests, which allows them to make a contribution that they find meaningful.

Source: Government of Canada

The GC Talent Cloud model

This model represents a vision of a digital repository of pre-qualified talent, where the curation and distribution of talent is optimised for fast placement for project-based work.

Talent is pulled from the repository using a term hiring mechanism, ensuring the protection of workers' rights.

The credentials of those in the GC Talent Cloud are validated and preserved in a way that reduces duplication, increases credential integrity and vastly heightens the scope of talent available to hiring managers.

Source: GC Talent Cloud project proposal from Government of Canada

Free Agents GovCloud model

This programme screens and selects public servants for their attributes and behaviours rather than their traditional educational credentials.

It functions as a pilot test to assess whether these attributes will be valuable for project-based work and will have an impact on problem solving and innovation in the Public Service.

The speed and convenience of the model provides a unique opportunity for managers to rapidly staff their projects with little risk.

Source: Free Agent case description.

demonstrate these core attributes are offered lateral deployments to positions in a special unit of the NRCan Innovation Hub. Because of the lateral deployment model, there is flexibility in the selection process and assessment methodology. Deployments do not need to have clear priorities or undergo a competitive process for appointment.

The Free Agent pilot tracks performance, project outcomes, costs, risks and benefits in order to make broad, data-driven recommendations about the long-term viability of the potential full-scale GC Talent Cloud model (see Figure 43). Work is underway to develop a profile of skills and competencies useful for innovation in the Public Service. Once developed, this profile will provide the framework for

Figure 43: **Benefits of the Talent Cloud model**

BENEFITS

GET THE SKILLS YOU NEED
Talent Cloud sees people, not boxes, allowing managers to hire for cross-classification skills sets, validating candidates for work in multiple classifications simultaneously.

INCREASED OPPORTUNITY FOR DIVERSITY
With an increased rate of turnover in project work and more porousness, there is an opportunity to bring more diversity to the Public Service.

FASTER HIRING
The Talent Cloud design is expected to dramatically reduce hiring manager time in the HR process, reducing risk through better credential verification and "best fit" matchig tools.

RISK MITIGATION

REVERSIBLE
If the Talent Cloud model proves undesirable or not viable, it can be taken apart without damage to people or the current HR system.

COMPLIANT WITH EXISTING POLICIES
The Talent Cloud design is compliant with all existing HR legislation,classification, and collective bargaining agreements.

SUPPLEMENTAL TO EXISTING HR SYSTEM
There is no requirement to replace the exisitng HR system in order to test the Talent Cloud model.

Source: GC Talent Cloud project proposal from Government of Canada.

Free Agents to pursue training and learning opportunities. This profile will draw from existing research undertaken by groups such as the OPSI (OECD, 2017i) and Nesta.[106]

NOVELTY

While Deloitte's GovCloud paper created significant enthusiasm, globally the closest any government has gotten to testing the idea in practice is the NRCan Free Agents model. Other pre-GC Talent Cloud tests in Canada include the micro-missions platform, open badges (verifiable digital micro-credentials), learning pathways and upward feedback.

RESULTS AND IMPACT

The Free Agents programme has now outgrown the single department in NRCan and is scaling, having identified a partner department to hire the next 30 Free Agents.

The pilot is currently undertaking a formative evaluation, but initial feedback surveys show that both the Free Agents and hiring managers have benefitted greatly from the programme's activities. In the first year of the pilot, the programme staffed 42 projects in 20 departments. The projects spanned a broad range of business lines including policy development, communications, science and research, and computer programming. Projects ranged between 2 to 18 months in length; however, the majority (76%) were between 6 and 12 months.

Before candidates enter the programme, many have acted temporarily in positions above their substantive level for long periods. They are frequently encouraged to be innovative; however, during competitive processes many feel they cannot demonstrate their innovation capacity and believe that doing so actually reduces their chances of career advancement. Once in the programme, job satisfaction and enjoyment are considerably higher for Free Agents compared to the rest of the Public Service. Furthermore, the vast majority of Free Agents report new opportunities to apply existing skills and develop new skills, greater access to the innovation community and a higher likelihood of remaining in the Public Service.

Though still higher than the general Public Service, Free Agents reported relatively low levels of agreement with questions of diversity, balancing work and personal life, and mental health. Data from monthly surveys and

journals showed that Free Agents felt some pressure to perform at a consistently high level and ensure that there was no downtime between assignments. The pilot will use the discussions and insights from these workshops to inform the programme's approach to diversity, inclusion, and workplace wellness and mental health. It will also investigate how best to address the unique characteristics and stressors of free agency and put in place safeguards to minimise the potential to overburden the Free Agents.

USER PERSPECTIVE

User perspectives are gathered through surveys both of hiring managers and Free Agents. Based on the results from a survey of hiring managers, the speed and convenience of hiring a Free Agent represent the greatest value provided by the programme. Overall satisfaction among managers with the pilot was very high (90%) and the vast majority would hire a Free Agent again (84%).

CHALLENGES AND LESSONS LEARNED

In the beginning, senior management support was crucial to start experimenting with the Talent Cloud model and piloting the Free Agent test in NRCan. For the Free Agent programme, leadership coverage has become less important since it has demonstrated significant results and the model is scaling. Going forward, the model's success will depend upon staying true to the user-centred, iterative design process that is responsive to changing developments.

Nevertheless, building a paradigm shift in talent management systems takes time, especially in government. There are many legacy systems in hiring, job classification and advancement that require attention. Thus, the more radical GC Talent Cloud initiative is still getting off the ground. The team behind the initiative has left NRCan to go to the Treasury Board Secretariat,[107] where they should be better placed to run the more far-reaching, cross-sectoral experiment. They have laid out a comprehensive, iterative project proposal to build the experimental platform and simultaneously work on the main issues of the gig-economy (including workers' rights, labour relations, rights and benefits, stress on mental health and financial support). However, it remains a grassroots project that will need to rapidly show results to continue to attract funding and support for its mandate.

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106. See www.nesta.org.uk/blog/what-are-skills-and-attitudes-successful-public-problem-solving.

107. See www.canada.ca/en/treasury-board-secretariat.html. The Treasury Board of Canada Secretariat provides advice and makes recommendations to the Treasury Board Committee of Ministers on how the government spends money on programmes and services, and how they are regulated and managed. The Secretariat helps ensure tax dollars are spent wisely and effectively for Canadians.
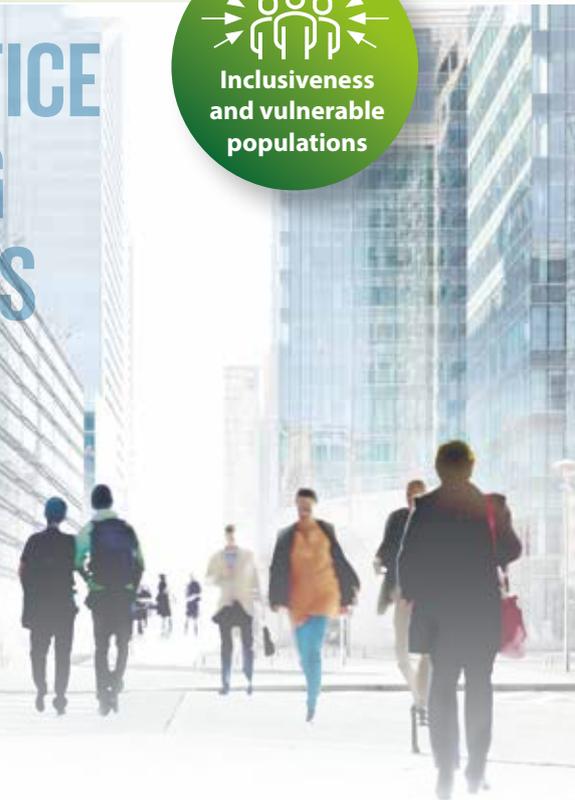
Trend 3:
Inclusiveness and vulnerable populations

In the face of migration and ageing populations, uncertainties about the future of work and job automation, and continued gender and economic inequalities despite decades of attempted reforms, world governments are turning to innovation to help create more inclusive societies where no one is left behind – especially those who are most vulnerable. Many countries have rallied behind global initiatives such as the Sustainable Development Goals (SDGs), while some have acted on their own initiative when confronted with unexpected threats to the well-being of their people. The last few years have seen record levels of people displaced from their homes due to violence and conflict and environmental factors such as climate change, as well as global waves of nationalism that limit the ability of these migrants to integrate well into their new communities. The same period has witnessed targeted gender-inclusion initiatives and a reckoning for gender-based mistreatment, as well as continued disparities in pay and political inclusion. Other major issues are visible on the horizon, such as ageing populations and the displacement of jobs through automation. The world is at a crossroads with governments challenged to acknowledge new realities and create new solutions through innovation.

GOVERNMENTS AND ORGANISATIONS ARE INNOVATING TO MEET THE SUSTAINABLE DEVELOPMENT GOALS

With the adoption of the 2030 Agenda for Sustainable Development, every nation committed to a set of universal, integrated and transformational goals and targets, known as the Sustainable Development Goals (SDGs) (see Figure 44). The 17 goals and 169 targets represent a collective responsibility and a shared vision for the world by 2030. Obtaining unanimous consensus among 193 heads of state and other top leaders was a historic accomplishment, and the SDGs have catalysed a global movement for inclusiveness to improve the lives of the world's most vulnerable populations, among other aspirations. Each country committed to building enabling environments for sustainable development at all levels with the involvement of all actors. This implies new ways of doing things through whole-of-government, whole-of-society and transnational approaches. Such approaches are essential to achieving real transformation in the years to come. This necessitates innovation.[108]

"The 17 Sustainable Development Goals (SDGs) are our shared vision of humanity and a social contract between the world's leaders and the people… They are a to-do list for people and planet, and a blueprint for success."
Ban Ki-moon, United Nations Secretary-General, 2007-16

A recent OECD survey[109] found that, in most countries, the centre of government either leads or coleads implementation of the SDGs (see Figure 45). This approach supports innovation and cohesive, cross-cutting implementation, as the centre usually possesses the co-ordination expertise coupled with the necessary political sensitivity to help implementation thrive. It also has an overarching view and convening power, both of which are vital to laying foundations for new paths to success. Line agencies, on the other hand, may have more limited experience in driving cross-disciplinary policies such as the SDGs. The same survey found that countries have identified a number of positive outcomes from rallying around the SDGs (see Figure 46).

108. See www.un.org/sustainabledevelopment/blog/2015/12/sustainable-development-goals-kick-off-with-start-of-new-year.

109. The Survey on Planning and Coordinating the Implementation of the SDGs was answered by 28 OECD countries and 3 OECD accession countries in 2016. Respondents were predominantly senior officials at the centre of government.

Figure 44: **The 17 Sustainable Development Goals**

Source: www.un.org/sustainabledevelopment/sustainable-development-goals.

Figure 45: Leadership and co-leadership of implementation of the SDGs, 2016

Leadership by the centre of government: 31%

Leadership/co-leadership without centre of government: 31%

Co-leadership between centre of government and line ministries: 38%

Source: OECD (2017b).

**Figure 46: Most positive aspects of implementing the SDGs cited by centres of government**
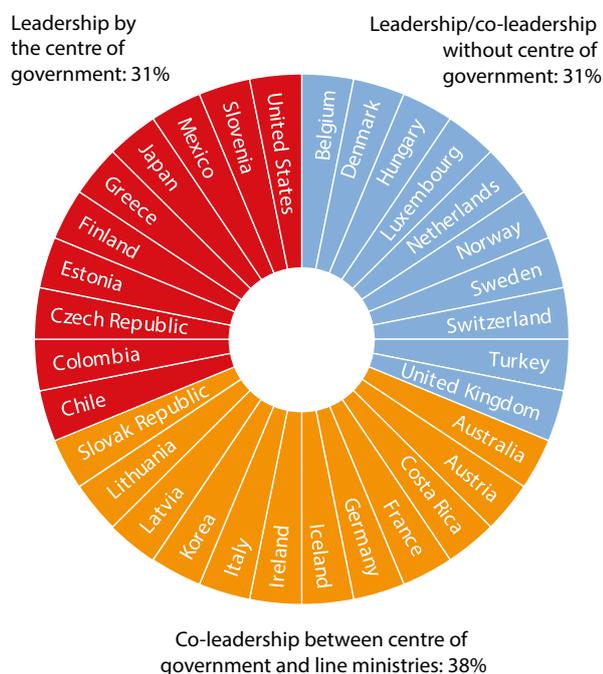
Source: OECD (2017b).

Implementation of the SDGs began in 2016 and has served as a rallying force and a global action plan. It is helping to break down silos both within countries and on an international scale. With a united agenda, countries and cities are innovating to achieve the most ambitious, diverse and universal initiative in the history of humankind. The United Nations has called on countries and their partners in other sectors to foster dialogue and partnerships between governments and innovators, in order to build innovation hubs to transfer knowledge and skills and engage minds around the world.[110] This is encapsulated in a key cross-cutting goal – SDG 17: Partnerships for the Goals. The results of this call to action can be seen in several innovative initiatives that support the full SDG agenda, such as the examples shown in Boxes 22 and 23.

This review found that governments are working to overcome significant challenges and innovating to drive progress towards the SDGs, while instituting broader efforts to foster inclusiveness and support vulnerable populations. Many of these innovations address cross-cutting challenges that can contribute to broad progress among a large swathe of SDGs. The review also identified one area in particular where additional efforts may be needed.

110. See www.un.org/pga/72/2017/09/18/sdg-innovation.

Box 22: GLOBAL PULSE

Global Pulse,[1] the UN's flagship initiative on big data, is a network of innovation labs that serves as a testbed for data-driven innovation. Global Pulse is working to identify ways to use data to push progress in every SDG, such its Haze Gazer[2] tool, which tracks forest fire hotspots in Indonesia in real-time to enhance crisis management, or its use of speech-to-text analytics on local radio content to help understand local sentiments regarding inflows of refugees.[3]

Source: www.unglobalpulse.org/projects/understanding-perceptions-refugee-influx-through-analysis-radio-content.

1. See www.unglobalpulse.org.

2. See http://hazegazer.org.

3. See www.unglobalpulse.org/projects/understanding-perceptions-refugee-influx-through-analysis-radio-content.

Box 23: UNLEASH

UNLEASH,[1] a non-profit initiative developed by core partners from a variety of difference countries and sectors, was launched as a global innovation lab and talent platform. Its objective is to convene people from across the world in networks around the SDGs. UNLEASH aims to disrupt the status quo in order to create a better, more sustainable world, and help incubate and support innovative ideas.

Source: https://unleash.org.

1. See https://unleash.org.

GENDER EQUALITY IS AN UPHILL BATTLE, BUT INNOVATIVE COUNTRIES ARE NARROWING THE GAP

Gender equality is one of the most significant cross-cutting issues in the SDGs. It is formalised in SDG 5: Achieve gender equality and empower all women and girls, but constitutes a necessary platform to achieve progress in every one of the SDGs. Gender equality is not only a fundamental human right, it is also a keystone of a prosperous, modern economy that provides sustainable inclusive growth, and results in the kinds of diverse ideas and perspectives that fuel innovation. Gender equality is essential to ensure that women and men can contribute fully at home, at work and in public life, for the betterment of societies and economies at large.

Unfortunately, in the past five years, countries have made little progress in reaching gender equality goals. Gender gaps persist in all areas of social and economic life and across countries, and the size of these gaps has not changed significantly. Women are less likely to study in lucrative science, technology, engineering and mathematics (STEM) fields, or engage in paid work. Once in the labour market, they are also less likely to advance to managerial positions and generally earn almost 15% less than their male counterparts (see Figure 47). Women also remain under-represented in political and business leadership positions (OECD, 2017j). Furthermore, the proportion of women who choose to run a business has not increased substantially in most countries for many years (OECD, 2015a). Most scientific research does not consider sex or gender as variables and treats male as the

norm, resulting in different health and safety outcomes for women and men (EU, 2013). These inequalities should have long been resolved. There is no reason for women to trail behind men in social, economic and political outcomes. These disparities also cripple innovation by allowing dominant thinking to persist.

However, there are some positive signs that the gaps are narrowing. Although still lagging, women's involvement in politics is growing, enrolment rates in higher education are rising, and participation in the labour market has increased. Gender equality is making significant inroads at the higher education level: in most OECD countries, women already account for at least 50% of higher education enrolments. There is a good deal of optimism that by the mid-century, global gender gaps at the primary school level will have largely disappeared (UK Ministry of Defence, 2014). Many countries have recognised that the status quo is inadequate to achieve meaningful change within an acceptable timeframe, and have instead implemented innovative policies and initiatives.

Many of these initiatives are found in developing countries and emerging economies, which often lag behind advanced countries in terms of gender equality. For example, the "Kanyashree Prakalpa" ("adolescent girls project"), launched by the Government of West Bengal, India, in October 2013, is now demonstrating impressive results.[111] Each day, child marriage affects 41 000 girls

111. See https://wbkanyashree.gov.in.

Figure 47: **Gender wage gap by country, 2012 and 2015**
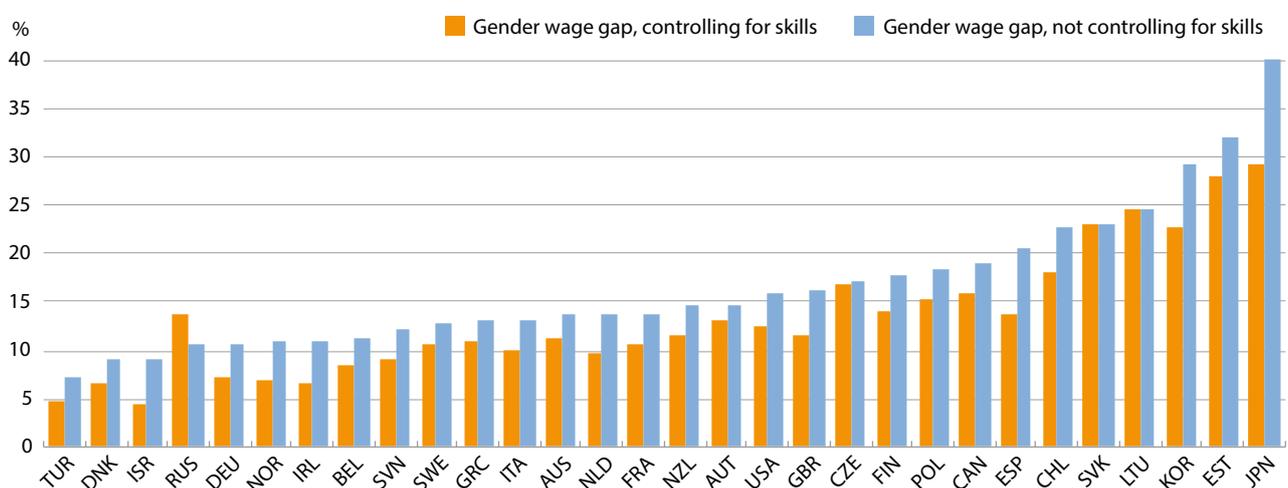
Source: OECD (2017a: 50).

Figure 48: **Kanyashree beneficiaries wearing specially designed bangles.**
Source: www.wbkanyashree.gov.in/readwrite/notice_publications/000227.pdf.

globally, and India has the highest number of child brides in the world despite the practice being banned decades ago. This unique, tech-driven Conditional Cash Transfer programme aims to improve the lives of millions of low-income adolescent girls through educational, social, financial and digital empowerment. Established on the basis that "education is the cornerstone of an empowered life", the programme's core objective is to ensure girls stay in school and delay marriage until at least the age of 18. It provides an incentive of INR 750 (EUR 10) to girls aged 13-18 for each year that they remain unmarried and in education, with a one-time grant of INR 25 000 (EUR 327) to be paid after a girl turns 18, as long as she is unmarried and engaged in an academic or vocational pursuit (see Figure 48 for a photo of Kanyashree beneficiaries). Girls use this stipend to pay for higher education or start a business. The entire process from enrolment to bank transfer is managed through a single app, which includes a facial-recognition component to prevent misuse of funds.

The programme also works to enhance the social power and self-esteem of girls through events, competitions and the endorsement of strong female role models. In addition, the programme provides career counselling, and financial literacy and parental counselling courses. Since launching, the programme has enrolled 4.3 million girls aged between 13 and 19. Approximately 1.2 million girls have achieved the goal of delaying marriage to 18. Each of these girls now has a bank account in her name. Government data report that the average annual school drop-out rate for girls has reduced from 3.5% in 2012 to 2.9% in 2015. An independent assessment by the Pratichi Institute, India, also shows that enrolment of girls aged 13-18 has grown 11% from 80% to 91% between 2014 and 2016.[112] The initiative has won numerous awards including the UN's highest public service award (Banerjie, 2017).

In another example, the United Nations Development Programme (UNDP) partnered with Microsoft and the National Council of Egypt to launch the Aspire Social Innovation Hub. In Egypt, 78% of women are unemployed and very few undertake entrepreneurial ventures. The Hub seeks to close this gender gap by enabling young women

112. National Informatics Centre, Ministry of Electronics and Information Technology, Government of India submission to the OECD Call for Innovations crowdsourcing exercise, 30 August 2017.

to launch businesses, providing them with training and resources in computer science. At the Hub, young women come together to codesign business concepts that can promote social good, for example, in the fields of health care and refugee aid (UNDP, 2017).

Innovative entrepreneurship efforts are also emerging in Nepal, where female entrepreneurs create cloth from the Himalayan giant nettle plant for products such as carpets and clothing. The extraction process is very difficult and results in health issues. Seeking to make these women's lives better and to improve the efficiency of their businesses, UNDP partnered with the Nepalese Department of Foreign Affairs and Trade to launch a USD 20 000 challenge to develop new technologies for this task. Four recent engineering graduates won the challenge with an innovative solution that simplified multiple stages of the process, reducing creation time from several days to just a few hours. The government is now providing funding to scale up the new approach in 22 districts (UNDP, 2017).

Developed countries have also recognised the need for proactive action. In 2017, the Government of Australia launched the Australian Public Service Diversity and Gender Equality Awards to shine a light on outstanding contributions to workplace diversity. Among the award recipients was NEWinIT (Network of Employment Women in IT), an employee network for Women in IT, based inside the Department of Employment. The goal of the network is to provide inspiration and support to women working in IT by building inclusive spaces, challenging subtle biases and hosting a mentorship programme.[113]

Many countries are looking to drive gender equality through innovative budget programmes. The budget process is central to national policy making. Accordingly,

113. See www.apsc.gov.au/publications-and-media/networks-events-and-seminars/aps-diversity-and-gender-equality-awards-2017/finalists.

Box 24: WHAT IS GENDER BUDGETING?

"Gender budgeting is a way for governments to promote equality through fiscal policy. It involves analysing a budget's differing impacts on men and women and allocating money accordingly, as well as setting targets –such as equal school enrolment for girls – and directing funds to meet them."

Source: OECD (2017b); *The Economist* (2017).

more and more countries are viewing gender budgeting – an innovative application of gender mainstreaming in the budgetary process – as an increasingly important tool for promoting gender equality and inclusiveness (see Box 24). This involves the integration of a clear gender perspective within the budget process, through the use of special processes and analytical tools, to promote gender-responsive policies that aim to address gender inequalities and disparities. A 2016 OECD Survey on Gender Budgeting showed that over one-third of OECD countries (12 countries) have introduced gender mainstreaming in their budgetary process. However, the majority have no such plans (see Figure 49). Gender budgeting practices vary in those countries where they have been introduced, and there appear to be three broad categories of gender budgeting systems:

1. Gender-informed resource allocations, where gender assessments inform individual policy decisions and/or funding allocations.

2. Gender-assessed budgets, where the budget as a whole is subject to gender assessment.

3. Needs-based gender budgeting, where a gender needs assessment forms part of the budget process.

Big data analytics is another innovative approach being used to address gender equality issues. Recent research by

Figure 49: **Status of gender budgeting**
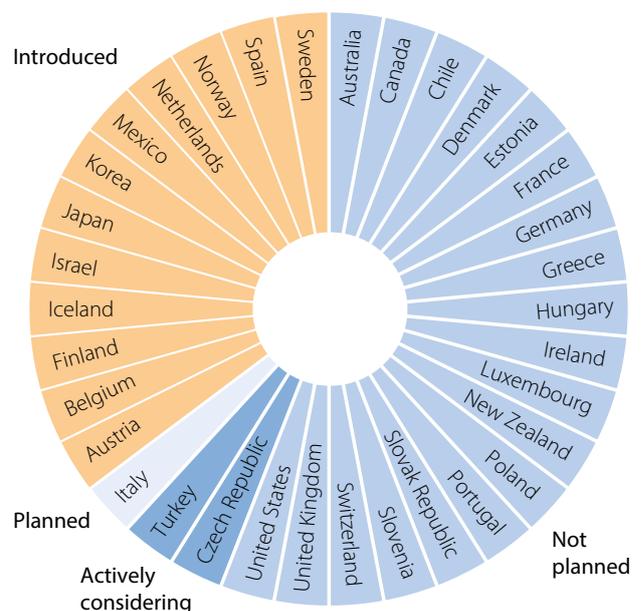
Source: OECD (2017b: 131).

Figure 50: **Data visualisation of gender disparities in childhood stunting**
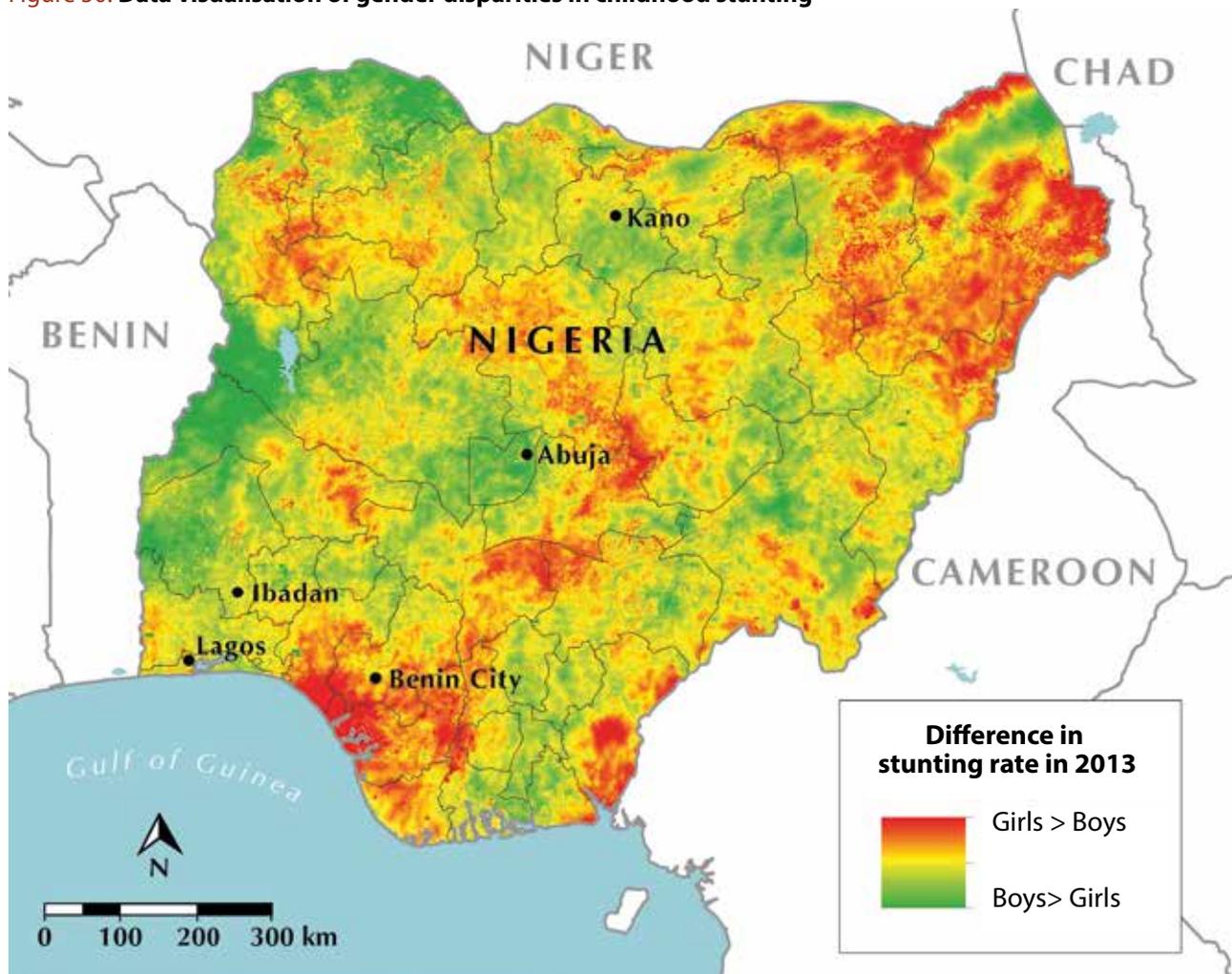
Source: Bosco et al. 2017. WorldPop Program, Flowminder Foundation, University of Southampton; Data2X (2017).

Data2X[114] – a joint effort of the UN Foundation, the William and Flora Hewlett Foundation, and the Bill & Melinda Gates Foundation – has surfaced a number of innovative big data projects aiming to better understand the social and economic status of women and girls (Data2X, 2017).[115] Such knowledge is a necessary foundation to solving inequality challenges through innovation. The following are just some of the fascinating applications of data analytics for gender equality:

● The use of anonymised credit card and mobile phone data to understand women's purchasing and mobility patterns, in order to help understand their needs and priorities. This can help governments better target services.

● Analysis of tweets and the use of machine learning to identify symptoms of depression in women and girls. This approach accurately detects mental illness 96% of the time, and could, for example, enable automated responses that provide information on seeking help or counselling.

● The use of geospatial data and satellite imagery to identify gender disparities in areas such as girls' stunting or women's literacy, which can help target services (see Figure 50).

More certainly needs to be done to achieve gender equality and to make the necessary (and long overdue) progress. However, these innovative initiatives are promising and it appears that the SDGs are accelerating progress in this area.

114. See http://data2x.org.

115. See http://data2x.org/wp-content/uploads/2017/03/Big-Data-and-the-Well-Being-of-Women-and-Girls.pdf.

GOVERNMENTS MUST ADJUST TO AGEING SOCIETIES

The challenges posed by ageing populations cut across the SDGs on poverty eradication, good health, gender equality, economic growth and decent work, reduced inequalities and sustainable cities. A combination of low fertility rates and longer life spans will lead to future ageing in all major regions of the world. At current rates, there will be almost the same number of people over-60 as the number of children by 2050 (see Figure 51). This represents a radical change from the past and present. Currently, the global population includes approximately 900 million people aged over 60. This number is projected to increase to 1.4 billion by 2030 and to 2.1 billion by 2050. Europe is expected to have the largest proportion of over-60s (34% in 2050 compared to 24% in 2015). But rapid ageing will occur in other parts of the world as well, particularly in Asia (UN, 2015a). Almost 80% of the world's older population will live in (what are currently) less-developed regions. By 2050, China will have about 330 million citizens aged 65 or more, India will have about 230 million, and Brazil and Indonesia will each have over 50 million (UN, 2011). Globally, the number of over-80s is expected to multiply threefold by 2050 (from 125 million in 2015 to 434 million

in 2050 and 944 million in 2100). The proportion of people aged over 80 accounted for just 1% of the OECD population in 1950, but had increased to 4% in 2010 and is projected to rise to almost 10% by 2050 (OECD, 2016a: 30).

Ageing implies changes in lifestyle and consumption patterns, which will have significant implications for demand for types of products and services. High old-age dependency ratios, together with more prevalent non-communicable diseases and increased disability among the elderly, will place considerable burdens on healthcare and other services. Ageing-related illnesses, including cancer and dementia, may also increasingly dominate government focus areas, such as health agendas (OECD, 2016a). Governments today must prepare for the challenges of tomorrow's ageing population. Some countries have already launched innovative programmes to address this issue.

The Seoul Metropolitan Government (SMG) in Korea is addressing these challenges head-on through its "Comprehensive Plan for 50+ Assistance", or more simply known as the "50+ policy", as profiled in the case study on page 89. While other countries anticipate a time when their young and old populations have equal numbers,

Figure 51: **Global parity between seniors and children**

2015

26% -15 yr olds
12% 60+
62% Working age population

2050

21% -15 yr olds
21% 60+
58% Working age population

Gender ratios

40% 60%

The older population (80+) will be predominantly female by 2050
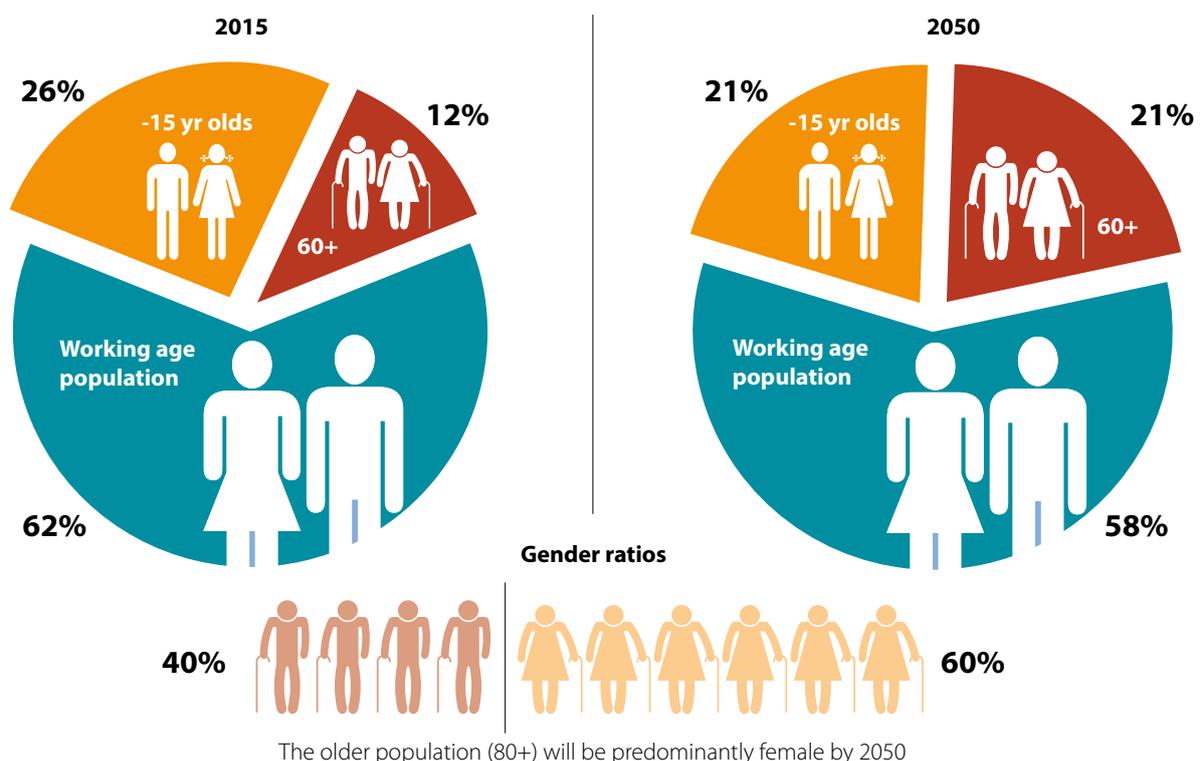
Source: OECD (2016a: 28).

Korea already has more old citizens than young, and is ageing faster than any other developed country (Steger, 2017). The innovative 50+ policy creates new, systemic social innovation models for Koreans in their 50s and 60s transitioning to later life. These include life training, emotional support and retraining for continued employment and engagement with society.

The UK-based innovation foundation NESTA[116] and the European Commission-backed Active and Assisted Living Programme (AAL Programme)[117] are also working to support ageing populations. Their joint initiative, the "Smart Ageing Prize", promotes the use of innovative technologies to help older people build stronger social bonds. It also encourages community involvement to help improve well-being and quality of life among the older generation. The programme has an open application period and provides mentoring and support to a handful of semi-finalists. In September 2016, the partnership awarded the first prize of EUR 50 000 to "Activ84Health",[118] which gives residents of nursing homes the ability to virtually tour the world via video projection while cycling on exercise bikes. The call for entries for the second prize is now open.[119] NESTA is also halfway through a five-year project to track a number of innovative ageing initiatives,[120] such as efforts to provide digital badges to encourage running and an app to activate nearby individuals trained in first aid in case of need. This type of longitudinal tracking and reporting from lessons learned is rare, and the findings may prove very useful to governments.

The Australian Centre for Social Innovation (TASCI) is working to support ageing populations by focusing on carers. Their Weavers initiative[121] is a peer-to-peer programme designed to support carers, who often bear a hidden burden that can affect their wellbeing. The programme connects carers with trained individuals, who also have caring experience, in order to help equip them with tools and ways of thinking to improve their own wellbeing and better enable them to care for others. It was co-designed with carers and uses evidence-based practices to help participants overcome the significant challenges of caring for loved ones. In 2016, they open sourced the programme to allow others around the world

to adapt and replicate Weavers at no cost. Open sourcing the programme also allows others to improve on the model and share the improvements with the Weavers community for everyone's benefit.

WAVES OF MIGRATION HELP SOLVE SOME CHALLENGES BUT CONTRIBUTE TO OTHERS

Migration is one of the signature challenges of the 21st century and cuts across at least half of the SDGs, including those on education, gender equality, work and economic growth, and peace and justice.[122] Countries around the world have seen massive rates of migration in the last few years, whether by choice for individuals who seek new jobs or experiences in countries other than their own, or by force for refugees pushed from their homes due to conflict or disasters. While the causes and experience of migration can be traumatic, this trend may have some positive outcomes. As discussed previously, many countries are facing major problems related to ageing populations, with the size of the working-age population insufficient to provide for the dependent population (those younger than 15 and older than 64). International migration may help to reduce anticipated labour and skills shortages in receiving countries (see Figure 52). The central scenario in the OECD's long-term growth projection assumes that inflows of migrant workers will be an important factor in mitigating ageing in most OECD countries (Westmore, 2014).

Many migrants bring qualifications and skills with them. In 2011, there were 31 million highly educated migrants in OECD countries, with high-skilled migration increasing by 72% over the last decade (OECD, 2015b). This can represent

122. See https://unofficeny.iom.int/2030-agenda-sustainable-development.

Figure 52: **Population and migration, OECD, 1990-2060**
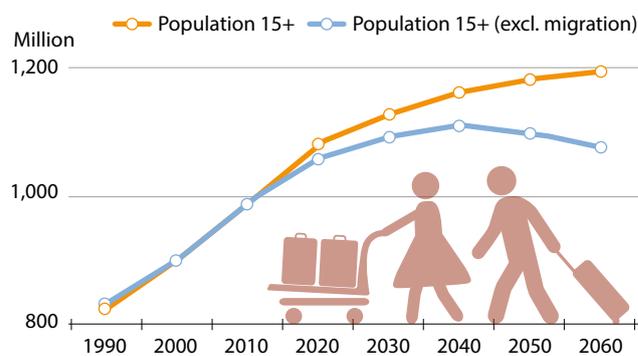
Migrant workers will be an important factor to mitigate the effects of ageing in most OECD countries

Source: OECD (2016a: 29).

116. See www.nesta.org.uk.

117. See www.aal-europe.eu.

118. See www.activ84health.eu.

119. See http://aal.challenges.org.

120. See www.nesta.org.uk/blog/three-scaling-insights-accelerating-ideas-fund.

121. See http://tacsi.org.au/project/weavers.

tremendous value for receiving countries. However, migrants' skills are often not fully utilised in the labour markets of destination countries, and close to 8 million migrants with tertiary education in OECD countries are working in low and medium-skilled jobs (OECD, 2015b). This, in part, can be caused by a lack of services that help migrants adjust to and establish themselves in their new environment. However, governments have developed innovative programmes to help migrants build prosperous lives in their new homes. For example, Mexico's National Savings and Financial Services Bank (Bansefi), a development bank created by the federal government, launched mobile branches in 2017 for Mexican citizens migrating from the United States (see the case study on page 94). The initiative was a response to the uncertain futures of approximately 600 000 Mexican "Dreamers" and other Mexican citizens in the United States, many of whom went to the United States as children. Dreamers also usually have higher-skilled and higher-paying jobs than other undocumented immigrants (Parlapiano and Yourish, 2018). To date, 11 mobile branches have opened along the border and one at the Mexico City airport, providing bank accounts, insurance and other services for migrants coming from the United States.

In another example, the Swedish Association of Local Authorities and Regions (SALAR) launched Co-Lab Sweden in 2016.[123] This innovative, cross-sectoral innovation lab for user-centred creation of solutions was set up to address the complex challenges faced by approximately 50 000 unaccompanied minor refugees arriving in Sweden as refugees. These young people have to interact with numerous public and non-governmental organisations that do not necessarily communicate well and tend to work in silos. The massive influx of unaccompanied minors created an urgent need for new forms of interaction between support organisations to better address the situation of this particularly vulnerable group.

Co-Lab Sweden brings together the target group, unaccompanied minors, with a host of organisations from public, private and civil sector organisations to cocreate solutions designed to ease the transition process and better integrate the refugees. It has enabled the development of a common platform and a common understanding among users and a diverse set of stakeholders of the situation and the everyday lives of unaccompanied minors. The cocreation process has produced ideas, which are currently being tested,

on how to empower the minors and how to enable different types of stakeholders and organisations to build capacity to collaborate in new ways and develop more effective means of working with unaccompanied minors (see Figure 53).[124]

Many challenges for migrants arise from the lack of a formal identity. The absence of an official identity locks them out of numerous government and private services, as well as the broader economy. The Identity section of this review discusses the ambitious and innovative ID2020 initiative, which aims to provide an official identity to the 1.1 billion people who live without one – many of whom are migrants (see page 22). ID2020 is a direct response to SDG 16.9: to provide legal identity for all by 2030.[125]

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124. SALAR submission to the OECD Call for Innovations crowdsourcing exercise, 31 August 2017.

125. See https://sustainabledevelopment.un.org/sdg16.

Figure 53: Co-Lab Sweden co-creation session
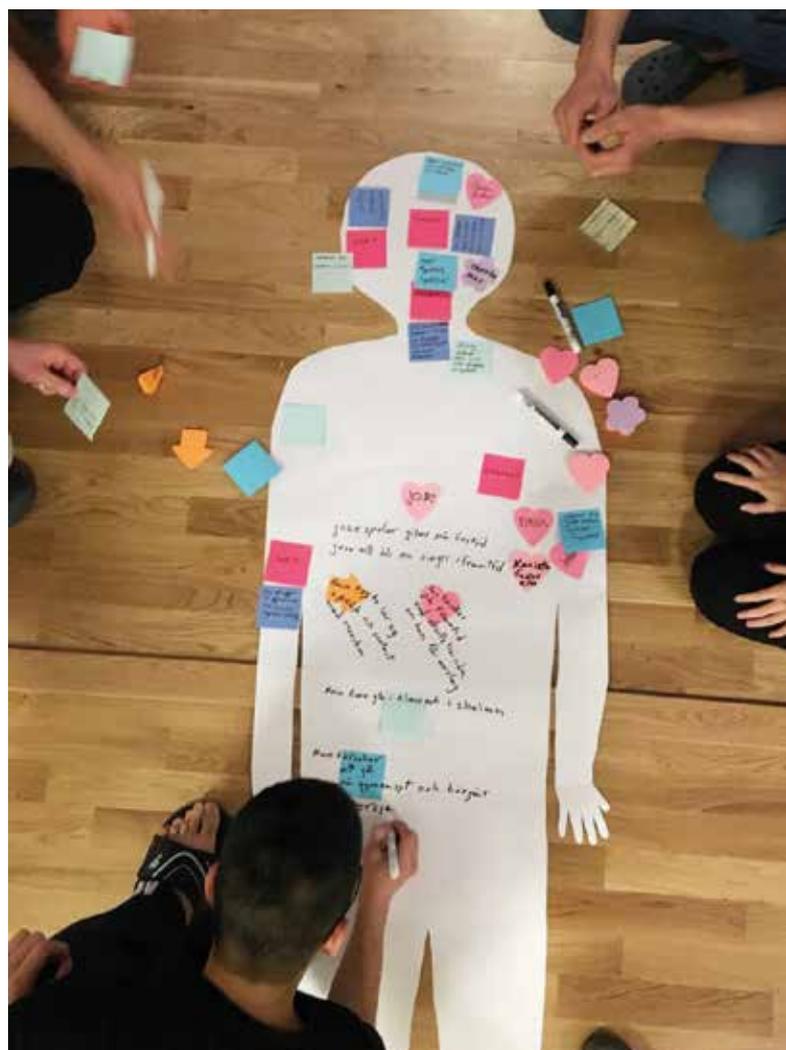
Source: Co-Lab Sweden.

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123. See www.fornyelselabbet.se.

The recent humanitarian refugee crisis seems to have receded over the past year, following unprecedented high inflows during the second-half of 2015 and early 2016 (OECD, 2017k). However, all signs point to a further strengthening of factors pushing and pulling migratory flows in the decades to come. Youth bulges in some parts of the developing world are creating conditions ripe for outward migration. A likely lack of employment opportunities and growing risks of internal conflict will force many to seek better lives and safety elsewhere. Climate change may also have an influence on future international migration flows (European Environment Agency, 2015). Countries and cities around the world must continue to innovative in order to cope with migration as an ongoing reality and to take advantage of the positive contributions migrants can make to their communities.

SYSTEMS APPROACHES ARE SUPPORTING THE MOST VULNERABLE

The previous section of this review focused on systems approaches to tackling public sector challenges, as well as examples of technologies and tools that connect information and services in ways crucial to making true systems transformation a reality. By their very nature, systems approaches are cross-cutting and affect many areas of policy and society. Thus, governments are undertaking innovative systems initiatives to help their most vulnerable populations. As discussed in the following case study (see page 98) the Asker Welfare Lab in Norway is applying innovative systems approaches to help their most vulnerable citizens, including refugees, vulnerable youth (e.g. dropouts) and families with children with disabilities. Multi-disciplinary, citizen-centred "investment teams" are assembled with representatives from all

Figure 54: **Investment team training to use the "Mapping Tool" to map a client's life situations**

Source: Asker Municipality.

relevant social services working together, as opposed to the typical fragmented ways in which services are often provided (see Figure 54). These investment teams receive specialised training in investment thinking and work with clients to identify areas in their lives where service investments can have the greatest impact.[126]

Innovative systems approaches are also being used to tackle domestic violence. The Iceland Government has launched the United Against Violence programme to address violence against women. The programme introduced a new, integrated support system for victims based on the concept that domestic violence is a social (and not private) harm that affects everyone. The programme is grounded in a radical systems-change concept that centres support around the victim and concentrates on stabilising the family, rather than focusing on providers and authorities (lawyers, police, social services, etc.). The police, social and child protective services (and increasingly schools and healthcare providers) now work in a co-ordinated fashion to detect and respond effectively to domestic violence across Iceland (OECD, 2017c).

In another example, since 2016, Portugal has been linking data from sources across the public sector, with a view to easing the financial burden for over 800 000 economically vulnerable households, by providing them with affordable electricity and gas services. Data from the Social Security department, Tax Authority, Department of Energy and all energy suppliers are connected and automatically apply a discounted rate based on criteria such as income, or reductions for the beneficiaries of social programmes such as family allowances, or disability and unemployment benefits, among others. The key to this innovation is that all processes are automated, removing the need for the beneficiary to take any action. Before the process was automated by linking up data, many vulnerable residents were reluctant to take advantage of the programme, as they had to request it manually and often encountered difficulties in providing the many forms of documentation needed to demonstrate eligibility. The key enabling component of the automation process is the Integration Platform developed by the Administrative Modernization Agency (AMA).

These are just a few examples of cities and countries beginning to employ systems approaches that are custom designed for their most vulnerable citizens. The OECD has seen a significant rise in the establishment and implementation of these programmes in recent years, and expects this trend to grow in the foreseeable future.

GOVERNMENTS NEED TO INNOVATE IN THE FACE OF JOB AUTOMATION

Governments are experimenting with new, inspiring and innovative approaches to promote inclusion and protect their most vulnerable citizens and residents. However, in conducting this research and reviewing the cases received through the OECD's Call for Innovations, it became apparent that less attention was being paid to a cohort of the next generation of vulnerable people: those whose jobs may be replaced through automation by robots, AI, and other technologies. New production technologies are reshaping the availability and nature of work. It is therefore important that strategies for inclusion understand this process (OECD, 2017l: 5). Out of the 276 cases received this year, none focused on or considered the increasing number of people who risk losing their jobs and perhaps

Figure 55: **Growing precarity of employment, % employment growth, 2007-2013**

One in ten jobs in the OECD area could be automatable over the next decade
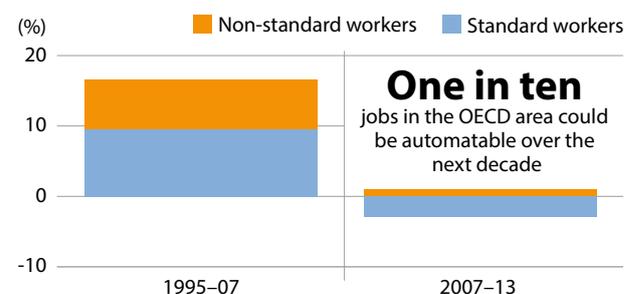
More than half the jobs created since 1995 are non-standard, i.e. part-time, temporary or self-employment arrangements

Less manufacturing jobs
% total employment

More jobs in R&D-intensive industries
% of manufacturing employment
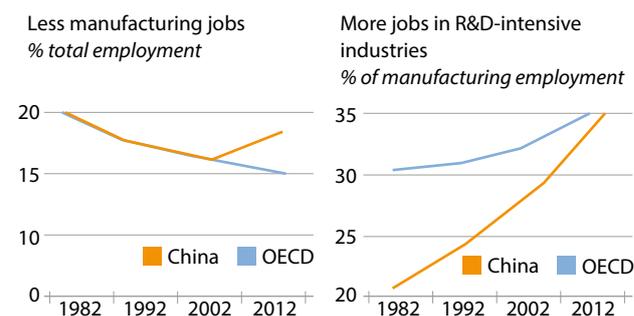
Source: OECD (2016a: 55).

126. Asker Municipality submission to the OECD Call for Innovations crowdsourcing exercise, 31 August 2017.

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even what they consider to be their purpose in life. At the same time, a number of cases that concerned the automation of government services with bots and self-service options, while innovative, did not to seem consider the potential human side effects. The research identified only a few efforts to address this problem.

OECD research has found that 10% of jobs in OECD countries may be automated in the near future, while many jobs are shifting to non-standard positions that may provide less security and stability (see Figure 55). Depending on the ability of economies to react quickly and create new jobs to replace those lost (alongside the change in wages), the number of jobs could decline, perhaps permanently. Greater work-sharing and a reduced working week could help distribute work more evenly, but this approach would need to guarantee a living wage – possibly through some sort of "universal basic income" (Skidelsky, 2013) (see Box 25). The concept of a basic income is the key exception to the lack of focus on job automation, with a small number of countries exploring or in the early stages of conducting basic income pilots.

In 2017, Finland launched the world's only national pilot on basic income. From January 2017, the government has paid EUR 560 per month to 2 000 unemployed citizens selected at random, in order to establish whether a basic income has an impact on employment outcomes

BOX 25: **WHAT IS UNIVERSAL BASIC INCOME?**

A universal basic income is an unconditional cash benefit of a fixed amount provided by a country or city – or some non-governmental organisations (NGOs) – to all citizens, regardless of their employment status, current income or any other factor. Universal basic income is designed to help eliminate poverty, provide a baseline income security for all citizens and eliminate the stigma of receiving public financial benefits.

Some believe that basic income can spark creativity and entrepreneurship, which can help mitigate the worst effects of job automation. However, others believe it could provide a disincentive to holding a job or might negatively impact government budgets. OECD research shows that universal basic income may necessitate large tax increases and reductions in other benefits.

Source: https://futurism.com/images/universal-basic-income-answer-automation/, https://www.oecd.org/els/soc/Basic-Income-Policy-Option-2017-Presentation.pdf.

(e.g. whether individuals who receive the guaranteed basic income are more likely to take up new jobs compared to individuals receiving traditional unemployment benefits).[127] Several months into the experiment, early anecdotal results indicate that basic income recipients have already experienced less stress in their lives, which can help improve the mental capacity to seek work or take on entrepreneurial ventures (Raphael, Angell and Hall, 2017). However, some critics believe the sample size might not be adequate to provide a concrete understanding of the effects, and are concerned that economic variables could muddy the results (Ward, 2017). The formal results will be released once the pilot concludes at the end of 2018.

In addition to the Finland pilot, a number of basic income experiments are taking place in Kenya, where the NGO GiveDirectly launched a USD 30 million experiment involving 120 rural villages in November 2017. The full experiment will last over 12 years, with intermediary results provided along the way.[128] The scope and scale of the project has the potential to provide significant insights and evidence into the concept of universal basic income, which may prove integral to helping others decide how and whether to implement the project themselves.

Despite these interesting and innovative examples, the potential ramifications for automation and the future of work seem to eclipse current efforts to prepare for it, which signals that further work is needed in this area. This is one area where governments will want to be proactive and not reactive.

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127. See www.kela.fi/web/en/basic-income-objectives-and-implementation.

128. See www.givedirectly.org/basic-income.

Recommendations

Building a more inclusive society and ensuring the protection of the most vulnerable are among today's most significant challenges. As can be seen in this section, countries are taking innovative actions, often in a globally united way, to make this happen. Although ensuring equity for all individuals requires many actions and an ongoing focus, the following recommendations can help build the foundation and linkages needed to address the problems of today and tomorrow.

1. **Connect with international communities to drive united progress.** The world has never been so interconnected, and its challenges have never been so complex. Global initiatives such as the SDGs cannot be solved by each government acting on its own. These challenges and goals necessitate a unified, international response. Governments at all levels should connect with and actively participate in the international communities that have existed for some time, such as the OECD and United Nations, as well as new communities that are being activated to help address unmet needs, for example, by better convening non-government actors such as civil society and industry. Only by working together can governments "enhance policy coherence for sustainable development" – SDG commitment 17.14.

2. **Ensure all members of society are considered and consulted in policy making and service delivery.** The voices of the excluded and vulnerable are too often drowned out by members of society who have long had their say in the functioning of government. Governments at all levels must seek to understand the opinions, experience and conditions of all members of society for which their policies and services touch. This can be done through major formal mechanisms, such as gender budgeting, or through user-centred services such as in the Asker Welfare Lab case study. If governments develop policies and services without a solid understanding of all the types of people they will impact, they are not doing enough.

3. **Begin preparing today to support the next generation of vulnerable populations.** There are so many issues to deal with today that it can be easy for governments to lose focus of the challenges of tomorrow. Governments can start innovating today to build a foundation of support for the vulnerable populations of the future, including those whose jobs and livelihoods may be automated. This can help soften the blow later down the line. Innovative foresight and horizon-scanning activities can help identity where challenges are likely to arise, and help illuminate the actions countries can take today to prepare.[129]

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129. See www.oecd.org/naec/reflection-and-horizon-scanning.htm.

CASE STUDY

Seoul 50+ policy – Republic of Korea

Technological progress, globalisation and demographic changes have a pronounced effect on labour markets.[130] Ageing and the automation of jobs – megatrends of the next decade – will create great opportunities, but also daunting challenges. How will life-long learning and continued labour market participation work when jobs are disappearing? Furthermore, the needs of newly retiring urban populations are markedly different from those of previous generations. These trends challenge labour markets, pension systems and social policy, in general, and place a heightened fiscal burden on welfare states. The Seoul Metropolitan Government (SMG) is trying to address these challenges with its Comprehensive Plan for 50+ Assistance (hereafter, Seoul's 50+ policy). Seoul's 50+ policy provides life training, emotional support, cultural experiences and also retraining for continued social opportunities for newly retired populations. As part of the initiative, Seoul has redefined what "work" in the 21st century means.

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130. See the OECD Future of Work project: www.oecd.org/employment/future-of-work.

THE PROBLEM

Korean society is rapidly proceeding towards the centennial society, with the elderly demographic of the population soaring. The country has experienced both sharp declines in fertility and substantial gains in longevity (United Nations, 2015). In 2000, Korea became an ageing society with 7.2% of the population over 65+, and an aged society (14.02%) in 2017, and will become a super-aged society by 2026 (20.8%) (Kim and Jane, 2017). The nation's rate of ageing is three times faster than that of countries that entered an ageing society phase before Korea. As the working-age population continuously decreases, potential intergenerational conflicts emerge due to the growing fiscal burden on healthcare, social welfare and pensions. A 100-year life in the context of 25-30 years of pre-pension economic activity is not feasible under current socio-economic structures.

Simultaneously, a large post-war demographic group, which constitutes the main labour force behind Korean economic growth, is reaching retirement age. This wave of retiring baby boomers is creating a serious social problem – one that is also a personal crisis. Retirees may live up to 50 years following retirement: what should they do with the second half of their lives?

These baby boomers are highly educated professionals from previous generations with differing values. They have also been the main force behind the economic development and democratisation of Korea. Their experiences, capabilities and participation in the labour market are seen as the solution for an aged society. However, the 50+ generation is insecure about their future and quality of life, as opportunities for employment and social interaction decrease after retirement.[131] Retirement benefits for many do not permit recipients to enjoy the same living standards as before, or worse, place them at risk of falling into lower-income strata. Few baby boomers have made adequate financial preparations for retirement (Kim, 2012). Furthermore, those retiring in their 50s and early 60s – the 50+ generation (an age group between 50 and 64) – are excluded from various welfare policies, placing them in an especially vulnerable position. Currently the 50+ population comprises 11.5 million people, representing 22.4% of the entire population of Korea. In Seoul alone, this age group accounts for 2.19 million people (Figure 56).

Figure 56. **Ages of South Korea population**
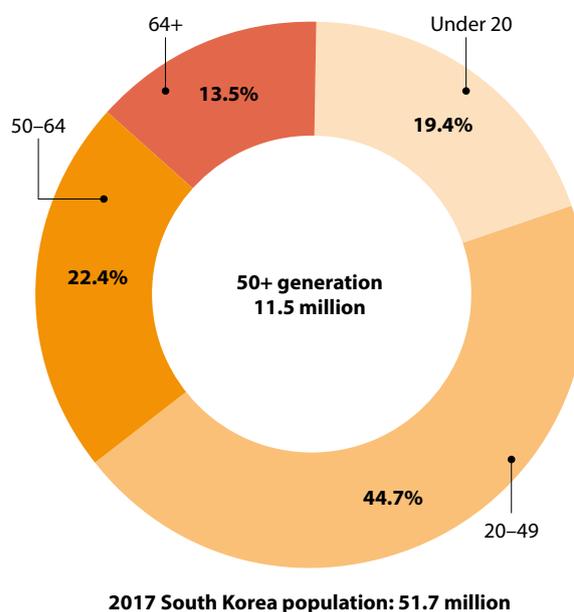
2017 South Korea population: 51.7 million

Source: Presentation made by the Seoul 50+ Foundation of the Seoul Metropolitan Government, Seoul, 2017.

In Europe and elsewhere in the world, the standard reaction to this demographic shift has been to increase the retirement age, keeping older people in the labour market for longer periods. Korea has also recently amended existing legislation on retirement, raising the minimum normal retirement age to 60 in 2013. At the same time, older workers continue to work well beyond their retirement. The effective age of labour force exit is, on average, around 72 for both men and women,[132] which is higher than many other OECD countries. Yet, it is common practice in Korean companies to set a mandatory age of retirement well below the age of 60, often as low as 55. Consequently, the average age of actual retirement, particularly in the private sector, stands at 53. To make matters even more complicated, job availability is constantly shifting due to automation and globalisation, while Korea also works to tackle high youth unemployment. In other countries with similar issues, the trend to ensure "continuous employment" makes older workers accept lower wages – often significantly lower (Ujikane, Kuwako and Schneider, 2016).

AN INNOVATIVE SOLUTION

Originating from civil society and brought to the public sector by the current Mayor of Seoul, Park Won-Soon, the Seoul 50+ initiative stems from the idea that the retirees

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131. Data taken from a 2015 needs assessment of the 50+ generation.

132. See www.oecd.org/els/emp/older-workers-scoreboard-2016.xlsx.

It represents a convergence of social welfare, employment and life-long learning policies geared towards the needs and characteristics of people aged between 50-64, enabling them to remain active, work and participate in community life.

Source: Seoul 50+ Foundation of the Seoul Metropolitan Government, Paris, 2017.

Figure 57: A 50+ campus

Source: Seoul 50+ Foundation of the Seoul Metropolitan Government, Paris, 2017.

need support to create new life models for themselves (see Box 26). While ageism is rife in Korean society, the initiative has taken an innovative and bold approach by embracing the older generation as an active social actor.

In 2016, after more than two years of preparation and pilots, the city announced its "Comprehensive Plan for 50+ Assistance". In 2015, the city had conducted a needs assessment of the 50+ generation, and found that the three main concerns were feelings of insecurity, lack of work and nowhere to go. Thus, the 50+ policy focused on providing a platform for "Learning and Exploration", "Jobs and Social Engagement" and "Culture and Infrastructure". The main mission of Seoul's 50+ policy was to create a new life vision for Seoul's 50+ generation. This entailed improving the life quality of the generation, producing a shift in perception among older people, and enhancing social participation and sharing in society. As a whole, the initiative tried to prepare the city and its inhabitants for a new model of an aged society.

The nucleus of the innovation is a comprehensive 50+ infrastructure planned across Seoul. This includes the establishment of the Seoul 50+ Foundation (the coordinating body), and several 50+ campuses

and centres built on multi-sectoral collaboration.[133] Nineteen 50+ centres are planned for city districts by 2020 and four centres are currently in operation. As each city district has different characteristics – ranging from densely populated neighbourhoods to university or office areas – the centres will reflect specific, local features and needs. The campuses (see Figure 57) are bigger one-stop-shops offering tailor-made services including counselling, education and new job models, and

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133. Seoul alone cannot provide all the services needed, even with the help of the 50+ community. The Seoul 50+ Foundation has signed MoUs with more than 30 organisations to develop a variety of programmes and create quality 50+ opportunities through partnerships.

Figure 58. **The 50+ policy service model**
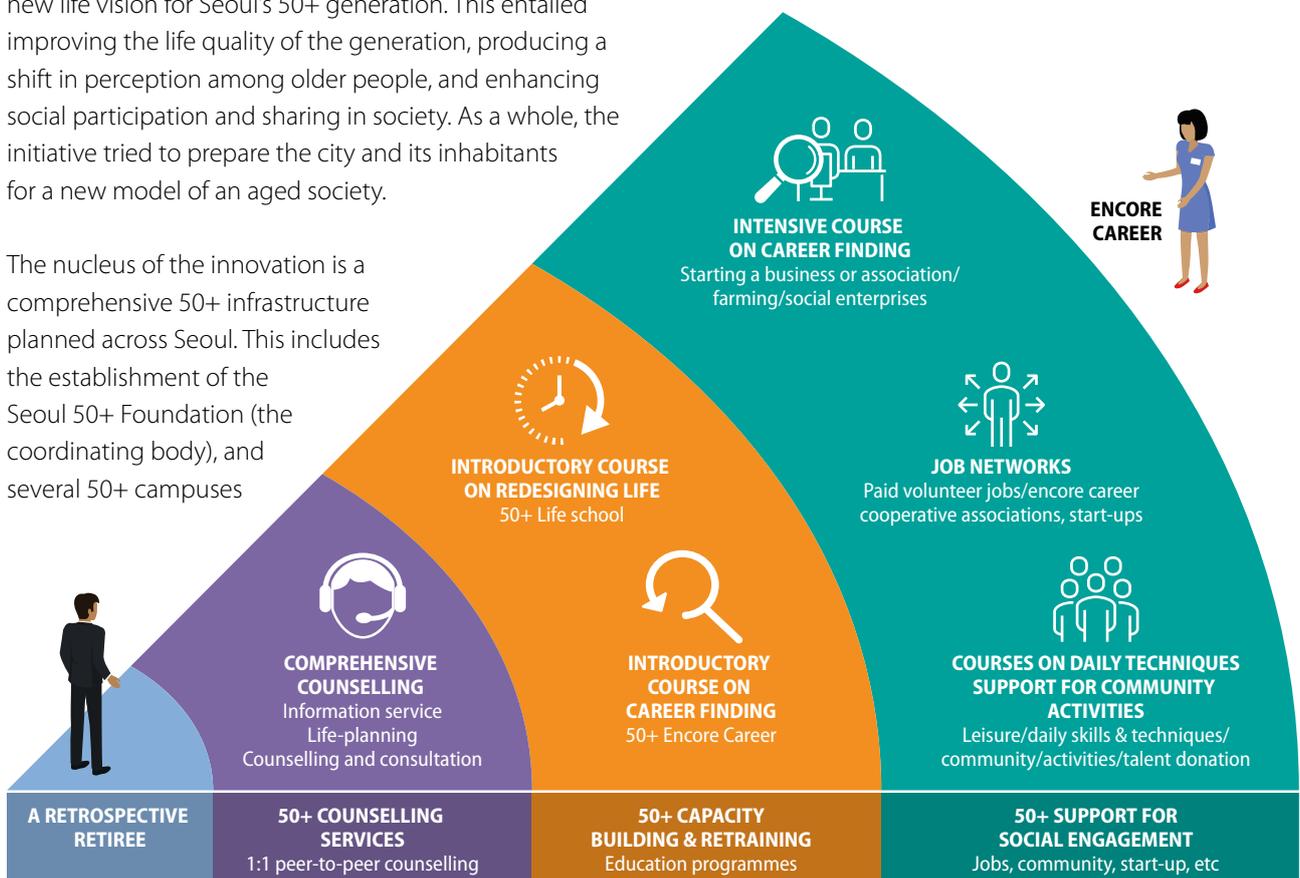
Source: Presentation made by the Seoul 50+ Foundation of the Seoul Metropolitan Government, Paris, 2017.

promoting intergenerational exchange. Six 50+ campuses are planned by 2020 and three are currently in operation.

This infrastructure provides support and cultural spaces for the 50+ generation to interact among peers, drive changes and generate needs-based services for one other (see Figure 58). It goes beyond traditional policy interventions, providing more comprehensive support and dealing with the practical and emotional side of life transitions (e.g. offering cooking classes for retired men or overall life-transitions courses for the newly joined). Half of the courses offered at the campuses are initiated and designed by the 50+ generation and the target group also provides peer-to-peer counselling (see Figure 59). As the older generation becomes a large market segment for services, Seoul's 50+ policy helps the demographic group locate demand and generate self-initiated projects and work opportunities. In essence, the social capital of the target group is used to cope with ageing issues in society.

Furthermore, Seoul 50+ tries to redefine what work in Korean society means for an entire generation that has dedicated itself to rebuilding the country after the Korean War. The initiative tries to connect the population's broader interests and social aspirations with job opportunities and new types of employment in the form of an "encore career". This implies continued work opportunities across projects, not just "belonging" to a single employer. This approach also enables the 50+ demographic to build social connections and find new ways to serve their communities. It allows them to make the most of this time of life, while also continuing to earn an income, acquire new personal meaning and have a social impact. The Seoul 50+ policy creates and promotes new 50+ job models for the public and private sectors, by expanding socially meaningful job models through paid volunteer jobs ("Boram jobs") and operating 50+ start-up venture competitions, incubation and encore out-placement programmes.

NOVELTY
The comprehensive nature and scale of the Seoul 50+ policy is unique. Other countries have initiated similar projects, such as Germany's Bundesprogramm Perspektive 50plus[134] (2005 to 2015), but not to the same level or extent.

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134. See www.perspektive50plus.de.

Figure 59: **Peer-to-peer counselling**

Source: Seoul 50+ Foundation of the Seoul Metropolitan Government, Paris, 2017.

178,032
2016-2017 CAMPUS VISITORS

1,825
SOCIAL SERVICE VOLUNTEER JOBS

70
COUNSELLING CASES PER DAY

Figure 60: **50+ statistics as of November 2017** *Source:* Seoul 50+ Foundation of the Seoul Metropolitan Government, Paris, 2017.

RESULTS AND IMPACT

As of August 2017, 50+ programmes have registered more than 15 000 people, the 50+ generation has organised 112 communities, 600 people have participated in 13 different "Boram Jobs" streams and 50+ campuses have provided more than 303 courses (see also Figure 60). While these numbers are not large compared to the size of the target group, years remain before the full institutionalisation of the programme. However, the initiative is already scaling. Other local municipalities are benchmarking 50+ campuses and centres of the Seoul Metropolitan Government, and the national government has announced a cross-ministry plan to establish social infrastructure for the third act of life. Success will depend on the ability of national ministries to operate across fragmented interventions in an effective manner.

USER PERSPECTIVE

Prior to launching the Seoul 50+ initiative, the city conducted a needs assessment of 1 000 residents aged over 50 in Seoul. This was followed by a series of consultation processes with stakeholders to clarify roles and responsibilities among existing welfare entities. As the programme evolves and develops, with input from the 50+ generation itself, feedback from users is integrated into the approach. At the end of August, the OECD team met with a selection of 50+ peer-to-peer counsellors, community leaders and programme participants, all of whom saw great value in the initiative.

CHALLENGES AND LESSONS LEARNED

Vulnerable groups rarely carry a voice within the political system, so strong political proponents are needed. The Mayor of Seoul had to defend the initiative in its early days, with opponents of the programme stating that investments should go instead to those currently facing poverty.

As the current 50+ generation differs from prior retiring cohorts, a user-centred approach was essential. However, not all user needs are resolved – especially those relating to the long-term financial security of groups entering old age. There is also a disconnect in terms of the services and models people should adopt after they reach the age of 65, with different organisations (i.e. Seoul Welfare Foundations and elder welfare institutes) responsible for the latter in the city.

In general, it is difficult to fit a new policy into existing silos. Whether it concerns employment, lifelong learning or welfare, effort is needed to distinguish a new policy as something different, and to ensure co-ordination with existing policies in order to create synergies. Paradigm shifts take time. The initiative therefore needs space to evolve to ensure a "business-as-usual" mind-set does not take over.

CASE STUDY ⚎ Bansefi
EL BANCO QUE TE INCLUYE

Financial Inclusion Programme for Migrants – Mexico

The Financial Inclusion Programme for Migrants is an innovative financial services initiative that provides bank accounts and other support to a unique set of migrants – Mexican citizens repatriating from the United States amid a political climate that has added a great degree of uncertainty to their lives. To help these fellow citizens, the National Savings and Financial Services Bank (Bansefi), a development bank created by the federal government to reach vulnerable populations, has opened 11 strategically located services branches along the US-Mexico border and one at the Mexico City airport to provide them with financial services and education, which is a core requirement of repatriation (see Figure 61).

San Isidro
Tijuana

Calexico
Mexicali

Nogales
Nogales

Yuma
San Luis Rio Colorado

El Paso
Cd. Juárez

Presidio
Ojinaga

Del Rio
Cd. Acuña

Eagle Pass
Piedras Negras

Laredo
Nuevo Laredo

Hidalgo
Reynosa

Brownsville
Matamoros

Figure 61: Financial Inclusion Programme mobile branch border locations

Source: Bansefi.

THE PROBLEM

More than 11 million people who were born in Mexico live in the United States. Repatriation (i.e. moving back to Mexico) affects more than 200 000 Mexicans each year. Repatriates generally arrive without any belongings and also without documents, but usually with some money. A surge in repatriation is a possibility in the near future due to more aggressive US immigration policies. In early 2017, the Mexican government calculated that such policies may affect more than 1 million conationals, as well as a significant number of "Dreamers" (see Box 27).

In Mexico, the migrant population is considered a vulnerable group. Historically, it has had to face a variety of barriers to gain access to financial services, whether due to a lack of knowledge or information, lack of identity documents, their immigration status or simply because of the complicated process of repatriation. These migrants also frequently lack access to financial services, which can result in an inability to access other services. No financial organisations have provided financial services for even the regular flow of repatriates, let alone the potential increase represented by the Dreamers.

Box 27: WHO ARE THE DREAMERS?

In June 2012, the United States issued the Deferred Action for Childhood Arrivals (DACA) immigration policy, which allowed some non-citizens who arrived to the United States as children and remained in the country without documentation to receive renewable two-year periods of deferred action (i.e. meaning the government would delay any actions to remove the individual from the country), as well as a permit to work legally (DHS, 2017). Over 1 million Dreamers – the nickname for residents benefiting from DACA – have been approved for the programme, and live in every state in the United States. Over 700 000 Dreamers are from Mexico. In September 2017, the US government rescinded DACA, which would be phased out and officially ended after six months (DHS, 2017). Unless the US Congress takes action, the future of these residents will be very uncertain once their current deferred action status expires, potentially leading to an increase in the number of individuals repatriating to Mexico. The Mexican government is already seeing an increase in the repatriation of Dreamers and other Mexican citizens.

Source: DHS (2017); www.uscis.gov/sites/default/files/USCIS/Resources/ Reports%20and%20Studies/Immigration%20Forms%20Data/All%20Form%20 Types/DACA/daca_performancedata_fy2017_qtr4.pdf; Bansefi.

AN INNOVATIVE SOLUTION

Bansefi is a social bank based in Mexico that aims to bring banking and financial services to populations excluded or under-served by the financial system. In March 2017, Bansefi launched the Financial Inclusion Programme for Migrants to help empower these conationals by providing financial services and educational programmes specifically designed to meet their needs and help them restart their lives in Mexico. To date, 12 service branches have opened up along the border and at the Mexico City airport (see Figures 62 and 63). Bansefi helps these citizens by providing a number of services including:

- A *bank account and debit card* specifically designed for the needs of these migrants, with incentives encouraging them to save. The bank accounts charge no commission and have no minimum balance.

- *Advisory services and promotional material* to provide conationals with information and advice about personal finances, so they can make good use of and adequately manage their resources.

- Small *life insurance* and other accident insurance policies.

- Facilitated *remittances* to make it easier to receive money from the United States through pre-approved agents and bank transfers from a repatriate's US bank account.

- *Currency exchange* services to help exchange US dollars into Mexican pesos.

Figure 62: **Bansefi staff providing services at mobile branch.** *Source*: Bansefi.

In addition to helping repatriates obtain services at its branches, Bansefi uses tablets to work with citizens to open accounts in the waiting rooms of the immigration office. After activation of the account, users can access Bansefi's network of over 400 branches across Mexico. The main purpose of the programme is to reduce the vulnerability of this segment of the population and improve their quality of life, by offering them tools that enable full financial inclusion, which is a key to accessing countless other aspects of daily life in Mexico.

The Bansefi team leading the innovation believes that such services can be replicated under similar situations or conditions in many countries, as in the case of persons seeking asylum who lack official documentation or knowledge of how to open an account.

NOVELTY

Prior to this programme, there were no public policies or initiatives for financial inclusion for migrants. In addition to the creation of a new type of service, Bansefi

is unique because it represents the first time that the government's National Banking and Stock Commission (CNBV) has authorised a financial institution to use "Certificates of Admission of Repatriated Mexican", issued by the National Institute of Migration (INM), as a means of formal identification and proof of residence for financial services. Holders may also use this certificate to obtain a formal valid identity document, which will enable them to obtain other services and vote. Bansefi is the only bank authorised to allow individuals to open accounts using this certificate as the sole identity document, thus eliminating countless barriers which these citizens would otherwise face.

RESULTS AND IMPACT

The financial services offered at the Bansefi branches have been well-received by conationals undergoing the repatriation process. They have resulted in quicker integration of repatriates into the economy, more productive returns from restarting labour activities to generate income, and improved family well-being by

Figure 63: **Customer at Financial Inclusion Program mobile branch.** *Source*: Bansefi.

helping to provide security for repatriates' financial resources and allowing them to receive remittances. It is believed that the social and financial inclusion of returnees will have a significant impact on family well-being and Mexico's development. Although though the programme is quite new, in its first six months of operation it has already helped 6 962 citizens open bank accounts, exchange currencies and/or receive remittances.

USER PERSPECTIVE

The demand for products has exceeded expectations. Customers state that the services provided by Bansefi's branches reduce barriers of access to resources, provide peace of mind and allow them to reach their destinations with their resources secure. They also state that opening a bank account encourages them to make more efficient use of the available financial instruments.

CHALLENGES AND LESSONS LEARNED

A key challenge for the Financial Inclusion Programme for Migrants was the very limited timeframe. The entire programme had to be rolled out and implemented within four months, as the government wanted to move quickly due to the significant level of uncertainty and speculation. To ensure this could happen, the project had to be prioritised with all available resources focused on the programme. The guiding role of senior leadership, both at the political level and senior levels within Bansefi, was a necessary requisite.

The Bansefi team who implemented the initiative also found that successful and rapid implementation required assembling a team ready to respond to any needs that might arise. They also highlighted the importance of coordinating a series of inter-institutional groups and ensuring that all those involved understood the importance and scope of the project. The team also believes that it is important to leverage existing infrastructure (e.g. offices along borders, operating bank branches, etc.) to minimise overheads and build upon models that are already successful.

CASE STUDY

Asker
kommune

Asker Welfare Lab – Norway

Asker Welfare Lab[135] is a new concept for service delivery centred solely on the citizen, in which all relevant municipal services, together with external partners – the Investment Team – invest together in a person's welfare (see Figure 64). The lab takes an investment mind-set and treats citizens as co-investors. The aim is to raise the living standards of vulnerable individuals, thereby bettering the quality of life of each person and family in the programme. Most importantly, experts have to partner with the citizens whose lives they want to change, under the motto, "No decision about me shall be taken without me". Public sector investment is closely monitored through a new form of reporting, focusing on the realisation of outcomes.[136]

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135. See www.asker.kommune.no/om-asker-kommune/innovasjon-i-asker/innovasjonsprosjekter.

136. Norway's Asker Welfare Lab is also featured in the 2018 World Government Summit's *Edge of Government* exhibit. See https://edge.worldgovernmentsummit.org.

THE PROBLEM

Public sector services tend to be siloed. Inside national governments, the effects of these silos can be difficult to perceive, but the impacts become clearer closer to citizens, the end users. Municipalities deliver services to citizens "from the cradle to the grave", but the services themselves are often so different that they produce few synergies between them. When public services are layered on top of each other, and designed and delivered in a fragmented fashion, value for citizens falls through the cracks. Yet, the sole reason that public services exist is to benefit citizens at different stages of their lives in a meaningful way. Those in the most vulnerable positions are usually the ones who suffer most from fragmentation, and are usually the biggest service recipients. Consequently, public services can add complexity to already difficult lives (e.g. through tiring application procedures, contradictory intervention aims, etc.), rather than helping people to find sustainable solutions.

Public sector organisations tend to address these co-ordination problems within existing organisational structures through cross-service meetings or arena gatherings. However, the knowledge that results stem from working across all pillars (e.g. welfare, work, health, education and housing) does not mean that organisations will act that way. Looking to address this dilemma, the Asker municipality asked: "What if the municipality starts thinking

Figure 65: **Asker Welfare Lab team and programming**

Source: Asker Welfare Lab.

like an investor – investing in people, instead of just being a case worker, pushing people and paper around?"

AN INNOVATIVE SOLUTION

In 2013, the Asker municipality participated in a project with the Norwegian Centre of Design and Architecture (DOGA)[137] and LiveWork Studio on service design as a method to reshape social housing. The purpose of the project was to create a new direction for social housing

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137. See www.visitoslo.com/en/product/?TLp=15376.

Figure 64: **Principles of the Asker Welfare Lab**

Taking the risk of early investment to achieve long-term socio-economic benefits.

Planning long-term interventions where the municipality is co-ordinated as one unit.

1

2

3

4

Creating a better experience for the citizen.

Considering the citizen as a "coinvestor" actively contributing to his/her own future.

Source: Asker Welfare Lab.
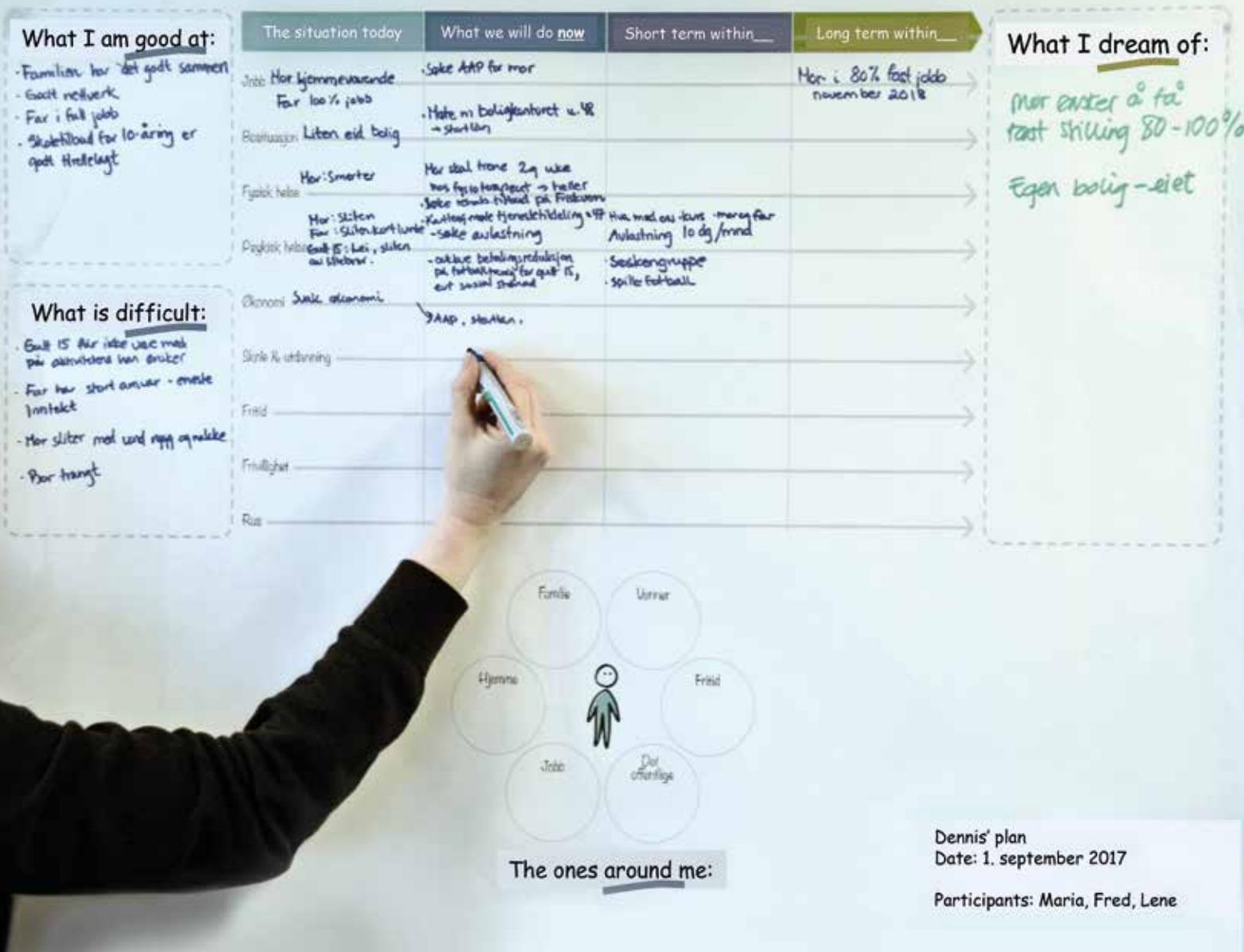
Figure 66: **Asker Welfare Lab mapping tool** *Source*: Asker Welfare Lab.

services under the heading of the "Housing Office of the Future". It quickly became clear that citizens' needs in complex housing and living situations were not adequately met and that the problem was too narrowly defined by focusing on just housing. Municipal workers found that they could not achieve their objective within the traditional service model in an adequate manner. The partners reframed the project and agreed that future services should have a singularly citizen-centric focus and that the public sector should adopt an investor-like mind-set. Before launching the lab, the investment thinking was tested and piloted in 2014 by a new department established within the municipality: the "Citizen Square". With new principles in place, the municipality developed the model for the service concept of the Asker Welfare Lab (see Figure 65).

The lab empowers frontline civil servants, as investors, to work across silos and map and identify citizens' comprehensive needs. To this end, a new planning matrix was designed to allow for structured conversations between the citizen and the investment team. This

approach helps to uncover the real nature of the problem. For example, in one case civil servants were working on a more stable housing situation, while the citizen's need stemmed from the immediate threat of losing a driving licence. While this was not a "municipal responsibility", it was clear that the person's overall situation would greatly profit from more targeted help. Investors therefore need an overview of the issues citizens face and must sometimes take risks and go beyond their usual remits, in the hope of attaining greater rewards. For this, the lab uses innovative tools (see Figures 66 and 67).

Nevertheless, investors, working with the citizen, need to choose carefully what they want to invest in and what would deliver the most value. They need to analyse the possibilities and barriers surrounding the citizen and their networks in depth. The lab helps citizens identify their own assets in order to strengthen the coinvestment with the wider Investment Team at the core of the lab. The teams consist of a variety of stakeholders that can help to pool resources in and outside the public sector and spur

change.[138] These teams are trained in investment thinking and have an extended mandate to make decisions.

Initially, the Citizen's Square was the only gateway to the Asker Welfare Lab. Now, any public service at the municipality can become a way to reach the Investment Team. The Asker Welfare Lab is currently in its second phase of development involving a broader set of services and participants. In 2016-17, a pilot focused on three specific target groups: families with children experiencing "vulnerable living conditions", vulnerable youngsters between the age of 17-25, and families with children with disabilities. The lab's focus switched from after-the-fact assistance to prevention and early intervention.

NOVELTY

While concepts of co-production, co-creation and collaborative innovation are increasingly common, the Asker Welfare Lab represents a totally new philosophy of service delivery, challenging the traditional public sector

138. The Investment Team can consist of individuals from health clinics, kindergartens and schools, among others, as well as specialised agencies (e.g. "Special Services for Children, Youth and Families", "Services for Mental Health and Substance Abuse", etc.) and representatives outside the municipal organisation from voluntary and private sector and the family's own network.

mind-set which tends to be expert-focused and, at times, patronising or condescending to citizens. The investor mind-set – "organising the way to a solution" – cuts across organisational silos, empowers frontline staff and gives them budgetary mandates. Furthermore, as citizen and partners have to act as co-investors in decision-making, power is shared with those in need.

RESULTS AND IMPACT

The piloting phase ended in the spring of 2017 and first user engagement shows that citizens experience value from participating. The Asker Welfare Lab model was tested with at least 20-30 citizens/families. Living conditions and quality of life were measured before and after the encounter with the Investment Team showing improvements. The municipal employees involved, who now have greater access to resources and can make investments at an earlier stage, feel that they can effect real change. Common planning also saves time that can be invested in more effective casework.

Investment thinking is further developed in a wider municipal context. Solutions and measures are created through co-operation with the voluntary sector, private

Figure 67: **Asker Welfare Lab contributes to an evident improvement of the citizens' situation**
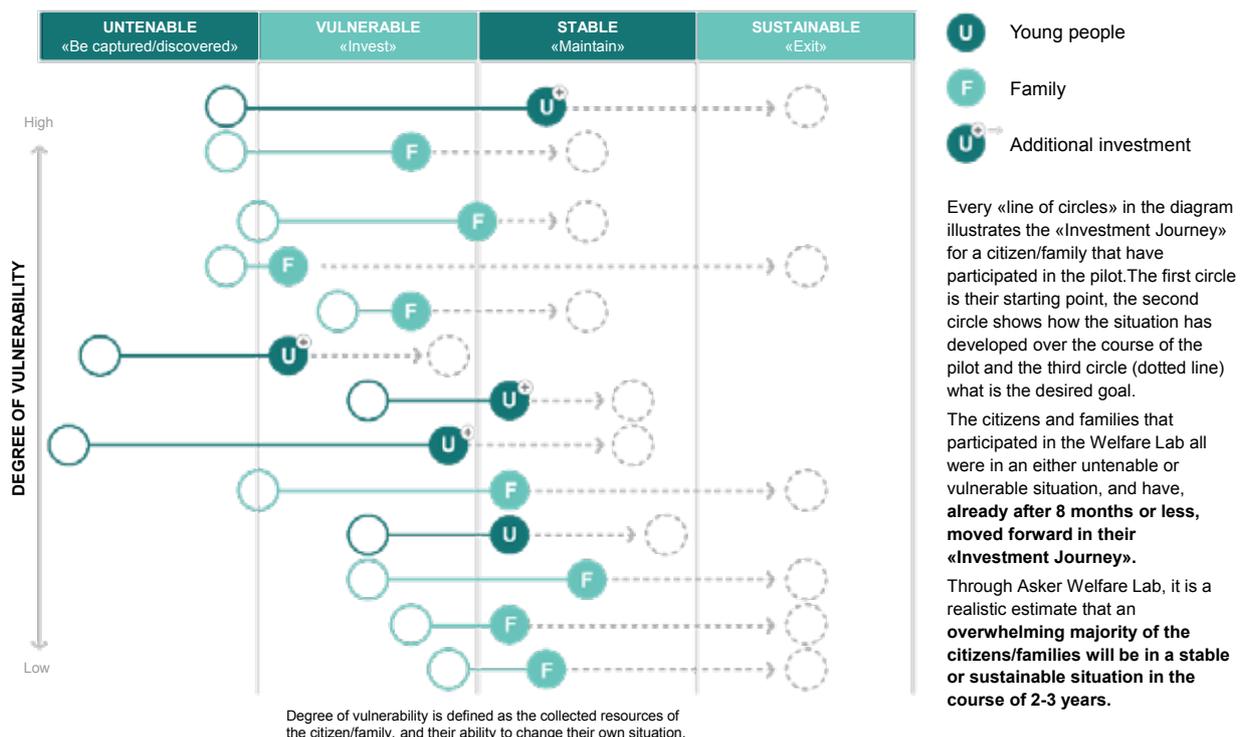
Degree of vulnerability is defined as the collected resources of the citizen/family, and their ability to change their own situation.

Source: Asker Welfare Lab.

businesses and the Asker community as a whole. At the moment, the Asker municipality is working to identify key performance indicators needed to scale and disseminate the model both internally and externally. The municipality does not exist in a vacuum and cannot influence people's lives alone; hence, it is imperative that regional or even state-level interventions co-ordinate with those of the municipality in the future.

The project has been recognised as a National Learning Project in Norway and was one of three projects to receive the annual National Innovation Award from the Ministry of Local Government and Modernisation. It has also been awarded a Best Practice Certificate from the European Public Sector Awards (EPSA) 2017.[139]

USER PERSPECTIVE

User perspectives are central to the Asker Welfare Lab including for problem identification and the lab's approach to working with citizens. Design thinking and cocreation were used throughout the development. While the lab is still developing more sophisticated evaluation tools, there is early evidence that this approach is working for citizens. One citizen explained that: "The mapping tool makes me feel included. It makes me feel that I actually can have an impact on the outcomes."

139. See www.epsa2017.eu.

CHALLENGES AND LESSONS LEARNED

The case of the Asker Welfare Lab highlights the importance of having supporting infrastructure in place for innovation. This includes leadership that allows for piloting, making mistakes and learning quickly from them. It is also crucial to have outside funding to free up the necessary competent workers to pilot new practices. Without this, pushing for change in public organisations becomes very difficult.

From experience, the lab has learnt that putting the family and citizen and their needs at the centre of services is key. This allows the lab to counter expert bias (trying to fit the reality to expert views) and make a real change in people's lives. "We have gone from being insecure about checking with the citizens to being insecure if we have not checked with the citizens first."

Maintaining an overview of problems and their solutions requires better co-ordination of resources, shared mandates and responsibility between public departments, and new models to measure effects. Furthermore, the case demonstrates that the potential results of co-operation between the voluntary sector, private businesses and social entrepreneurs are much greater than anticipated. While not always easy, this approach can deliver results.

Figure 68: **Asker Welfare Lab planning session**

"It is not enough to implement best practices, when the real need lies in creating the next practice."
Asker Welfare Lab submission to OECD Call for Innovations

Source: Asker Welfare Lab.

Conclusion

This review has been conducted at a challenging and demanding moment in history, with disruptive technologies, globalisation and economic inequality combining to make public sector challenges more complex than ever before. This complexity is the core feature of most policy issues today; their characteristics are interrelated in multiple, hard-to-define ways, and new tools are required to help governments respond. However, governments are often ill equipped to deal with these problems. Existing structures, systems, processes and skills are not yet adapted to current realities, and it is clear that the status quo is insufficient to address the nature of today's challenges.

The public sector is in need of a major course correction to cope with this increasing complexity and uncertainty. New ways are needed to examine problems and make decisions that affect billions of people every day. This course correction can only be achieved through innovation. However, no single public sector institution, whether a city or a national government, can or should undertake this transformation in isolation. All governments, as well as their partners in industry and civil society, must work together to drive solutions based on foundational, systems wide and collective perspectives. Innovation must cascade upwards from towns and cities, to states and regions to countries and then across the globe – as well as horizontally across all these levels. It should be driven by dedicated individuals working at all levels from entry-level employees to ministers and CEOs.

As this review demonstrates, governments are viewing today's challenges as a call to action to reconceive the basic underpinnings of how they function, their purpose, and how they engage with and support citizens and businesses. In particular, governments are innovating to:

- build and scale digital **identity** programmes that serve as a foundation for innovative services, while supporting people and businesses to express their unique identities and spur discussions of national identity in an increasingly borderless world;

- embrace **systems approaches and enablers** to lead a paradigm shift in the way they provide services, by innovating to transform and re-align the underlying processes and methods of the business of government in cross-cutting ways;

- foster better conditions for **inclusiveness and vulnerable populations**, in order to address complex current and future problems, and to create a world in which no one is left behind and everyone has access to opportunities for a better life.

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Such trends are part of an emerging movement that views innovation as the new normal of government. Many of the innovations studied in this review prove that remarkable impacts can be achieved by connecting disparate services, systems and people. Based on this principle, OPSI and the MBRCGI are working to fuel this movement by serving as a convener and connector of innovators and innovations worldwide. By conducting this review, OPSI and the MBRCGI seek to diffuse new and interesting ideas and bring together a growing community of innovators to share novel thinking and initiatives to help governments at all levels move forward together.

Appendix 1. Development of public procurement strategies/policies to support secondary policy objectives

	Green public procurement		SMEs		Innovative goods and services	
	2016	2014	2016	2014	2016	2014
Australia	■	●	●	●	●	●
Austria	●◆	●	●◆	◆	●◆	●
Belgium	●◆	●◆	●	●	●	●
Canada	●◆	●◆	●	●	◆	●
Chile	●◆	●◆	●◆	●◆	○	●
Czech Republic	–	–	–	–	–	–
Denmark	●	●	●	●	●	●
Estonia	●	○	●	○	●	○
Finland	●◆	●	◆	◆	●◆	◆
France	–	●◆	–	●◆	–	●◆
Germany	●	●	●	●	●	●
Greece	◆	●◆	◆	●	○	○
Hungary	●	◆	●	●	●	●
Iceland	●	●	○	○	○	○
Ireland	●	●	●	●	●	●
Israel	●	–	●	–	○	–
Italy	●	◆	◆	◆	◆	◆
Japan	●	●	●	●	○	●
Korea	●	●	●	●	●	●
Latvia	●	–	●	–	◆	–
Luxembourg	–	●◆	–	●◆	–	◆
Mexico	●	●	●	●	●	●
Netherlands	●	◆	●◆	●◆	●◆	●◆
New Zealand	●◆	●◆	●◆	●◆	●◆	●◆
Norway	◆	■				
Poland	●◆	●	●	●	●	●
Portugal	●	●	●	◆	◆	◆
Slovak Republic	◆	○	●	○	○	○
Slovenia	●	●◆	●	●◆		●◆
Spain	●	●◆	●	●	●	●
Sweden	●	●◆	–	●◆	–	●◆
Switzerland	–	●◆	–	●	●	●
Turkey	●	●	●	●	●	●
United Kingdom	●	●	●	●	●	●
United States	–	●	–	●	–	●◆
OECD Total						
● Strategies/policies developed at the central level	25	26	24	24	19	22
◆ Internal strategies/policies developed by some procuring entities	11	14	8	12	9	11
■ Rescinded	1	1	0	0	0	0
○ Never developed	0	2	1	3	6	4
– No information available	6	3	6	3	6	3
Colombia	●	◆	●	●	●	●
Costa Rica	●	●	●	●	○	○
India	○	–	●	–	◆	–
Lithuania	●	–	●	–	●	–
Russia	–	○	–	●	–	○

Source: OECD (2016, 2014), *Survey on Public Procurement,* OECD, Paris.

Australia's ICT Sustainability Plan expired in June 2015 but Australia's Commonwealth Procurement Rules require that officials consider the relevant financial and non-financial costs of each procurement, including but not limited to environmental sustainability of the proposed goods and services.

In Norway, the first national action plan on, Environmental and Social Responsibility in Public Procurement, was adopted in 2007 and then rescinded.

Appendix 2. Innovation in central/federal government human resource management frameworks, strategies and programmes, 2016

	Competence framework	Training and development programmes	Recruitment strategy / guidelines	Performance assessment	Promotion criteria	Leadership development framework (or programme)	Mobility programmes	Innovation awards
Australia	○	○	○	○	○	○	●	●
Austria	○	●	●	○	○	●	●	●
Belgium	●	●	●	●	○	●	●	○
Canada	●	●	●	●	●	●	●	●
Chile	●	●	○	○	○	○	○	●
Czech Republic	○	●	●	●	●	●	○	○
Denmark	●	●	○	○	○	○	○	○
Estonia	●	●	○	○	○	●	○	○
Finland	●	●	○	○	○	●	○	●
France	○	●	○	○	○	●	○	●
Germany	○	●	○	○	○	○	○	●
Greece	●	●	●	●	●	●	○	○
Hungary	○	○	○	○	○	○	○	○
Iceland	○	○	○	○	○	○	○	○
Ireland	○	○	○	○	○	○	○	●
Israel	●	●	○	●	○	●	●	●
Italy	○	●	●	○	○	○	●	●
Japan	○	●	○	●	●	●	○	●
Korea	●	●	●	●	●	●	●	●
Latvia	●	○	○	○	○	●	○	○
Luxembourg	○	○	○	○	○	○	○	○
Mexico	●	●	○	○	○	○	●	●
Netherlands	○	○	○	○	○	○	○	●
New Zealand	○	○	○	○	○	○	○	●
Norway	○	○	○	○	○	●	○	○
Poland	○	●	○	●	○	○	○	●
Portugal	●	●	○	●	○	●	○	○
Slovak Republic	○	●	○	●	○	○	○	●
Slovenia	●	○	○	●	●	●	○	●
Spain	●	●	●	●	●	○	○	●
Sweden	○	○	○	○	○	○	○	●
Switzerland	○	○	○	○	○	●	○	○
Turkey	●	●	●	●	●	●	○	○
United Kingdom	●	●	●	●	○	●	●	●
United States	○	○	●	○	○	●	○	●
OECD Total								
● Included	16	21	11	14	8	19	9	22
○ Not included	19	14	24	21	27	16	26	13

Source: OECD (2016) *Survey on Strategic Human Resources Management in Central/Federal Governments of OECD Countries*, OECD, Paris.

For mobility programmes the question – "Are there specific programmes to encourage mobility in the civil service?" – was used as, mobility programs in general affect innovation positively.

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