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UNITED NATIONS E-GOVERNMENT SURVEY 2014

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The drawing on the front cover was designed by Ms. Qiuchen Wang who in 2013 served as an intern in the Division for Public Administration and Development Management (DPADM) of UNDESA. The drawing was prepared as part of DPADM's submission for the 2013 UN Online Volunteering Award.

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Department of Economic and Social Affairs

UNITED NATIONS E-GOVERNMENT SURVEY 2014

E-GOVERNMENT FOR THE FUTURE WE WANT

United Nations
New York, 2014

United Nations Department of Economic and Social Affairs

The Department of Economic and Social Affairs of the United Nations Secretariat is a vital interface between global policies in the economic, social and environmental spheres and national action. The Department works in three main interlinked areas: (i) it compiles, generates and analyzes a wide range of economic, social and environmental data and information on which States Members of the United Nations draw to review common problems and to take stock of policy options; (ii) it facilitates the negotiations of Member States in many intergovernmental bodies on joint courses of action to address ongoing or emerging global challenges; and (iii) it advises interested Governments on the ways and means of translating policy frameworks developed in United Nations conferences and summits into programmes at the country level and, through technical assistance, helps build national capacities.

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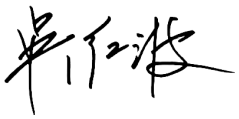
Foreword

At the United Nations Conference on Sustainable Development held in Rio de Janeiro in June 2012, a global consensus was reached that to achieve our sustainable development goals we need institutions at all levels that are effective, transparent, accountable and democratic. E-government holds tremendous potential to improve the way that governments deliver public services and enhance broad stakeholder involvement in public service.

The 2014 edition of the *United Nations E-Government Survey*, coming on the heels of a ten-year period of the World Summit on the Information Society (WSIS) action line implementation, asserts that information and communication technologies are potent enablers of the effective, transparent and accountable institutions envisaged by world leaders at Rio. Countries in all regions of the world and at all levels of development continue to make significant investments in public sector ICT for these reasons. It is my view that such efforts are vital to achieving broad public participation in decision-making, enhancing access to information and removing barriers to public service—all essential if we are to assure a future of equitable economic growth and sustainable development that are free of poverty and hunger.

I commend this report to policy-makers, leading officials and analysts considering the contribution that e-government can make to the future we want and the place of effective public management in good governance in the post-2015 era.



WU Hongbo
Under-Secretary-General for Economic and Social Affairs
and Secretary-General for the International Conference
on Small Islands Developing States

For the family of and in memory of

Haiyan Qian,

Late Director of DPADM, UNDESA,
for her visionary and dynamic leadership,
and her dedication to global public policy, e-government,
public administration and development

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Preparation of the publication was undertaken by a group of senior e-government researchers and advisers initially under the overall guidance of the late Haiyan Qian, Director of DPADM, DESA, and then by Vincenzo Aquaro, Chief of the E-Government Branch (EGB).

Vincenzo Aquaro also led the Data Management Team in the data collection and *Survey* research. The team included Adriana Alberti, Senior Governance and Public Administration Officer; Anni Haataja, Governance and Public Administration Officer; Wai Min Kwok, Governance and Public Administration Officer; Deniz Susar, Governance and Public Administration Officer and it was supported by Elie Hobeika, Associate Governance and Public Administration Officer and Oksana Yarashuk, Programme Assistant. The team was assisted by Said Maalouf, Daniela Marin Puentes and Quentin Tourancheau, consultants in DPADM. Vincenzo Aquaro, Roberto Bellotti, Associate Professor in Experimental Physics, University of Bari, Italy; Elena Garuccio and Nicola Amoroso, Quantitative Analysts, University of Bari, Italy, provided technical advice on the refinement of the statistical methodology and Elena Garuccio conducted the statistical regressions.

The analytical work was coordinated by John-Mary Kauzya, Chief of the Public Administration Capacity Branch (PACB), DPADM. The Report was written by a team of DPADM staff members. Chapter 1, the Annexes and the Methodology section were drafted by Wai Min Kwok and Anni Haataja supported by Elie Hobeika and assisted by Said Maalouf, Elena Garuccio and Daniela Marin Puentes. Chapter 2 was prepared by Patrick Spearing, Senior Governance and Public Administration Officer; Chapter 3 was authored by Elia Armstrong, Chief, Development Management Branch (DMB); Chapter 4 was written by Adriana Alberti; Chapter 5 was prepared by Wai Min Kwok while Chapter 6 was authored by Seema Hafeez, Senior Governance and Public Administration Officer. Chapter 7 was written by Seok-Ran Kim, Governance and Public Administration Officer and Chapter 8 was prepared by Deniz Susar. Richard Kerby and Jonas Rabinovitch, Senior Inter-Regional Advisers in DPADM, provided case studies and field data. The Executive Summary, substantive and editorial revision was undertaken by Vincenzo Aquaro, Adriana Alberti, Jeremy Millard, Senior Consultant at the Institute of Technology in Denmark and Elie Hobeika assisted by Oksana Yarashuk and Daniela Marin Puentes.

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In November 2013, the United Nations Volunteers programme announced that UN DESA was one of the ten winners of the "Online Volunteering Award 2013" in recognition of the effort undertaken by the *United Nations E-Government Survey* 2014 Data Team led by the E-Government Branch of the Division for Public Administration and Development Management.

Acronyms

API	Application Programming Interfaces
BYOD	Bring Your Own Device
CDO	Chief Data Officer
CIO	Chief Information Officer
DAE	Digital Agenda for Europe
DPA	Data Protection Act
DRR	Disaster Risk Reduction
EGDI	E-Government Development Index
EPI	E-Participation Index
EU	European Union
FOI	Freedom of Information
G2C	Government-to-Citizen
G2G	Government-to-Government
GDP	Gross Domestic Product
GNI	Gross National Income
HCI	Human Capital Index
HDI	Human Development Index
ICT	Information and Communications Technology
IT	Information Technology
ITU	International Telecommunication Union
LDC	Least Developed Countries
LLDC	Land-Locked Developing Countries
MDGs	Millennium Development Goals
NEPAD	The New Partnership for Africa's Development
NGO	Non-Governmental Organization
OECD	Organization for Economic Cooperation and Development
OGD	Open Government Data
OSI	Online Service Index
PPP	Public-Private Partnership
RSS	Really Simple Syndication
SIDS	Small Island Developing States
SMS	Short Message Service
TII	Telecommunication Infrastructure Index
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
WAP	Wireless Application Protocol
WOG	Whole of Government
W3C	World Wide Web Consortium

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Executive summary

The linkages of e-government and sustainable development

The Millennium Development Goals (MDGs) set by world leaders more than ten years ago have made a huge impact on the lives of billions of people. In particular, extreme poverty has decreased in every region and substantial progress has been made in access to safe-drinking water, decent housing and life-saving HIV treatment, while between 2000 and 2011 the world has achieved parity in primary education between girls and boys with more than 40 million children attending school. However, progress has been uneven: more than one billion people still live in extreme poverty and there are persistent challenges in eradicating hunger, improving health, promoting gender equality, enhancing access to clean water and sanitation, among others. As the United Nations continues to promote prosperity, equity and peace beyond 2015, a global conversation has begun to define a concrete sustainable development framework that embodies these bold, ambitious and universal values.

The United Nations General Assembly in its resolution entitled "The Future We Want" has reaffirmed the strong need to achieve sustainable development by promoting sustained, inclusive and equitable economic growth, creating greater opportunities for all, reducing inequalities, raising basic standards of living, fostering equitable social development and inclusion and promoting the integrated and sustainable management of natural resources and ecosystems. It stressed that all levels of government and legislative bodies play an important role in promoting sustainable development. Overall, "the goal of sustainable development is to ensure the promotion of an economically, socially and environmentally sustainable future for the planet and for present and future generations. Sustainable development emphasizes a holistic, equitable and far-sighted approach in decision-making at all levels. It rests on integration and a balanced consideration of social, economic and environmental goals and objectives in both public and private decision-making. It emphasizes intragenerational and intergenerational equity". (E/2013/69, para. 6).

As we near the 2015 deadline for the current MDGs and start to prepare the ground for the next steps in global sustainable development, it is clear that all governments are faced with a set of complex, multi-faceted and interdependent challenges. Global challenges including poverty, inequality, climate change, peace and security, are such that no single actor—let alone single government

or single ministry—can effectively deal with them on their own. Effective collaboration among agencies across all levels of government is essential, as it is with non-governmental actors, to ensure good governance and good development outcomes. Collaborative governance, underpinned by a well-functioning public administration, is crucial to improving people's lives. The public sector must deliver, equitably and efficiently, essential services that meet citizen needs, provide opportunities for economic growth, as well as facilitate citizen engagement and participation in public policymaking and service delivery, so as to promote the empowerment and well-being of all people.

E-government and innovation can provide significant opportunities to transform public administration into an instrument of sustainable development. E-government is "the use of ICT and its application by the government for the provision of information and public services to the people" (Global E-Government Readiness Report 2004). More broadly, e-government can be referred to as the use and application of information technologies in public administration to streamline and integrate workflows and processes, to effectively manage data and information, enhance public service delivery, as well as expand communication channels for engagement and empowerment of people. The opportunities offered by the digital development of recent years, whether through online services, big data, social media, mobile apps, or cloud computing, are expanding the way we look at e-government. While e-government still includes electronic interactions of three types—i.e. government-to-government (G2G); government-to-business (G2B); and government-to-consumer (G2C)—a more holistic and multi-stakeholder approach is taking shape.

Through innovation and e-government, public administrations around the world can be more efficient, provide better services and respond to demands for transparency and accountability. E-government can help governments go green and promote effective natural resource management, as well as stimulate economic growth and promote social inclusion, particularly of disadvantaged and vulnerable groups. ICTs have also proven to be effective platforms to facilitate knowledge sharing, skills development, transfer of innovative e-government solutions and capacity-building for sustainable development among countries. E-government can generate important benefits in the form of new employment, better health and education.

The conceptual framework of the *United Nations E-Government Survey*

Since its inception in 2003, the conceptual framework of the *United Nations E-Government Survey* has adopted a holistic view of e-government development resting on three important dimensions: (i) the availability of online services, (ii) telecommunication infrastructure and (iii) human capacity. The methodological framework has remained consistent across survey periods while carefully updating its components to reflect evolving successful e-government strategies, pioneering practices and innovative approaches to tackling common challenges for sustainable development.

The United Nations E-Government Survey's conceptual framework is based on the following guiding principles.

- First, e-government in this *Survey* is considered to be the means to an end, the end being development for all. It is considered to be a powerful tool at the disposal of governments, which, if applied effectively, can contribute substantially to eradicating extreme poverty, protecting the environment and promoting social inclusion and economic opportunity for all. It is intended to support the development efforts of United Nations Member States.
- Second, the *Survey* and its results must be placed in the context of the overall pattern and level of development of each country concerned. It is vital that the assessment of the on-line presence of governments highlighted by the *Survey* does not provide a distorted picture of the progress made—and challenges faced—by Member States. At the same time, it is equally important to underscore the promise of e-government. Therefore, main measurements in this *Survey* are based on e-government readiness, which duly takes into account not only countries' specific e-government initiatives, as evidenced by web presence, but also their infrastructure and human resource endowments.
- Third, the focus of the *Survey* is on provision of socio-economic and environmental services to the population through the use of e-government as a programmatic tool, as well as on participation and social inclusion.
- Finally, the *Survey* assesses e-government readiness worldwide, taking the view that the ultimate objective remains the "inclusion of all" in development.

An overview of the 2014 *United Nations E-Government Survey*

The *United Nations E-Government Survey* is produced every two years by the Department of Economic and Social Affairs. It is the only report in the world that assesses the e-government development status of the 193 United Nations Member States. It serves as a tool for decision-makers to identify their areas of strength and challenges in e-government and to guide e-government policies and strategies. The publication also highlights emerging e-government trends, issues and innovative practices, as well as challenges and opportunities of e-government development. Each chapter provides an analysis of the *Survey*'s data, as well as highlights strategies, challenges and opportunities so as to provide policy options. The *Survey* is intended for government officials, academics, intergovernmental institutions, civil society organisations, the private sector and citizens at large.

The theme of the 2014 edition of the *United Nations E-Government Survey*—E-Government for the Future We Want—is particularly relevant to addressing the multi-faceted and complex challenges that our societies face today. The publication addresses critical aspects of e-government for sustainable development articulated along eight chapters.

Chapter 1 presents an overview and broad analysis of the 2014 *Survey* data by providing progress at a glance, regional developments and information by specific country groups, including Small Island Developing States, Landlocked Developing Countries and Least Developed Countries. Chapter 2, on progress in online service delivery, presents how online services are measured and explains what is new in the 2014 *Survey*. Chapter 3, which focuses on e-participation, examines global and regional rankings of e-participation, as well as trends by sectors and levels. It also highlights opportunities and challenges in this area. Chapter 4 focuses on the critical role of whole of government to promote holistic and integrated approaches to e-government development. It explores how to promote collaborative leadership, shared organizational culture, institutional frameworks for effective coordination and accountability; innovative processes for service delivery and citizen engagement; and IT management strategies for enhanced collaboration. Chapter 5, which focuses on mobile and other channels for inclusive multichannel service delivery, explores the global and regional trends of various channels of public service delivery, including web portal, email, SMS text service, mobile portal and mobile application, social media, public kiosks, public-private partnerships, counter and telephone services. It also examines principles of a multichannel approach. Chapter 6 looks at trends in bridging the digital divide and offers an overall picture of digital connectivity with a specific focus on e-services for disadvantaged and vulnerable groups at the national level. It seeks a better understanding of the challenges that Member States face in tackling this important issue. Chapter 7 outlines the current situation of e-government usage and highlights the efforts made by 193 United Nations Member States. It offers insights into greater service uptake in a multichannel world and it captures e-government benefits for sustainable development through increased user uptake. Chapter 8 offers global and regional trends in Open Government Data (OGD) and examines the findings of the 2014 *Survey* in this area.

Global trends in e-government

Due to a number of factors, there are wide disparities among regions and countries in their state of e-government development as observed throughout the 2014 *Survey*. One clear observation is that the income level of a country is a general indicator of economic capacity and progress, which thus influences its e-government development. Access to ICT infrastructure and the provision of education, including ICT literacy, are related to the income level of a nation. The absence of these factors hinders the implementation of e-government initiatives. However, it is clear that national income does not, by itself, constitute or guarantee e-government development. There are many countries that have significantly advanced their e-government despite relatively low national income, just as there are many countries which are lagging behind despite their relatively high income and thereby have good opportunities for future improvement.

The Republic of Korea has retained the top spot in 2014 with its continued leadership and focus on e-government innovation. Australia (2nd) and Singapore (3rd) have both increased considerably over their 2012 global rankings. As in previous years, the 2014 *Survey* shows that Europe continues to lead with the highest regional E-Government Development Index (EGDI) followed by the Americas led

by the United States of America (ranked 7th globally); Asia led by the Republic of Korea; Oceania led by Australia; and Africa led by Tunisia (ranked 75th globally). Nevertheless, the 2014 *Survey* shows that each geographical region exhibits high internal diversity. The leading nations in Europe include France (4th), Netherlands (5th), United Kingdom (8th) and Finland (10th). There is little doubt that underpinning this aggregate snapshot is the level of economic, social and political development of the countries concerned, and one of the primary factors contributing to a high level of e-government development is past and current investment in telecommunication, human capital and provision of online services.

Table ES.1. World and regional e-government leaders

World e-government leaders	*Regional e-government leaders*	
Republic of Korea	AFRICA	Tunisia
Australia		Mauritius
Singapore	AMERICAS	United States of America
France		Canada
Netherlands	ASIA	Republic of Korea
Japan		Singapore
United States of America	EUROPE	France
United Kingdom		Netherlands
New Zealand	OCEANIA	Australia
Finland		New Zealand

The 2014 *Survey* also examined the specific challenges and progress of e-government in the following three country groups: the Least Developed Countries (LDCs), Small Island Developing States (SIDS) and Land-Locked Developing Countries (LLDCs). Despite the serious economic, social and environmental challenges which many of these regions and groups face, they each show outstanding examples which overcome their regional and income constraints to achieve significant e-government development.

In terms of online service delivery, the 2014 *Survey* saw an increased emphasis on e-participation features and evidence of Open Government Data initiatives on national websites given the evolving expectations about transparency and participation in public affairs. E-environment was also included in the basket of basic online services assessed—alongside education, health, finance, labour and social welfare functions—given the need to promote environmental stewardship.

Progress in online service delivery

In 2014 for the first time, all 193 United Nations Member States now have national websites, but the majority remain at the low or intermediate levels of e-government development, termed emerging and enhanced stages in the United Nations four stage online service model. Even in the case of countries with highly advanced ICT infrastructures and human resources, it can be difficult to move to the higher stages with transactional and connected services, given that these

typically require robust data protection and online payment systems, as well as secure data sharing across government institutions. It is again clear that factors other than national income are equally important, including high-level political support and leadership, strengthened institutional capacity, public accountability and citizen engagement, as well as adequate e-government programmes, ICT infrastructure and education.

In terms of usability features, a large majority of countries provide users with basic search tools to locate content, and most now do so in more than one language. However, only about half of the United Nations Member States maintain an advanced search engine, only 40 per cent enable user opinion features, such as tag clouds and 'hot topics' lists and less than one third show the availability of a secure connection. There also appears to be substantial underutilization of the potential of text-based Short Message Service (SMS) despite the dramatic global growth of mobile devices usage, including in the low income countries. The most frequently found transactional services include setting up of personal online accounts, income tax filing and business registration, but overall there is great diversity in types.

On the whole, therefore, the 2014 *Survey* data shows substantial variability in the scope of online service delivery. Differences between the highest and lowest online service scores and between the different stages of e-service development are considerable, despite progress in some areas. A large number of countries fall in the bottom third of the Online Service Index (OSI), and there appears to be a widening gap between the e-government 'haves' and 'have-nots' as technology evolves. Improved access to telecommunication infrastructure has facilitated e-government development in some cases, but in general the most advanced countries have continued to outpace the less developed in online service delivery.

Empowering people through expanding e-participation

There are clear opportunities for the future improvement of e-participation, including technology trends towards, for example, social media and mobile devices/technology which are inherently interactive, as well as crowdsourcing. There are also severe challenges, including the digital divide, low user take-up and the lack of incentives to participate. These opportunities and challenges call for effective strategies to create an enabling environment for e-participation, including appropriate legal and institutional frameworks, capacity-development for digital media literacy for citizens and a seamless integration of online and offline features for public participation.

Successful strategies need to address both formal and informal approaches to citizen engagement. To increase the likelihood of success for e-participation strategy, governments can benefit from those platforms and channels that are already in use by citizens rather than creating new ones. Promoting a clear idea and understanding of e-participation by integrating both online and offline communication tools and channels will help reach groups that are difficult to reach. Governments should encourage issues-related participation and provide consistent feedback on consultations to citizens. Motivating engagement depends more on a sense of belonging

to a political community with shared traditions and values than simply civic duty, as it does on linking these directly to the pressing issues of sustainable development.

The Netherlands (1) and the Republic of Korea (1) are leading the world e-participation ranking, followed by Uruguay (3). Morocco and Kenya are the frontrunners in Africa, Uruguay and Chile head the rankings for the Americas. The top performing countries for e-participation in Asia are the Republic of Korea and Japan. Finally, Australia and New Zealand still lead Oceania.

Table ES.2. World and regional e-participation leaders

World e-participation leaders	*Regional e-participation leaders*	
Netherlands	AFRICA	Morocco
Republic of Korea		Kenya
Uruguay	AMERICAS	Uruguay
France		Chile
Japan	ASIA	Republic of Korea
United Kingdom		Japan
Australia	EUROPE	Netherlands
Chile		France
United States of America	OCEANIA	Australia
Singapore		New Zealand

The critical need for whole-of government-approaches and collaborative governance

Although sustainable development challenges have significantly changed over the past decades and are becoming increasingly interdependent, government institutions and their functions are still largely shaped by early 20th century models of public administration in which ministries and their leaders work in "silos" and issues are tackled through a sectoral rather than a collaborative perspective. At the same time, citizens and businesses are demanding more open, transparent, accountable and effective governance, while new technologies, especially ICT, are enabling effective knowledge management, sharing and collaboration between all sectors and at all levels of government whether cross-border, national or local.

The 2014 *Survey* focuses even more than in previous years on whole of government and collaborative public governance issues at the national level as the key to addressing these complex and wide scope challenges which require integrated responses. In this context, a number of enabling factors are needed to advance whole of government. First, there is a critical need for new forms of collaborative leadership and shared organizational culture, including re-shaping values, mindsets, attitudes and behaviours in the public sector through visible guiding principles and leadership. Second, new forms of institutional frameworks for effective coordination, cooperation and accountability need to be put in place across government, between governments and with relevant non-public actors which can contribute to creating public value. Third, innovative coordination processes

and mechanisms for service delivery, and citizen engagement and empowerment are essential, as is making such services inclusive and accessible by all groups in society, including disadvantaged and vulnerable groups. Fourth, and linked to this, collaborative mechanisms are required to engage citizens in service delivery and decision-making processes which are citizen- and user-centric and, where relevant, user-driven via co-creation and crowdsourcing through decentralized governance systems.

Finally, and often underpinning the other enabling factors, it is essential to harness the power of new technology through appropriate ICT management strategies for enhanced collaboration. The global spread of the Internet and the application of ICT in government, as well as greater investments in telecommunication infrastructure coupled with capacity-building in human capital, can provide opportunities to transform public administration into an instrument of collaborative governance which directly supports sustainable development outcomes.

Reaching out to citizens through mobile, social media and inclusive multichannel service strategies

There is increasing expectation for easier access to more public information and public services from anywhere, anytime through multiple channels or citizen touch-points. The 2014 *Survey* shows that digital channels, with both their diversity and spread, are being increasingly adopted by almost all countries, while counter (face-to-face service) and telephone (voice) services, have continued to serve as fundamental channels.

In 2014, all 193 United Nations Member States have some form of online presence, as compared to 18 countries with no online presence in 2003 and three countries in 2012. Although the use of email increased only slightly between 2012 and 2014 to just over two-thirds of countries, it is likely to continue to grow in the future, especially for notification and information provision. Similar uses are seen for SMS via mobile devices, although still more than 80 per cent of countries have not yet exploited this potential mass channel which is only a slight advance from 2012. As far as the use of mobile phones themselves are concerned, there are today over 1.5 billion smart phones in use globally, and this is growing exponentially.

Between 2012 and 2014, the number of countries offering mobile apps and mobile portals doubled to almost 50 countries, where they are often used directly to support poverty eradication, gender equality and social inclusion, as well as promote economic development, environmental protection and disaster management. The use of social media by governments is also increasing fast with the number more than tripling from 2010 to 2012 and with another 50 per cent rise in 2014, so that today 118 countries use it for e-consultation and 70 for e-government generally. Both social media and mobile channels typically do not require high investment costs as they ride on consumerisation and non-governmental platforms, but they often need a business transformation and strong commitment in the public administration to maximise benefits.

There is also an increasing use of public kiosks from 24 countries in 2012 to 36 in 2014 for use as open-access facilities in public spaces and locations providing

free use of online services, especially in marginalised or remote areas and where the individual use of ICT is not widespread. Similarly, both over the counter and telephone services remain fundamental channels with the majority of countries providing at least some services using these routes. They are often seen as important supplements for individual problem solving compared to, for example, websites, which are generally better at providing information.

It is imperative for government managers to leverage the different advantages offered by various channels and find smart ways to increase usage of online services and reach out to disadvantaged and vulnerable groups for social inclusion. A multichannel approach in public service delivery is akin to a whole of government roadmap to e-government development and needs to be driven with a focused agenda and strong facilitation across all levels. Public service delivery can be greatly improved through a smart blend of channel mix, optimising the characteristics of different channels to satisfy diverse citizens' needs and having a consolidated view and analysis of channel performance.

The challenge of the digital divide

While initially the digital divide was considered primarily an issue of access to relevant information technology infrastructure, it is increasingly about capability and ability to access and use ICT. The digital divide arises from broad socio-economic inequality, and at the root of both are economic and social disparities between countries, groups and individuals which impact their ability to access and use ICT to promote well-being and prosperity. As such, the digital divide in one form or another affects people both in developed and developing countries.

Overall, despite some progress in providing a plethora of e-services and online information, efforts at mitigating the digital divide in any meaningful way have not reaped large dividends. Although meaningful access to ICT has gone beyond connectivity issues, e-government has still not yet adequately embraced human, economic and social resources, institutional structures and governance networks, which are central to developmental outcomes.

In recent years, policy makers have progressively focused on the link between use of new technologies, education and social inclusion, particularly of disadvantaged and vulnerable groups. By 2014, 64 per cent of the national government portals and websites provided integrated links to sources of archived information (policies, budget, legal documents, etc.) related to some disadvantaged and vulnerable groups, namely people living in poverty, persons with disabilities, older persons, immigrants and youth.

One aspect of the digital divide is also the e-government usage divide, which is generally correlated with demographic and socio-economic characteristics, such as income, education and age. Furthermore, as more government tasks are moved online, there is an increasing concern that a significant portion of the population will be shut off from jobs, health care, education and other government services. This is especially the case in a few of the most advanced e-government countries, for example in some European countries, with 'digital by default' strategies where many services are only available online largely driven by the cost savings governments can make, as well as the burden reductions which can be

achieved for all stakeholders. Clearly, this significantly boosts e-government usage, even though additional special provision needs to be made for groups and individuals who cannot get online.

Promoting usage is key to delivering development impacts

Leveraging e-government to deliver development impacts depends on effective usage. While the provision of e-government services on the supply side is generally increasing, improvements are also needed to the demand side of the equation, i.e. on e-government uptake. In the member countries of the Organisation for Economic Co-operation and Development (OECD), e-government usage averages out at 50 per cent, but there is great variation among countries and the use of more advanced services such as accessing and sending forms online is much less, especially as such services require robust security and payment systems. In developing countries these numbers are even lower. Countries' efforts to develop e-government therefore need to go hand in hand with their efforts to increase demand through usability features such as simplicity and personalisation, usage monitoring and tracking and user feedback and usage promotion. Indeed, many countries are doing this, although it is far from being the norm.

Increasing uptake is also dependent on aligning, mixing and integrating channels appropriate to specific service types and user groups. In this context, both mobile and social media are becoming more important both to deliver services and to interact with users in a variety of ways. This also helps government listen to and work with users and help design more appropriate, user friendly and useful services, which is in turn likely to increase take-up and impact. There are increasing examples where this is being done in sectors like education, health, poverty eradication, employment and environment, which directly support sustainable development through increased user uptake.

Policy to promote both supply side and demand side must go hand in hand. Policy efforts to increase take-up should, however, not aim just to increase usage, but should also focus on obtaining the maximum benefit from that usage for all stakeholders.

Open government data as a new development resource

The recent recognition of the importance of Open Government Data (OGD) in meeting the rights of individuals, businesses and civil organizations to access and use government information, to engage in policymaking, to improve existing public services as well as to co-create and even create new public services, is significant. Opening up government data is fundamentally about more efficient use of resources and improving service delivery. However, OGD has limited value if the data published is not utilized, which means involving stakeholders and focusing on developing sustainable ecosystems of users. Much more work also needs to be done in measuring and understanding the return on investment of OGD. Although early indications are positive on this point, precisely how successful use and business models operate remains at the experimental stage.

Data has always been a strategic asset for any organization, but its importance has exponentially grown in the last decade due to the enormous amount of data creation and advances in data collection, processing and analysis technologies. However, while the use of data in developed countries has made enormous progress in recent years, developing countries have made much less headway; therefore, they need to increase awareness, provide sufficient capacities and assist public officials with the implementation of open government data initiatives. In all countries, governments should focus even more on starting, growing and sustaining open data initiatives through updating their policy, legal and institutional frameworks as well as improving leadership and raising awareness at higher decision making levels. The amount of data that government agencies collect is likely to grow exponentially in the coming years. Although open data provides many opportunities and capabilities for government agencies, its real impact will not be realized without carefully planned data governance, both within the public sector as well as with appropriate non-public stakeholders.

The 2014 *Survey* introduced new questions related to OGD, including the existence of dedicated portals, the types of technical formats and location information, the availability of user guidelines and support and the possibility for users to propose new datasets. The 2014 *Survey* found that while many countries use government websites to share data, only 46 countries have dedicated data portals. Most main government sectors are making OGD available and most of this is in machine-readable format. Apart from the provision of OGD, there is a need to develop appropriate policy, legal and institutional frameworks to ensure that basic rights to information are available and well known. Since OGD initiatives require cooperation between various government agencies, strong political and top-level vision and management are essential. In addition, issues concerning data quality related to authenticity, integrity and re-use standards are important, as is data privacy and protection against misuse. Governments, therefore, need to ensure an appropriate balance between the need for privacy on the one hand and openness on the other.

Going forward

A post-2015 development agenda that is both unified in focus and universal in form is emerging, tackling poverty eradication and sustainable development. Such an agenda would have major implications for the expected role of e-government in supporting its implementation. As shown throughout the 2014 *Survey*, it is clear that e-government can contribute towards the post-2015 development agenda by strengthening national capabilities, enhancing governments' performance, increasing efficiency, effectiveness and inclusiveness of public services, promoting transparency and reducing corruption in the public sector, helping governments "go green", facilitating effective disaster management, favouring an enabling environment for economic growth, as well as promoting social inclusion through equitable access to services. Whole-of-government approaches, which are enhanced through ICTs, can promote integrated and inclusive service delivery. The application of ICT in government provides opportunities for multi-stakeholder engagement by strengthening collaboration mechanisms, both

within the public sector and with relevant actors outside, such as business, civil society, communities and individual citizens. It allows for broader participation in national and local policymaking and service delivery through new channels and modalities of communication.

The 2014 *Survey* shows that progress in e-government development has been attained through increased e-participation, growth of the mobile channel and social media, expanded usage and the burgeoning of open government data. However, although there are numerous inspiring exceptions, many challenges remain, such as low income, ongoing digital divides, the inadequacy of institutional change processes and lack of innovative e-government leadership. Addressing e-government challenges is often dependent on the national capacity for change and innovation, which itself largely determines the success of e-government goals. In the same vein, countries that have a more vibrant information society are able to better leverage human talent and ICT services for improved e-government performance.

Based on good practices from around the world, the 2014 *Survey* highlights that effective e-government development depends on strong political will, collaborative leadership and new governance frameworks to support and manage a citizen centric service delivery model, including a national ICT policy and e-government strategy, as well as strengthening institutions and building the capacities of public servants. The effective approaches and modalities as well as the comparative advantage of the whole-of-government approach should be considered in forming the future framework for e-government development. Commitments to collaboration, openness, transparency, accountability and participation in national public governance, backed by robust ICT infrastructure, adequate human capital and online service delivery, are also of critical importance to the development of effective e-government for a sustainable and desirable future.