Country Reports

Argentina

1 General Information

Area: 2,780,400 km²
Population: 43,431,886
Government Type: Presidential Republic
GDP: $22,400

Historical Ranking (2005 – 2016)

2 Positioning in a region

Countries in the Americas

Among American countries, Argentine is superior in the National Portal indicator. Its score is slightly lower than the US. However, other indicators are lower than the average of American countries. This may indicate that in National Portal, some developing countries are more advanced than developed countries. National Portal could be the indicator in which the performance of developing countries can exceed that of developed countries.

3 E-Government Development

The World Bank's Information Technology-based Public Sector Strengthening Program has been active since 2011 and will run through the end of 2017. This program is aimed at modernizing Argentina's procurement, taxation, and irrigation systems through the use of IT. Despite the lack of legal framework on open government initiatives, the Argentinian government has built an open government data portal. The portal contains datasets for demographic and economic statistics. The public can download the data in non-proprietary formats such as Excel, csv, and pdf files. The portal is provided by the city of Buenos Aires.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

In 2005, Argentinean government released a strategic plan that regulates the e-Governmente-Government national plan. The regulation is granted on April 27, 2005 through Decree No.378 about e-Government national plan entitled "Plan Nacional de Gobierno Electronico y Planes Sectoralies de Gobierno Electronico". The decree has been designed to improve government services thus guaranteeing more efficiency and transparency.

The decree requires the government institution in Argentina to put more attention on the following aspects:

- The use of Internet technology in the development of integrated system and the provision of information to the public
- The implementation of interoperability standards
- The creation of national portal which contain all available information from different government agencies.
- The synergy among national public administration to improve government information system

4.2 Management Optimization [MO]

The National Office of Information Technology (ONTI) is assigned to take the responsibility for implementing the decree. Under this agency, Argentina has released e-Governmente-Government programs covering G2G, G2C, and G2B. These programs are as follows:

Technological Standards for the Public Administration (ETAP) is a program aimed to develop process interoperability among government agencies in terms of network, framework, and data.

Transparency in Public Administration (the Cristal Project) was launched to fulfill the mandate established under the Fiscal Responsibility Law 2515/1999. In addition to these programs, ONTI is given a mandate to develop the regulation for digital signature.

4.3 Online Service [OS]

The five most common online government services are e-procurement, e-tax, e-customs, one-stop service, and e-health system. Argentina has released two web-based e-procurement system which

are connected each other, i.e., www.onc.mercon.gov.ar and www.cristal.gov.ar. However, during this research, these websites cannot be accessed.

The website www.afip.gov.ar is developed as the embryo of e-tax and e-customs system in Argentina. Through that website, citizen has access to download tax-related forms and obtain specified tax information. There is a login access page on that website for the citizen by using specific identity.

ONTI planned to put the government one-stop Service on the government portal. IT is still an ongoing process. Therefore, there is insufficient evidence to prove that the service is available. An e-Health system is not mentioned as one of the Argentina's e-Governmente-Government program flagships.

4.4 National Portal [NPR]

Argentina's national portal (http://www.argentina.gob.ar) provides some e-Services to citizens, companies and foreigners, but the portal's focus is on providing information and news rather than online services. Aside from two undated PDF documents that provide information in English, the portal site is entirely in Spanish. It does offer a translation widget powered by Google which—while imperfect—makes it easier for non-speakers to navigate the site.

The well-organized portal serves as a platform to help the public find their desired information. To improve users' browsing experiences, the portal also allows them to create government accounts and to customize the portal as they see fit.

The portal's structure is clear and the services for citizens and customers can be found by searching or browsing a "Virtual Office." The six most common online services are prominently featured, and the site claims that over 1000 procedures are available via the website (though many of these functions only allow you to download or print forms and information). The portal also connects users to social media such as Facebook, Twitter, YouTube and blogging sites, and there is a feature to receive specific notifications via email.

The portal provides a great deal of information, with a calendar, interactive map and online hotline number with 24-hour service. XHTML 1.0 and CSS interlink all ministries and government agencies and organizations. The National Portal of Argentina uses Web 2.0 technology and offers a user-friendly design with access to information and many online services.

4.5 Government CIO [GCIO]

There are no specific laws or mandates for CIO positions. However, after referring to the tasks and duties of the *Oficina Nacional de Tecnologías de Información* (ONTI), it can be inferred that ONTI has many of the responsibilities of a government CIO.

All ministries are involved in e-Governmente-Government projects according to Decree 378, which lays out the country's e-Government strategy. Therefore, it can be considered that all ministries have a CIO position even though the title is not precisely CIO (for instance, Head of IT Division; Head of e-Government Projects).

There are no CIO training courses found in Argentina in universities or training centers.

4.6 E-Government Promotion [EPRO]

The National Office for Information Technologies (ONTI) is the decision-making body in this area, and functions under the Sub secretariat of Public Management of the Chief of the Cabinet of Ministers. Specific projects include digital signature infrastructure, information security, and technological standards for public administration.

The ONTI has responsible for not only the technical prerequisite of e-Governmente-Government but also the promotion of e-Governmente-Government. The promotion is address to both citizen and government agencies.

4.7 E-Participation [EPAR]

The national portal http://www.argentina.gov.ar/ of Argentina is a one stop service site for citizens but the web 2.0 technologies is not integrated and almost information in portal is static. There is information on the structure of government, online services and links to other government bodies.

4.8 Open Government Data [OGD]

In December 2013, Argentinian senate has passed law on public access to funded research. It is the first step of Argentina to release freedom of information act which is still under discussion in parliament.

Regardless the lack of legal framework on open government initiative, Argentinian government has built open government data portal. The portal contains dataset from demographics and economics. Public can download the data in non-proprietary format such as excel file, csv, and pdf. The portal is provided by Buenos Aires City.

4.9 The use of Emerging ICT [EMG]

Open government data and integrating government information system is the trends that is found in Argentina. However, the leadership and commitment of all stakeholders are relatively low. The sustainability of some projects such as Cristal and e-procurement is under critical situation.

5 Some Highlights

Bringing ICT into the classroom has become a key concern in educational policy in Argentina, leading the Ministry of Education to launch the National Campaign for Digital Literacy and various teaching and methodology proposals for teachers. Nevertheless, the ministry's policies leave essential variables uncertain, particularly as these relate to economically and culturally excluded sectors.

Although there is concern for the distribution of infrastructure in relation to the socioeconomic conditions of the sectors which benefit, this intention continues to show evidence of discrimination in favor of those closest to large urban centers. The same malaise afflicts the concern for teachers, as it does not address the issue in its full socioeconomic and organizational complexity, nor take into account work regimes and hours, or the general working conditions of education workers.

Australia

1 General Information

Area: 7,741,220 km² **Population: 22,751,014** **Government Type: federal parliamentary democracy** **GDP: $ $65,400**
Historical Ranking (2005 – 2016)

2 Positioning in a global organization

OECD Countries	APEC Economies
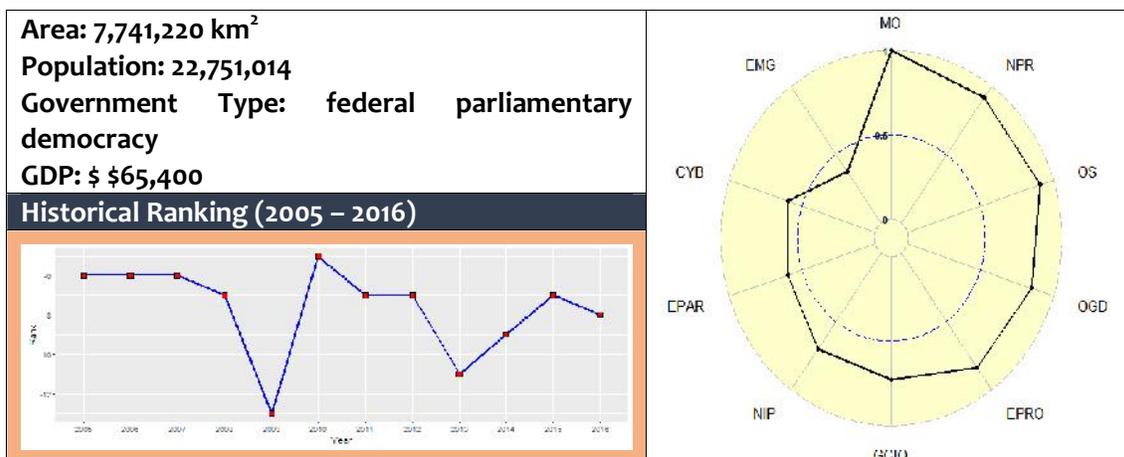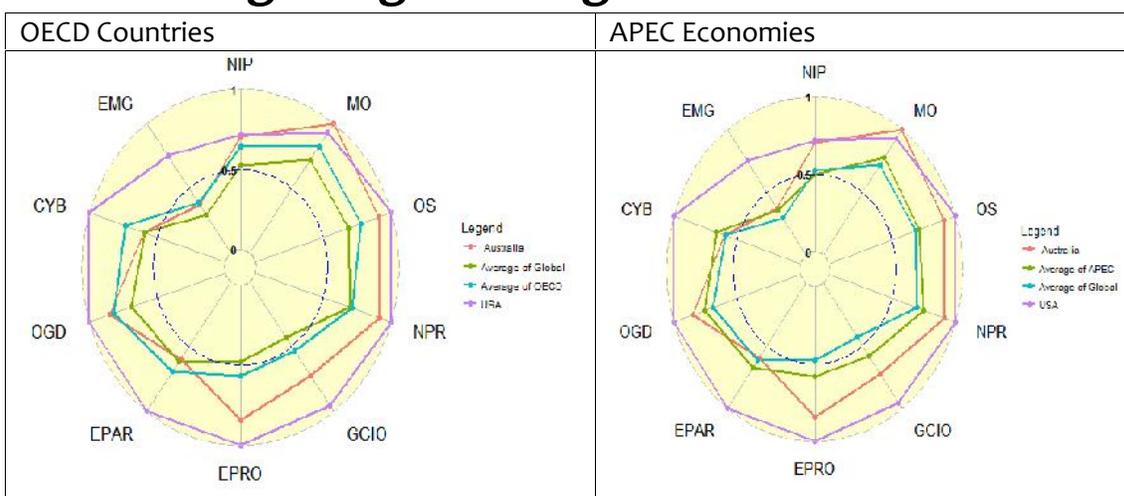
This year, Australia surpassed the world's and OECD's average score in most indicators, except cyber security and e-participation. The country even got a better ranking on management optimization when compared with the USA – which ranks the first position in e-Governmente-Government ranking this year. A similar phenomenon was witnessed when comparing Australia with APEC economies.

3 E-Government Development

The National Digital Economy Strategy was published on 31 May 2011 emphasized on the mission to position Australia as a leading digital economy by 2020. Drawing upon this vision, a collection of policies, strategies and guidelines were published by Ministry of Finance and Deregulation and

Australian Government Information Management Office (AGIMO), pursuing to make Australia government becoming an effective government; seeking to reduce costs, increase customer satisfaction and promote innovation.
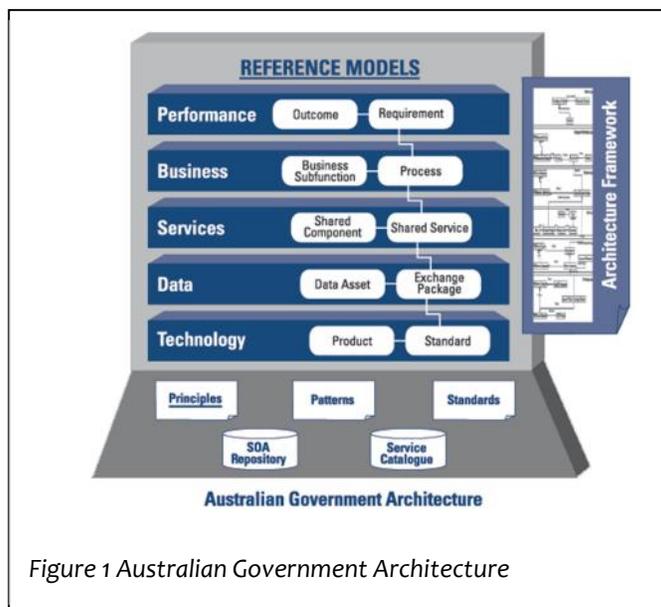
Australians e-Governmente-Government adoption efforts have been clarified under the 2012-2015 e-Governmente-Government strategy. It shows that Australians continue to embrace the Internet as a way of interacting with government.

4 Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 84.6% Australia's population were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). Among them, wired broadband subscribers accounted for around 25.8% while more than 100% of total population have a wireless broadband connection.

4.2 Management Optimization [MO]

Figure 1 Australian Government Architecture

Australian government has issued several policies and strategies related to e-Government development at national scope, addressing various aspects of digital government such as digital economy (National Digital Economy Strategy), government online services (APS ICT Strategy 2012-2015), infrastructure (Australian Government Data Centre Strategy 2010-2025), and cloud computing (Australian Government Cloud Computing Policy). Australia Government also mandated the collaboration between government entities via the Public Governance, Performance and Accountability Act 2013 (PGPA Act). Under this act, a National Collaboration Framework was created in order to facilitate the collaboration among Commonwealth entities, state, territory and local jurisdictions. In addition, the Australian Government Information Interoperability Framework and the GovShare initiative were put in place to ensure the seamless collaboration and information sharing among government agencies.

4.3 Online Service [OS]

The score for Online Service comprises of five sub-dimensions: e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of

those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience.

In terms of complexity level, all Online Services in Australia have reached the transactional level in which users can conduct all of their businesses via electronic portal. For e-procurement, AusTender (www.tenders.gov.au) is a centralized gateway for publishing information on Australian Government business opportunities, annual procurement plans, and contracts awarded. With the replacement of australia.gov.au accounts by MyGov[1], Australian Government aims to link all government services into a single place. By creating a MyGov account, citizens are featured from various utilities like MyGov Inbox, MyGov Profile and a growing range of services including Medicare, Australia Taxation Office, Personal Controlled eHealth Record, Child Support, and so on.

To measure the level of convenience, the third party application Google PageSpeed™ Insight[2] has showed that all services have a good access speed.

Table 1 List of Online Services

Online Service	URL
e-Procurement	https://www.tenders.gov.au/
e-Tax	https://www.ato.gov.au/
e-Customs	http://www.border.gov.au/
e-Health	https://myhealthrecord.gov.au
One-Stop Service	https://my.gov.au

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. www.australia.gov.au is the national portal of Australia. It presents a wide range of information resources and online services from various government agencies which can be accessible from a single point.

In technical aspect, the result of Google PageSpeed™ Insight showed that the website operates well both from PC and from Mobile Device. The portal also connects to various Social Networks such as Facebook, Twitter, YouTube, and Flickr, plus there is a feature allowing users to receive update via mail notification. In terms of accessibility, Australia.gov.au is currently compliant to Level A of the Web content accessibility guidelines version 2.0 - external site (WCAG 2.0) standard.

4.5 Government CIO [GCIO]

After just 12 months being the leader of heading up IT governance and whole-of-government IT policy for Federal government, Australian government chief information officer Glenn Archer left his position at AGIMO. In this sense, the federal government will no longer have a chief information

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[1] https://my.gov.au
[2] https://developers.google.com/speed/pagespeed/insights.

officer after deciding not to replace the position of former CIO Glenn Archer[3]. This restructure effort is supposed to reduce the "duplication and unclear objectives for whole-of-government policies".

Although the government CIO role is no longer exist at Federal government level, the presences of IT champions are still found at other departments and State level governments. For example, the City of Melbourne has appointed PwC partner Michelle Fitzgerald as Victoria's first ever chief digital officer.

The Corporations Act 2001 imposes a number of legal responsibilities upon company directors, secretaries and "officers" which is broadly defined to cover COOs, CTOs, CIOs and Information Systems Managers. These requirements suggest, as a director or officer, an obligation to uphold due care and diligence.

4.6 E-Government Promotion [EPRO]

The digital interactions between Australian government with various stakeholders such as citizens, businesses, employees and other governments has been increased through years. This is the result from the government's continuous efforts to develop and promote digital government. As stated in the Digital First, the Australian Government aims to digitalized end-to-end government transactions by 2017.

4.7 E-Government Participation [EPAR]

With well-established e-Governmente-Government channels, the rate of interacting with government has been increased: two-thirds of Australian using e-Governmente-Government services for their most recent contact (AGIMO, 2011). Australia national portal offers a good platform to encourage the citizens to take part in various activities and discussions with government. Consultation processes supported by a diversity of technologies allow people and communities to be actively involved in designing and developing policy and services.

4.8 Open Government Data [OGD]

After joining the Open Government Partnership on 2013, on 11th April 2016, the Australian Government held the co-creation workshop to develop its first National Action Plan (NAP) for Open Government. Stakeholders from civil society and Government were invited to consult and suggest on the draft of the plan. Around 210 actions were grouped into 18 proposals which were then prioritized by participants and turned into 14 commitment templates [4].

As of May 2016 the Australian Government's data site data.gov.au includes 8000 datasets from the Australian Government and state and territory governments. This initiative was created under Government's Declaration of Open Government and as a response to the Government 2.0 Taskforce Report.

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[3] http://www.itnews.com.au/news/australian-government-abandons-cio-role-384743
[4] http://ogpau.govspace.gov.au/

4.9 Cyber Security [CYB]

Figure 2: Australian Government Cyber Security Architecture[5]

Cyber security is one of Australia's national security priorities. A new long-awaited national cyber security policy was released in mid-2016, establishing five themes of action for Australian Government until 2020: A national cyber partnership; strong cyber defense; global responsibility and influence; growth and innovation; and a cyber smart nation.

In terms of cyber security government entities, Australian Government aims to strengthen its leading role on cyber security policy by establishing a new position in the Cabinet: The Prime Minister's Special Adviser on Cyber Security. The national Computer Emergency Response Team (CERT) Australia works in collaborating with over 500 businesses and advises on cyber security threats to the owners and operators of Australia's critical infrastructure. The Australian Cyber Security Centre, established in 2014, gathers cyber security capabilities across the Australian Government to enable collaborating and sharing threat information.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). The Government launched its Cloud Computing Policy in 2014, mandating Government agencies to adopt a "cloud first" approach whenever possible. By September 2014, a Request for Tender (RFT) to establish the Whole of Government Cloud Services Panel (including Software, Platform and Infrastructure as a Service, and Specialist Cloud Services) has been published on AusTender. The Digital Transformation Office has created cloud.gov.au as a new platform to facilitate digital services delivery. The first service was expected to be presented on the platform in February 2016.

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[5] https://cybersecuritystrategy.dpmc.gov.au/assets/pdfs/dpmc-cyber-strategy.pdf

Regarding Big Data, The Australian Public Service Big Data Strategy was developed by Ministry of Finance and endorsed by the Secretaries' ICT Governance Board to provide a whole-of-government (WofG) approach to big data. In parallel, The WofG Data Analytics Centre of Excellence (CoE) was established by the Australian Taxation Office as a place to build analytics capability across government [6].

5   Some Highlights

Management Optimization continues becoming the strongest point for Australia in the ranking thanks to the presence of an adequate number of policies regarding e-Government. With all evidences have been found and validated, Australian government has obtained the maximum score in Management Optimization indicator.

Online Services score has significantly increased in comparing with last year's score. This is the result of appointing the Government Digital Service as a specialized agency accounting for digital services development. By adapting the UK's digital service standard into Australia's context and release the service design guidelines, the government is seeking to deliver "simpler, clearer, faster public services" to citizens and businesses.

Data shows that there has been only limited progress in adopting cloud services by government agencies to date although there were cloud policy and guidance already in place[7]. Until 2014, cloud procurements in AusTender have only in total $4.7m since July 2010 (while the total expenditure of Australian Government on ICT is approximately $6bn annually)[8]. It is recommended that Australian Government should embrace the power of emerging technologies such as Cloud Computing, Big Data or Internet of Things into government's operation activities to get a higher position in the ranking.

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[6] http://www.finance.gov.au/archive/big-data/
[7] http://www.finance.gov.au/files/2012/09/a-guide-to-implementing-cloud-services.pdf
[8] http://www.finance.gov.au/sites/default/files/australian-government-cloud-computing-policy-3.pdf
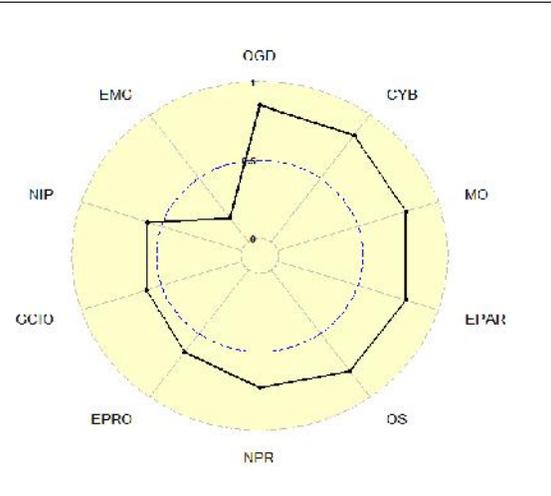
Austria

1   General Information

Area: 83,871 km²
Population: 8,665,550
Government Type: Federal Republic
GDP: $47,500
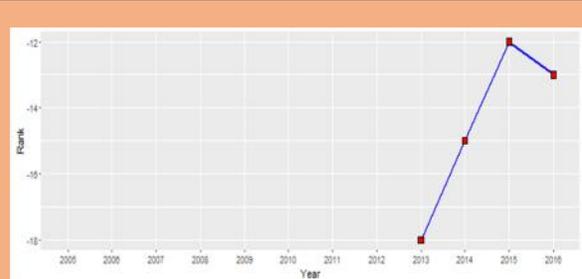
Historical Ranking (2005 – 2016)

2   Positioning in a global organization and a region
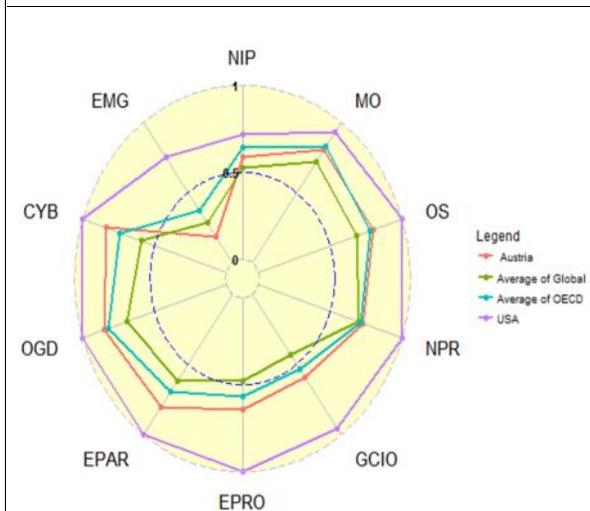
OECD Countries	European Countries
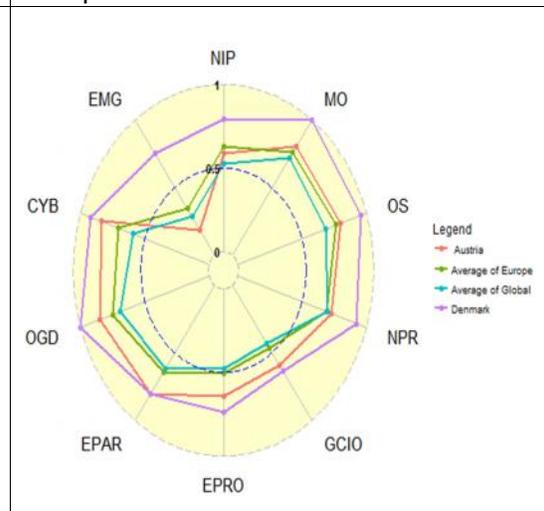
Among OECD Countries, all indicators except the Use of Emerging Technologies for Government (EMG) indicator are above or same with the average score of OECD members. Amongst European countries, Austria is placed below Denmark. However, the e-Participation (EPAR) indicator of Austria is same level with that of Denmark, the best country in the European region.

3 E-Government Development

The development and implementation of electronic public services is one of the priorities of the Austrian Federal Government. Austria has been at the forefront for many years in the e-Government arena. The diverse efforts and leading e-Government initiatives of the Austrian government have been recognized many times at the European level. The Platform Digital Austria, which was created in 2005, has become the center point for coordination and strategy of e-Government in Austria by the Federal Government. All e-Government projects in Austria now run under the Platform Digital Austria designation. It coordinates all the agendas of the "Kooperation BLSG" (which stands for Cooperation of Federal Government, Provinces, Municipalities and Communities), previously known as the E-Cooperation Board,

virtual e-Government structure of Austria

and the ICT Strategy Group, formerly known as the ICT Board. The advantages of having a single chairmanship in charge of projects are obvious. Projects are coordinated with one another so any projects which are too similar can be detected and duplication of effort can be avoided. The chairmanship of Platform Digital Austria is held by the Federal CIO.
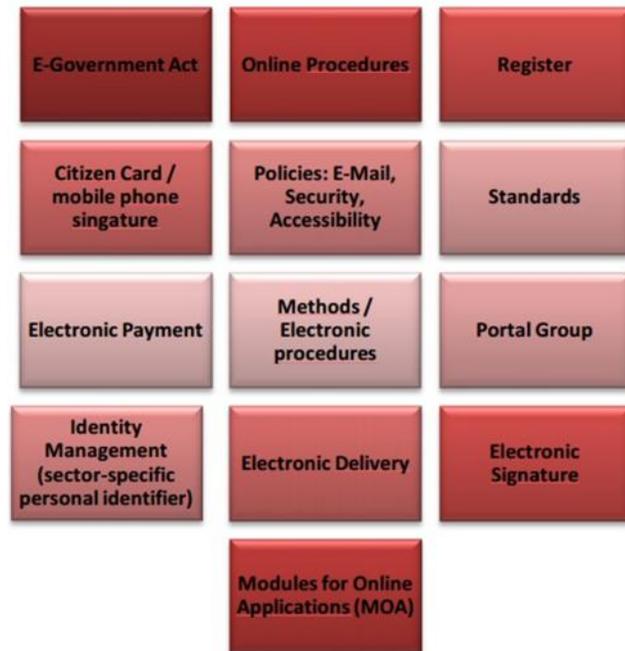
The Austrian e-Government platform is chaired by the Federal Chancellor and involves several ministers, the representatives of the provinces, municipalities, cities and the business sector. The main intention of the e-Government platform is to consolidate and improve the present different e-Government solutions and to develop new activities common to all authorities. Communication between all members should be ensured by the Executive Secretary of the e-Cooperation Board (IKT-Board).

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 80% of people in Austria were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 27.5% have fixed-broadband subscriptions, and wired broadband subscription has reach 67.2%.

4.2 Management Optimization [MO]

The Federal e-Government Strategy provides an efficient implementation of electronic government services, based on the basic premise that all businesses and citizens must be able to perform all the procedures of public administration quickly and easily electronically without having special technical

expertise. To achieve this goal, the Austrian e-Government strategies are based on the involvement and close cooperation between the federal state, cities and municipalities.

The Platform Digital Austria (PDÖ), developed an overall concept during a strategy session in 2015 for the coordination and strategy board of the federal government for e-Government in Austria. The platform members formulated the concept for successful cooperation and Visions 2020.

4.3 Online Service [OS]

The score for Online Service is based on five investigated online services: e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services were investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e-One-Stop Service has the lowest score, compare to other online services. The Electronic Health Record ELGA (e-Health) is an information system that facilitates access to health data. It is open to all people, which are supplied in the Austrian health care system as well as their doctors, hospitals, nursing homes and pharmacies available.

In addition, all Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services. And all of Online Service except the One Stop Service in Austria has reached a transactional in which user can start the transaction from applying to receiving the service through the portal in terms of complexity level.

To measure the level of convenience, the third party application result has showed that e-Procurement, e-Tax and e-Customs portals are above the average. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights.

Table 2 List of Online Services

Online Service	URL
e-Procurement	https://portal.bbg.gv.at/
e-Tax	https://finanzonline.bmf.gv.at/fon/
e-Customs	https://finanzonline.bmf.gv.at/fon/
e-Health	https://www.gesundheit.gv.at/Portal.Node/ghp/public
One-Stop Service	https://www.help.gv.at/Portal.Node/hlpd/public

4.4 National Portal [NPR]

The score for National Portal is based on three factors: Information (Content), Technical, and Functionality. National Portal of Austria "http://help.gv.at/", is an Internet platform linking to a large number of public authorities. It provides information on all interactions with Austrian authorities required in the most frequent life situations such as pregnancy, childbirth, marriage or housing, and permits the electronic processing of some of these procedures. The portal constitutes an interface between authorities and citizens, with special emphasis on transparency, user-friendliness and clarity of information. However, the portal does not provide the user with news and blogs. And, in technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is about average on both from PC and from Mobile Device.

4.5 Government CIO [GCIO]

The Federal CIO, appointed by the Federal Government in 2001, advises the Federal Government at strategic and technical levels, supports the formulation of its e-Government policies, chairs the Platform "Digital Austria" and promotes Austrian e-Government solutions in the European and international arena. The CIO regularly reports to the competent State Secretary on ongoing activities.

4.6 E-Government Promotion [EPRO]

The e-Government Act is the core of Austrian laws on e-Government. This law serves as the legal basis for e-Government services. It enables closer cooperation between all authorities that provide e-Government services and gives them the opportunity for networking together.

4.7 E-Participation [EPAR]

The technical basis for e-participation in Austria is well developed, yet accessibility of municipal web sites and the phrasing of information leaves space for improvement. E-participation in Austria is still in a nascent state and requires the convergence of technical, political, legal and socio-economic factors, which have not yet fully arrived at the municipal level.

4.8 Open Government Data [OGD]

Austria has recently launched the Open Data portal "http://data.gv.at/", and in the autumn of 2012 the competition "apps4austria" was launched to present prizes for the first time to web applications, mobile applications (apps), visualizations and concepts that develop open data records of public administration in a user-friendly manner.

4.9 Cyber Security [CYB]

The Austria Cyber Security Strategy (ACSS) is a comprehensive and proactive concept for protecting cyber space and the people in virtual space while guaranteeing human rights. Most importantly, however, it will build awareness and confidence in Austrian society. Austria's Cyber Space Security Strategy has been developed on the basis of the Security Strategy and is guided by the principles of the Austrian Programme for Critical Infrastructure Protection.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). The Austrian Government considers and fosters Big Data as important lever to increase efficiency within public administration, to improve existing and create new services for citizens and entrepreneurs. The electronic census is another best practice of big data in Austria.

5 Some Highlights

Among ten indicators in the current ranking, the Open Government is the top indicator in Austria. Other hand, Management Optimization, Cyber Security, Online Service and National portal are the same high level among other indicators. This result shows that the Platform Digital Austria, which was created in 2005, has become the center point for coordination and strategy of e-Government in

Austria by the Federal Government. All e-Government projects in Austria now run under the Platform Digital Austria designation.
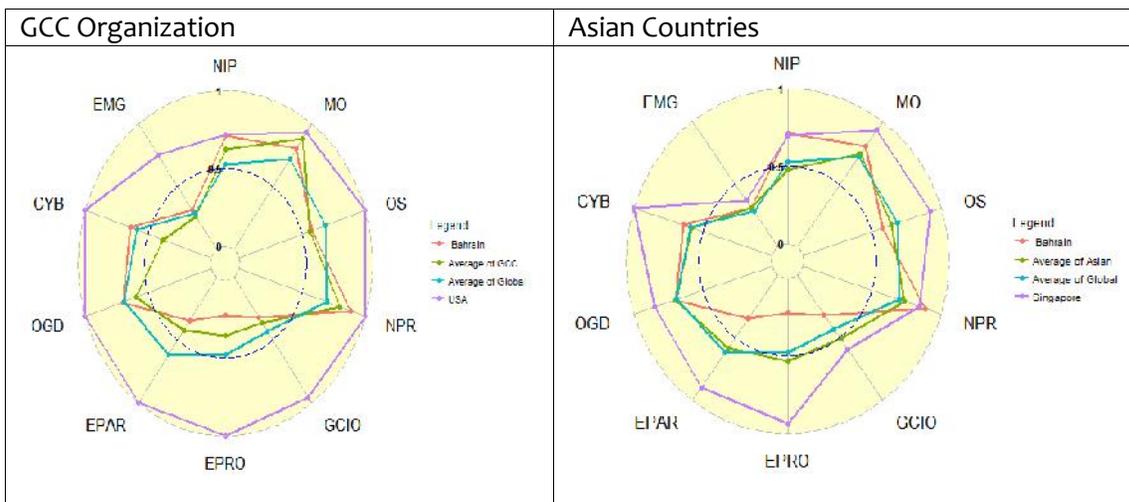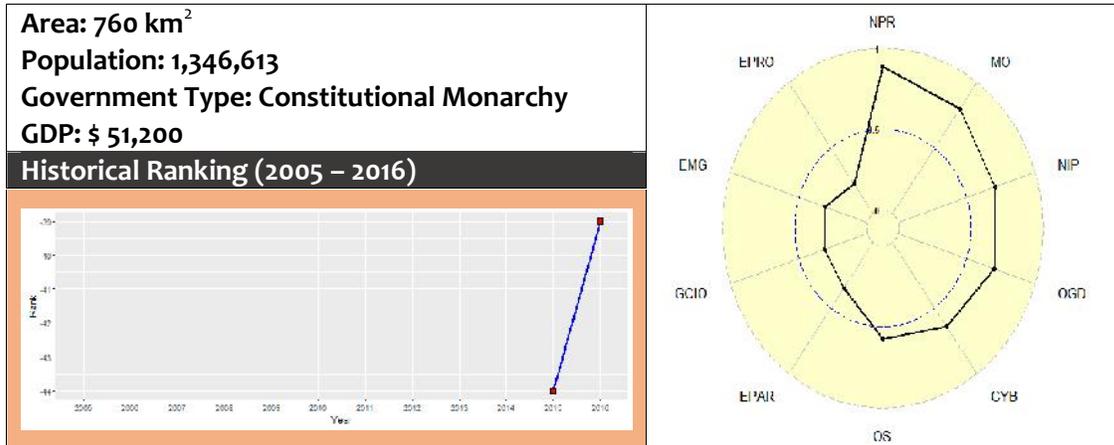
Data protection is a right that is highly prized in Austria. Citizens place much value on the protection of their privacy. Sector-specific personal identifiers, or ssPINs, were developed specifically for the purpose of identification to conform to data protection standards. They ensure that public administration employees only have access to personal data from various public administration areas for which they have authorized access rights.

Moreover, in terms of e-Governmente-Government platform, the Business Service Portal "http://USP.gv.at/", an initiative of the Federal Government, has been offering useful information on a wide range of topics that are of interest to businesses. The portal aims to serve as a single entry point for businesses to the administration. By offering information (administrative activities, starting a business, tax and legal requirements) and transaction services, it intends to help businesses to fulfill their information obligations and to reduce their administrative burden.

The weak point in Austria is about the use of emerging ICT. As for the emerging technology, it is the new indicator for this year survey. Austria is commencing the use of Big Data as important lever to increase efficiency within public administration.

Bahrain

1 General Information

Area: 760 km²
Population: 1,346,613
Government Type: Constitutional Monarchy
GDP: $ 51,200

Historical Ranking (2005 – 2016)

GCC Organization	Asian Countries

2 Positioning in a global organization and a region

Among GCC Countries, Bahrain has a better score than the average score of GCC Countries in basic infrastructure, National Portal, Open Government Data, and Cyber Security. As shown on the above picture, Bahrain is very low on the e-Government Promotion indicator. Furthermore, the lack of e-Government Promotion in Bahrain can be considered one of the reasons for the similar situation in Online Service or even on Management Optimization which is below the average of GCC Countries.

Achievement in some indicators also reflect the position in Asian region in which Bahrain is considerably approaching Singapore, the best in the Asian region, at the basic infrastructure and National Portal.

3   E-Government Development

E-Government development in Bahrain was started in 2009 when the Bahrain delegation attended the first GCC e-Government Conference in Oman. In 2011, Kingdom of Bahrain launched the new e-Government Strategy 2012-2017. The policy contains seven elements that represent the objective of the strategy. Picture 1 illustrates these seven elements of e-Government Strategy of Bahrain.

Picture 1. 7 Elements of e-Government Vision
Source: e-Government Authority of Bahrain

As part of the strategy, 32 government agencies actively participated in an e-Readiness study for the development of e-Government Bahrain. Moreover, e-Government Authority has identified thirteen initiatives with high priority. These initiatives are the flagship that will enable further development.

These 13 agency programs are Case Management System, Customs and Ports, Education, e-Health, e-Office, e-Procurement, G2B Portal, G2E Portal, National Employee Programme, National Data Set, Real Estate Services, Social Information System, and Tourism Services.

4   By Indicators

4.1   Network Infrastructure Preparedness [NIP]

Approximately 91% of people in Bahrain were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 21.4% have fixed-broadband subscriptions, and wired broadband subscription has reached 126%.

4.2   Management Optimization [MO]

As an effort to bring the government to the next level, Kingdom of Bahrain has launched the New e-Government Strategy 2017. The strategy is equipped with several initiative strategies and measurable Key Performance Indicators (KPI). Furthermore, Action Plans and Agency Involvement are stated clearly in the New e-Government Strategy 2017.

In developing the e-Government, Bahrain adopted the enterprise architecture practices. Kingdom of Bahrain has developed its own EA named "National Enterprise Architecture Framework" (NEAF). To streamline the data exchange among government agencies, Kingdom of Bahrain has established National Data Center Consolidation (NDCC). Contribution from operationalization of both NEAF and NDCC is very significant in this area. Despite a positive nuance in this indicator, there is a lack of integrated financial information system in Bahrain.

4.3 Online Service [OS]

The score for Online Service is based on five investigating online services, i.e., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e-One-Stop Service and e-Health have the lowest score, compare to other three online services.

In terms of complexity level, except the e-Tax, all of Online Service in Bahrain have reached a transactional in which user can start the transaction from applying to receiving the service through the portal. In addition to that, all Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services. Since the e-Tax system cannot be accessed during this study, it is considered that e-Tax is still immature in the Kingdom of Bahrain, hence, such security measures are not found in it.

For measuring the level of convenience, the third party application result has shown that three portals are above the average considerably in terms of speed. Except e-Procurement, all online service in Bahrain got scored below average, thus, significantly slow to access. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 3 List of Online Services

Online Service	URL
e-Procurement	https://etendering.tenderboard.gov.bh/
e-Tax	N/A
e-Customs	http://www.bahraincustoms.gov.bh/
e-Health	http://www.moh.gov.bh/EN/E-Services/E-Services.aspx
One-Stop Service	https://www.bahrain.bh

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of Bahrain (http://www.bahrain.bh) contains proper information for local citizens and foreigners. Information about Bahrain is available on the portal. The user can find information about culture and heritage, demographic, and government. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is below average both from PC and from Mobile Device.

4.5 Government CIO [GCIO]

Kingdom of Bahrain has established e-Government Authority as a GCIO Office. Head of this authority takes the responsibility similar to the GCIO. GCIO is important to deliver an active sponsorship through strong leadership. In contrary to the presence of GCIO at a national level, the presence of any formal document that clearly stated the mandate, the responsibility, and the position of GCIO in local government is hardly found.

4.6 E-Government Promotion [EPRO]

There is no significant evidence to indicate that Bahrain government conduct any initiatives to promote the use of e-Government Service. This situation is similar to the one in any developed countries where the IT Culture has been embraced in the society. However, Bahrain is not considered as a developed country. Without any efforts to increase the citizen awareness on e-Government, the massive investment in developing e-Government in Bahrain could become meaningless where residents do not use the e-Services only because they do not know how to use it, and they do not know that the e-Service does exist.

4.7 E-Participation [EPAR]

A low score in this indicator is a kind of stereotype in a monarchy system. In Bahrain, it is rather difficult to find government officer's websites. Parliament member does not have an official website to gather opinions from citizens. Bahrain only uses two methods for gaining citizen's expressions; Pooling through https://www.bahrain.bh and Tawasul Program through http://services.bahrain.bh. The presence of these two programs helps Bahrain to get the score for this indicator.

4.8 Open Government Data [OGD]

Despite the absence of Freedom of Information Act, Kingdom of Bahrain considers that public has right to obtain information from the government side. As part of e-Government Strategy under National Data Set Program, Kingdom of Bahrain has appointed Central Informatics Office (CIO) to establish and manage Bahrain Open Data Portal at https://www.data.gov.bh. Considering the risk of irrelevant and not-up-to-date, CIO included a regular submission of information for the Open Data Portal as a KPI in each government agency.

4.9 Cyber Security [CYB]

Bahrain has ratified several laws related to cybersecurity. Some of them are as follow:

- Cyber Crime Law No. 60/2014
- Data Protection Act 1998
- Law No. 16 of 2014 concerning Protection of State Information and Documents
- Regulation 9 of 2009 concerning Lawful Access
- Cyber Crime Law No. 60/2014
- Law NO. 28/2002 about Electronic Transaction

In addition to these laws, Bahrain has established The General Directorate of Information Security, Central Informatics Organization. It is the agency whose responsibility is to implement a national cybersecurity strategy, policy, and roadmap. In addition to that, Bahrain has created Bahrain CERT for monitoring and solving Internet Security problems.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Bahrain has attempted to implement Cloud Computing for Public Sector. Some provisional programs have been launched such as National Gateway Interface, National Authentication Framework, Project Management Toolkit for

governmental entities, and National Payment Aggregator. Other emerging technologies for government agencies are still nullity in Bahrain.

5 Some Highlights

Among ten indicators in the current ranking, the National Portal and the Management Optimization are the best among other indicators in e-Government Bahrain. This achievement signifies the importance of the New e-Government Strategy 2017 for improving the quality of government business process. Bahrain implements several best practices for developing e-Government system. Enterprise Architecture is adopted to develop Bahrain National Enterprise Architecture Framework. COBIT 5 is applied for designing IT Governance Framework.

The weak point in Bahrain is about e-Government Promotion and the use of emerging ICT. For developing countries, e-Government Promotion is crucial to make sure that what was built will deliver benefit to the citizen. In the other way around, e-Government Promotion is important to encourage citizen for using the e-Government service. In the end, through e-Government Promotion, there is a balance between what is offered by government and what is needed by citizens.
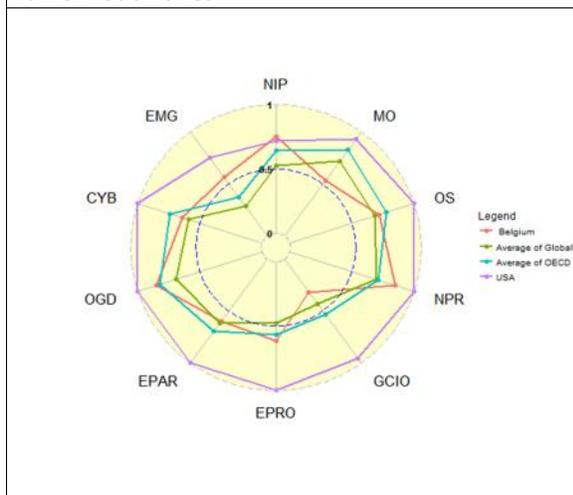
Belgium

1 General Information

Area: 30,528 km²
Population: 11,323,973
Government Type: Federal constitutional monarchy
GDP: $44,100 (2015)
Historical Ranking (2006-20016)
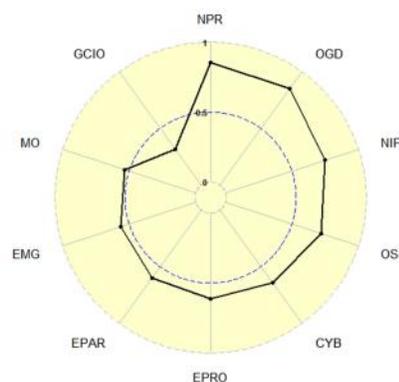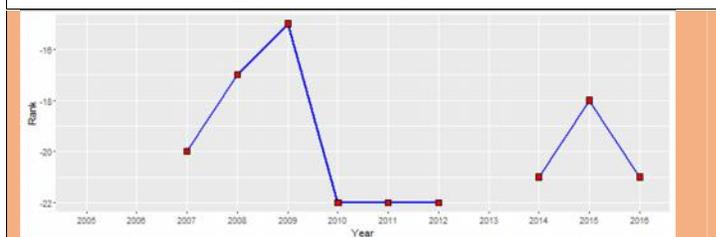
2 Positioning in a global organization and a region

OECD Countries	Europe Countries
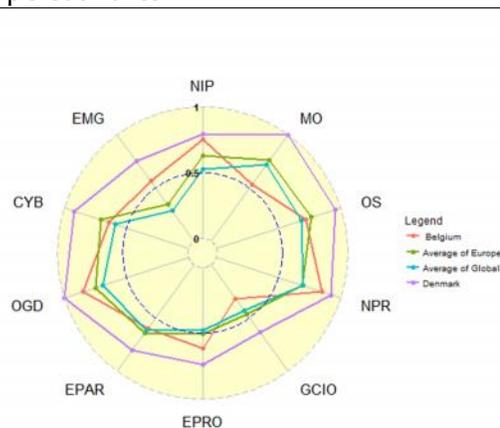
3 E-Government Development

E-Government in Belgium developed early. The first parliamentary review of e-Government in Belgium, 'e-Government at the Federal, provincial, and local levels' was published in January 2001. The main objectives of Belgian e-Government in this period was to improve the delivery of public services for citizens and businesses by rendering it faster, more convenient, less constraining and more open.

During many years of development there have been various e-Government strategies for central and local government. Today, Belgium e-Government focuses on the following key areas: (i) user centricity, (ii) transparent government, (iii) cross border mobility, and (iv) key enablers.

The newest action plan Digital Belgium was introduced by Deputy Prime Minister and Minister of Digital Agenda and Telecom in April 2015. The key objective is to achieve growth and create jobs through digital innovation in the coming years. The action focuses on five priorities, (i) digital economy, (ii) digital infrastructure, (iii) digital skills and jobs, (iv) digital trust and security, and (v) digital government.

In center government, Belgium government has Open data strategy toward 2020. The objective is to strengthen the digital ecosystem and the evolution towards leaner, more efficient and modern administration. The most important part of the plan is to create the default for all government data, except for information with privacy or security implications.

4   By Indicators

4.1   Network Infrastructure Preparedness [NIP]

Belgium has well-developed ICT infrastructure, for the Internet connection its ranking among the top countries in the world in termss of total number of Internet users, fixed broadband users, mobile broadband users, and Internet hosts. The Belgian ICT market is mature and sophisticated, yet open, innovative and highly competitive. According to the ITU, the Internet Usage Statistics in Belgium as of December 2013 is about 87.4% (9,876,100 Internet users) penetration. The number of broadband connection in household is about 88% while the number connection in enterprises is 97%.

4.2   Management Optimization [MO]

Belgium has divided by Federal Government and three regions. Therefore, they have center government and local government with many dependent strategies. In 2015 the head of e-Government issued a new action program for Belgium, called Digital Belgium. This program focuses on three ambitions toward 2020. Belgium aims to reaffirm its place on the digital map as based upon following five priorities: (i) Digital Economy; (ii) Digital infrastructure; (iii) Digital skills and jobs; (iv) Digital trust and digital security; and (v) Digital government.

The newest program in Federal government is Open data strategy for the period 2015 to 2020. The aim of this program is to strengthen the digital ecosystem and the evolution towards leaner, more efficient and modern administration.

4.3   Online Service [OS]

Like other developed countries in Europe, e-Government services in Belgium are divided in to e-Government for citizens and e-Government for businesses. The e-Services for citizens are focused on health care, social security service and education. E-Services in Belgium are provided through one-stop services (portal). Belgium has more developed systems considering that they now have 20 basic public services, but in this ranking Waseda focuses on 5 groups of services, which are e-tax, e-customs, e-health, e-procurement, and one-top services.

E-procurement (https://enot.publicprocurement.be) was introduced in 2008, the Belgian public procurement portal provides links to portals and platforms which currently cover three of the main aspects of the procurement process, namely, e-Notification, e-Tendering, e-Awarding and e-Catalogue. It is available in English, French, Dutch and German.

4.4 National Portal [NPR]

The federal portal (www.belgium.be) was introduced in 2002. A new version of the portal was released in 2008. This portal is one-stop services for all citizens and businesses. The information in federal portal is introduced by Dutch, English, French and German. The design of portal is user-friendly and easy to use. A major section of the new portal links to all the available public services online. Users looking for a specific service can refine their search by theme, target group and/or level of Government involved. Several of these e-Services are secured and require authentication.

4.5 Government CIO [GCIO]

There is no change in this indicator compares the ranking last year. There is no specific law or mandate in Belgium creating the CIO position in the government. In Belgium, the Waseda ranking found the CIONET. It is a network of CIOs CTOs and IT managers with offices in many European countries.

The CIO Forum is a part of a passionate community but it only related to Belgian business not government section. The CIO forum is created to organize networking events and provide an interactive social platform to bring IT professionals together in an open and trustworthy community in Belgium.

4.6 E-Government Promotion [EPRO]

During one year of evaluation, there is not much information relates to e-Governmente-Government activities even Belgium is divided into Federal government and three regions. In Flanders region, they created Flanders Information Agency in 2015. It promotes the use the use of open data standards by public administrations in the Flemish region by aligning the existing and future business processes involving open data with European linked open data standards, and with advances foreseen in the use of these standards.

4.7 E-Participation [EPAR]

The Federal Government of ICT set a strong focus and an increased efforts on e-participation and e-Inclusion plans. Recently, the utilization of Social Networking Services (SNS) promoted the participation of citizens in providing feedback to the government and reception of government information easily though the Social Media such as Facebook and Twitter. ICT policy and e-Inclusion policy in Belgium is to a large extent demand- and sector-driven. This is partially explained by the institutional arrangements that govern the country. In social affairs, many institutional channels exist through which social organizations and pressure groups can express their concerns.

4.8 Open Government Data [OGD]

The federal government departments and institutions made open data available on "Data.gov.be", in October in 2008. This portal enables all government bodies to make available their data to citizens and businesses by using the information provided. For the first time, Data.gov.be went from only 60 datasets to more than 4900 datasets. The datasets cover many fields, including Agriculture and Fisheries, Culture and Sports, Economy and Finance, Education, Energy, Environment, Health, International, Justice, Population, Public sector, Regional, Science and Technology, and Transport.

Most of datasets is free, each federal department or federal government institution itself determines the terms and conditions governing access to and use of the data. The datasets are also divided to three languages, English, Dutch, and French.

4.9 Cyber Security [CYB]

In 2012, the Prime Minister presented a national cyber-strategy. The strategy identifies 3 strategic objectives which are to be realized through different initiatives in eight identified action domains. These 3 strategic objectives are 1) a safe and reliable cyberspace, 2) an optimal security and protection for critical infrastructures and governmental information systems, and 3) the development of national cyber security capabilities.

The Belgian Cyber Security Guide was presented in the International Cyber Security Strategy Congress September 2013 following 10 principles: looked beyond the technology, do not consider compliance as sufficient, translate your vision and approach in a security policy framework, ensure executive sponsorship, define a dedicated security role in your company and embed personal responsibility, remain secure even when you outsource, ensure security is an enabler for new technologies and innovation, keep challenging yourself, maintain focus, be prepared to handle incidents.

4.10 The use of Emerging ICT [EMG]

This indicator is the newest indicator in Waseda e-Government ranking. This indicator refers to the usage of cloud computing technology in sharing data among government agencies, departments as well as between center government and local government. The use of emerging ICT is also the application of IoT, and Big data in the activities from government.

In the evaluation, we found that there is regulation on the use of Cloud Computing, IoT, and Big data for government agencies but there is no evidence that government agency has used Big Data.

5 Some Highlights

Compared to last year, Belgium stepped down from 18th to 21st in 2016. In most of the evaluation sub-indicators which Waseda evaluated, Belgium received lower scores compared last year. Furthermore, in 2016 ranking, Waseda e-Government ranking added a new sub-indicator in total ranking. It is one reason makes changing score in overall ranking compared last year.

There are two sub-indicators which received lower score compared last year, Government CIO and management optimization. During the research, there is no specific law or mandate in Belgium creating the CIO position in the government.

In order to improve public services delivery for citizens and businesses, the Belgian government has adopted four main strategic streams for its e-Government program, as follows: 1) Re-engineering and integration of service delivery around user's needs and life events. 2) Cooperation among all levels of government so as to provide integrated services across organizational boundaries and administrative layers. 3) Simplification of administrative procedures for citizens and businesses. This requires an increased exchange and sharing of data and information between government departments and agencies. 4) Back-office integration and protection of personal data.

Brazil

1 General Information

Area: 8,515,770 sq km
Population: 204,259,812
Government Type: Federal presidential republic
GDP: $15,800
Historical Ranking (2006-20016)
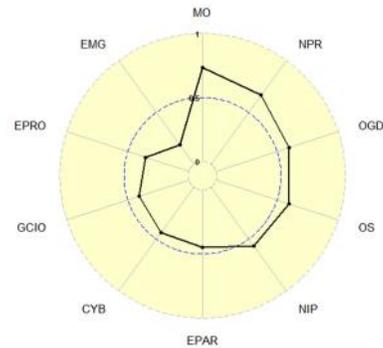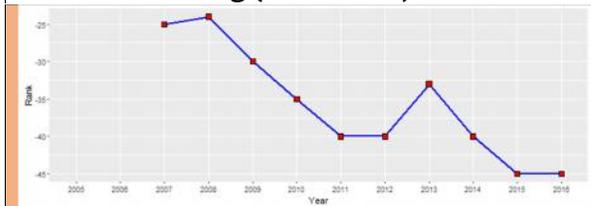
2 Positioning in a global organization and a region

America Countries
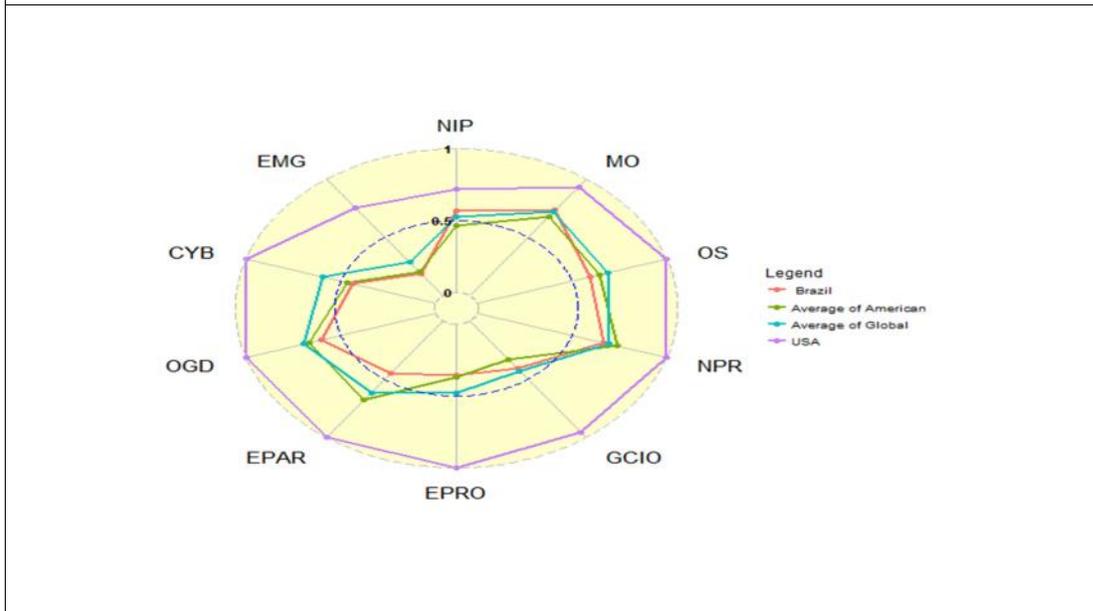
3 E-Government Development

E-Government in Brazil was developed rapidly in the 1990s at three levels, federal, state and municipal government. The first e-Governmente-Government project in Brazil was e-Brazil Project, it launched at the 33rd National Seminar on Public Informatics. It seeks to promote what we call e-development, a broader vision than e-Governmente-Government, including the private sector, NGOs, and academia as well as governments.

Brazil is now still struggling to improve the efficiency of the public policy and service for societies via e-Government, and tries to improve efficiency and transparency of the management process through giving opportunity for its citizens to access government information and to participate in some political administrative decisions.

The Open Government Partnership (OGP) – of which Brazil is co-leader – is recognized as an effort of several partner countries to make governments more transparent, effective and reliable through the establishment of Open Government goals included in the agendas of each country. The Government Open Data aims at publishing government data in reusable formats and increasing transparency and greater political participation of citizens, as well as generating several applications collaboratively.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

The growth of ICT in Brazil has been impressive, the ICT sector was one of the most affected by the economic opening up process observed in Brazil in the 1990s. In 2015 Internet penetration was 63.7% and expected to grow 66.4% this year. As for broadband market, Brazil has one of the largest in Latin America, the number of population

4.2 Management Optimization [MO]

The history of Brazil's e-Government development officially started in 2000, thus Brazil is relatively in the early stage in applying knowledge management technique in its e-Government. Brazil is now struggling to improve the efficiency of the public policy and service for societies via e-Government, and tries to improve efficiency and transparency of the management process through giving opportunity for its citizens to access government information and to participate in some political administrative decisions.

For 2013-2016, seven strategic objectives were defined, established by the board of directors and superintendents. However, in the course of this plan, Serpro developed in 2014 an eight-year strategic plan instead of the usual four-year one. For the 2014-2022 plan, Serpro adopted a new model and only one strategic objective: the institution of the center for solution and information for the Brazilian government, with a broader scope, divided into three dimensions (Government and Society, Economy, and Technology) and six strategic guidelines.

4.3 Online Service [OS]

In this ranking, Waseda considers to 5 services in each country e-procurement, e-tax, e-customs, one-stop service, and e-health. All e-Services are integrated into one portal (http://www.governoeletronico.gov.br). This portal provides information, links to each service. This portal also provides useful links to other governmental sites. It has to be noted that this web page has kept its structure for the past four years. It might be desirable to change its appearance and interface. E-tax, e-customs, e-procurement, and one-stop service got a high score on evaluation. But, there is not much information on e-health. As for e-health service, Brazil has static website only. No interaction or transaction sites are integrated.

4.4 National Portal [NPR]

http://www.brasil.gov.br is national portal. It includes basic information about Brazil, from news on the government activities, economic, legislation, to e-Governmente-Government services for all citizens and businesses. The national portal is available in Portuguese only. It also is one-stop service, but some e-Services such as passport and visa, e-tax have information only, not including transactional or interactive. The national portal is connected to SNS for raising the connection ability from citizens with government.

The www.governoeletronico.gov.br provides the information from the Government's side and the www.e.gov.br contains the available services and information provided by the government on different areas, such as agriculture, citizenship, science and technology, trade, communications, postal services, social affairs, human rights, economy and finance, and education sports.

4.5 Government CIO [GCIO]

The Government Chief Information Officer (GCIO) position is not included in the official structure of the country. However, as a similar position with CIO, Ministry of Planning, Budget and Management perform the tasks of CIO in Brazil. The Ministry of Planning, Budget and Management mainly perform the following tasks; assistant of national strategic planning and management, evaluating federal government policies, elaborating government's new economic plan, etc. The research activity of Ministry of Planning, Budget and Management is mainly practiced through Brazilian Institute of Geography and Statistics and Institute of Applied Economic Research.

4.6 E-Government Promotion [EPRO]

There are not activities on e-Government in Brazil such as organize e-Government conferences, e-Government training for citizens as well as advertisements for e-public services. In Waseda ranking: legal aspect, enabling aspects, supporting aspects, and assessment aspects are used to evaluate the promotion from government. But less information found on these issues. In Brazil, there are not private entities involved at national level and local government. No information found on PPP or international and domestic collaboration involved. Especially, there is a circulation of publication about e-Governmente-Government hosted by government, through PPP, and academia as well as training for citizens on e-Governmente-Government at national and local level.

4.7 E-Participation [EPAR]

Brazil got quite high score on this indicator. Brazilian government has tried to improve the provision of information through SNS, open more website for each service. For calling citizens to connect with government, the government gives citizens the option to subscribe to national portal contents via Tweeter or Facebook. They also publish much information from government activities. Currently, there are fourteen governmental projects of digital inclusion (http://www.governoeletronico.gov.br/acoes-e-projetos/inclusao-digital). The most notable are the broadband connection in the schools, digital inclusion workshop, and "a computer per student". Mostly, the projects are aimed at lower class students and its community, because of the lack of infrastructure in certain areas and promote the usage of ICT in education.

4.8 Open Government Data [OGD]

http://dados.gov.br/ is portal for open government data in Brazil. It was introduced in 2012, the Brazilian Open Data portal was initiated to give the public access to raw data from public agencies. The Brazilian Portal Open Data is the tool provided by the government so that everyone can find and use the data and public information. The site prides itself on simplicity and organization so that you can easily find the data and information you need. The portal also aims to promote dialogue between actors of the society and the government to think the best use of data for the sake of a better society.

4.9 Cyber Security [CYB]

Brazil is confronted with a wide variety of so-called cyber threats, including online scams, cybercrime, and digital surveillance. The cyber threats are growing across Brazil and fast evolving cyber-security apparatus. Brazil has not implemented any legislation addressing cybercrime. Any cyber laws that Brazil does have either outdated or in conflict with international standards. In Brazil, there is a serious lack of privacy protection for any data being sent over the nation's networks due to the lack of privacy legislation in place. There is no law on access control, risk assessment, and e-payment.

4.10 The use of Emerging ICT [EMG]

Despite of rising on the Internet user and broadband penetration. As for IoT, the concept of IoT is quite new and awareness still low. Current status now IoT is already a familiar name in Brazil. During the evaluation processes, not much information on IoT and Big data could be found in the government activities. No evidence found the government agency that act as a Cloud Computing Provider for other government agencies and uses the emerging trends in government departments and agencies.
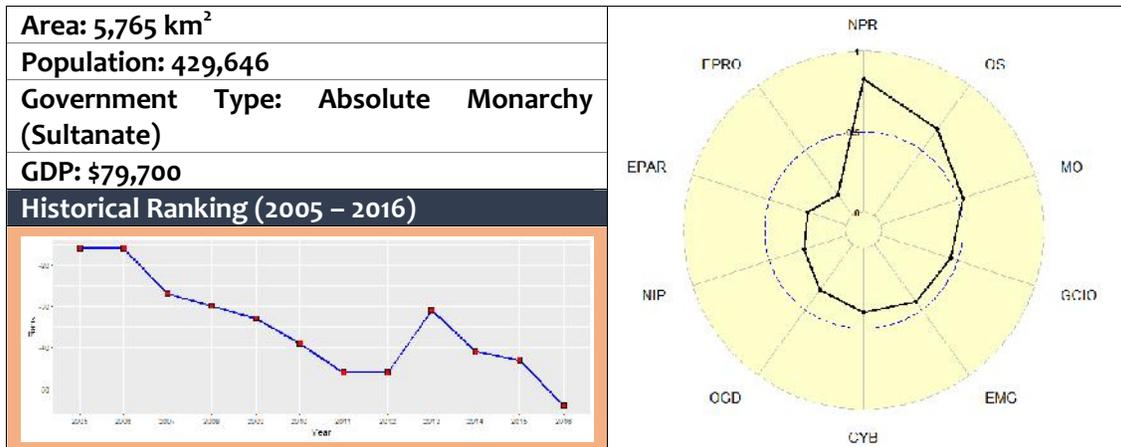
5   Some Highlights

One single page groups the electronic services provided by the Brazilian government the e-Services (http://www.governoeletronico.gov.br/) and information homepage (http://www.e.gov.br/). This page also provides useful links to other governmental sites. It has to be noted that this web page has kept its structure for the past several years. It might be desirable to change its appearance and interface. Brazil's Open Data portal is an integral part of the Open Data National Infrastructure aiming to provide one stop government data provider, to improve transparency, and to contribute towards a better policy making. Brazil has not implemented any legislation addressing cybercrime. Any cyber laws that Brazil has either outdated or in conflict with international standards. In Brazil, there is a serious lack of privacy protection for any data being sent over the nation's networks due to the lack of privacy legislation in place.

Brazil is one of the biggest population and area, therefore to provide the e-Services to all citizens are require to setup a good infrastructure, now the situation is low awareness of e-Governmente-Government services is a barrier preventing its effective use, therefore it can be established that this is also an obstacle to the assessment of citizen demand. One of the challenges is the citizens with higher levels of education get more easily acquainted with the new ICT tools and access the e-Government services. Besides, education consists a fundamental requirement to enable citizenship and as a consequence for the advancement of e-Governmente-Government.

Brunei Darussalam

1 General Information

Area: 5,765 km²
Population: 429,646
Government Type: Absolute Monarchy (Sultanate)
GDP: $79,700
Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

ASEAN Countries	Asian Countries
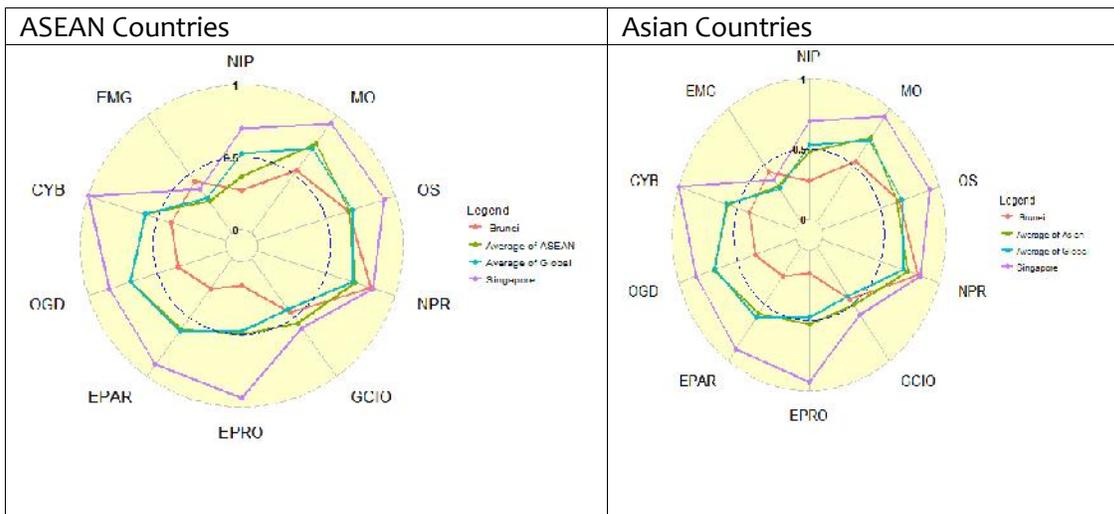
Among ASEAN Countries, Brunei has a better score than the average score of APEC in National Portal and the use of the Emerging ICT. As shown on the above picture, Brunei is very low on the e-Participation, e-Government Promotion, and Network Infrastructure. Considering that Brunei is a rich small country similar to Singapore, its lack of basic infrastructure is questioning. The government type of Brunei, which is absolute monarchy, may contribute to the low score on e-Participation and e-Government Promotion. The positioning of Brunei in ASEAN countries is similar to its position in Asian countries.

3 E-Government Development

e-Government in Brunei is formally led by e-Government National Center (EGNC). EGNC provide both government institutions and government officers with various services. EGNC offers One Government Network and One Government Cloud to government institutions for reduce their capital expenditure on ICT infrastructure. For government officers, EGNC provide ONEPASS, a secure Digital Identity, for gaining the benefit of online collaboration among government officers.

Source: Brunei e-Government Center
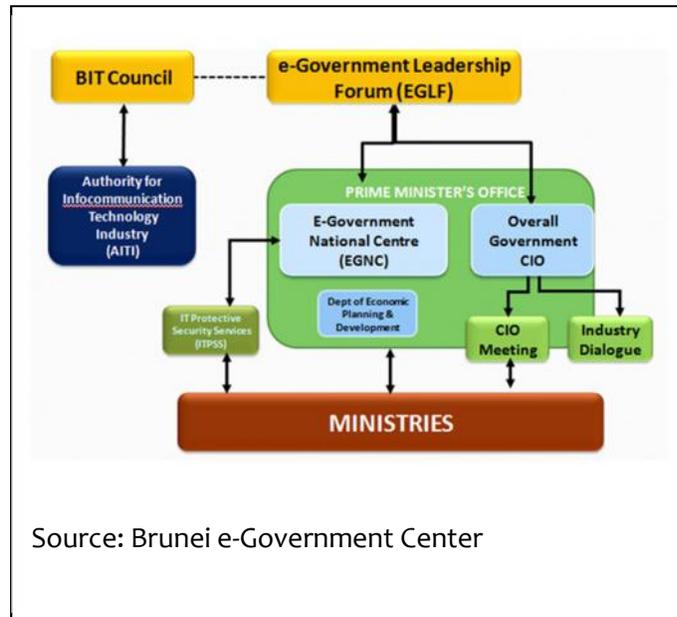
Government CIO is distinguished as the key factor of leadership in e-Governmente-Government development. Brunei government established the e-Government Leadership Forum (EGLF) to strengthen the leadership in the area of e-Governmente-Government development. Deputy Minister at the Prime Minister's Office chaired the forum to expose the strong commitment to e-Government development. This is the highest body for approving and monitoring the progress of e-Governmente-Government development. All CIO in government institutions are involved in the forum. The Co-Deputy Chairman from the Prime Minister's Office appointed as the Overall e-Government Chief Information Officer (Government CIO).

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 68.8% of people in Brunei were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 7.1% have fixed-broadband subscriptions, but only 6.3% of the population has a wired broadband connection.

4.2 Management Optimization [MO]

In 2014, Brunei has launched the Digital Government Strategy 2015-2020. The ultimate goal of this strategy is the Digital Government. There are six pillars that embody the Digital Government. These are Service Innovation, Security, Capability & Mindset, Enterprise Information Management, Optimization, and Collaboration & Integration.

To support these pillars, Brunei has developed One Government Network (OGN). The OGN is targeted to provide government agencies and other parties to establish inter-connectivity with other government agencies.

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e-Tax and e-Health are the best Online Service during the period of survey.

In terms of complexity level, most of investigating Online Service in Brunei has reach a transactional in which user can start the transaction from applying to receiving the service through the portal. In contrast, e-Procurement in Brunei is still very simple and less complex than other online service. Except the e-Procurement, all Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

To measure the level of convenience, the third party application result has showed that all portal is above the average in terms of speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 4 List of Online Services

Online Service	URL
e-Procurement	http://www.mof.gov.bn/index.php/general-information-state-tender-board
e-Tax	https://www.stars.gov.bn
e-Customs	http://www.bdnsw.gov.bn/Pages/Home.aspx
e-Health	http://www.moh.gov.bn/SitePages/Bru-HIMS.aspx
One-Stop Service	https://brunei.gov.bn/en/SitePages/Home-Citizens.aspx

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of Brunei (https://brunei.gov.bn) contains proper information for local citizens and foreigners. Information about Brunei is available on the portal. User can find information about culture and heritage, demographic, and government. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is above average both from PC and from Mobile Device. The portal also provides the user with some functionalities such as searching, site map, and Social Network integration.

4.5 Government CIO [GCIO]

Brunei government established the e-Government Leadership Forum (EGLF) to empower the leadership in the area of e-Governmente-Government development. The forum is chaired by the Deputy Minister at the Prime Minister's Office. All CIO in government institutions are involved in the

forum. The Co-Deputy Chairman from the Prime Minister's Office appointed as the Overall e-Government Chief Information Officer (Government CIO).

There is a quarterly dialog meeting among GCIOs to share the members' experience during the e-Government Program/Projects. The output of the meeting will be discussed in the EGLF. The Permanent Secretary usually chaired the CIO Dialog Meeting.

4.6 E-Government Promotion [EPRO]

There is small trace in Brunei that indicates any initiatives related to promote e-Government for citizens. Although the Digital Government Strategy includes initiatives to increase the awareness of citizens on e-Government, the program and/or the activities to support the promotion strategy are hardly to find. In addition to that, there is no information whether Brunei regularly evaluated their e-Governmente-Government development or not.

4.7 E-Participation [EPAR]

E-Participation in Brunei is relatively low, compared to other indicators. It is susceptible to the absolute power of Sultanate. Most of government portal use twitter and Facebook as the only channel for citizens to give some idea or comment. There is no evidence about how the government proceed the citizens' comment.

4.8 Open Government Data [OGD]

During the research period, Open Data in Brunei is still at initial stage. Most of Data are about education and religion-related. Despite the limitation of variety of dataset, Brunei has appointed EGNC as the responsible institution for Open Data website.

4.9 Cyber Security [CYB]

Brunei has ratified several laws related to cybersecurity. Some of them are as follow:

- Chapter 197 Anti-Terrorism (Financial and Other Measures) Act
- Chapter 194 Computer Misuse Act
- Chapter 153 Official Secrets Act
- Chapter 108 Evidence Act

In addition to these laws, Brunei has strengthened organization capacity for cybercrime countermeasure by setting up National ICT Security Policy Authority and Bru-CERT.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Brunei has started to implemented Cloud Computing for running One Government Private Cloud (OGPC). OGPC offers Infrastructure-as-a-Service (IaaS) for government agencies. E-Government National Center maintains this Cloud Computing Services. Other emerging technologies are still immature and no evidence to prove that Brunei implemented Big Data and IoT.

5   Some Highlights

Among ten indicators in the current ranking, the National Portal and Online Service are the top two indicators in Brunei. National Portal Brunei contains useful information for local and also foreigners such as country information, tourism, and link to available e-Services. Online service on Healthcare is one of vocal point in Brunei in year 2016 with its slogan "One Patient One Record". Using ID-Card, citizen can enjoy the Bru-HIMS using PC or using mobile device.
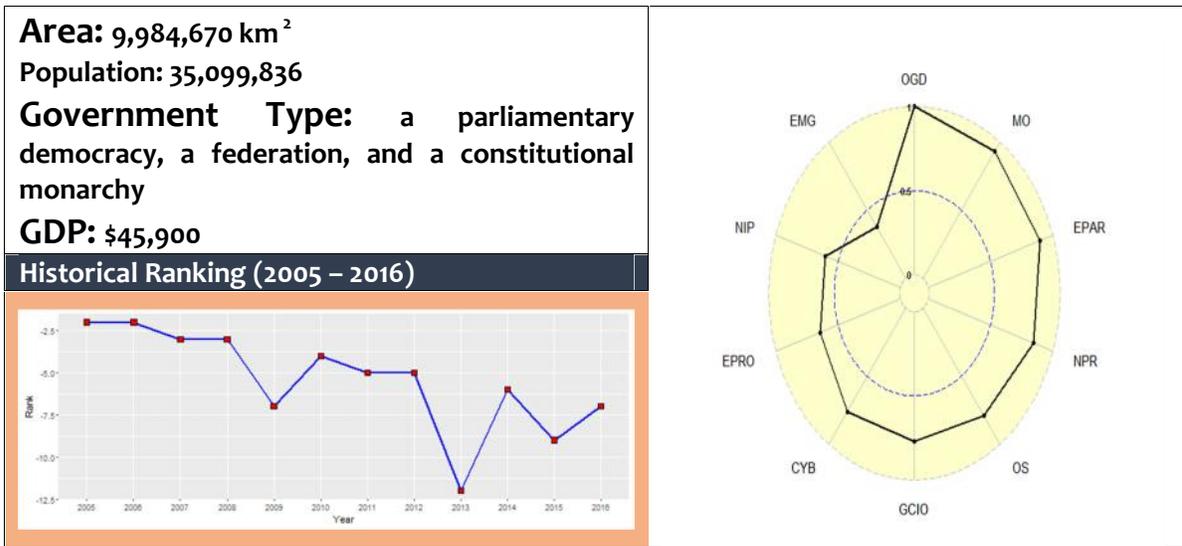

Bru-HIMS at http://www.moh.gov.bn
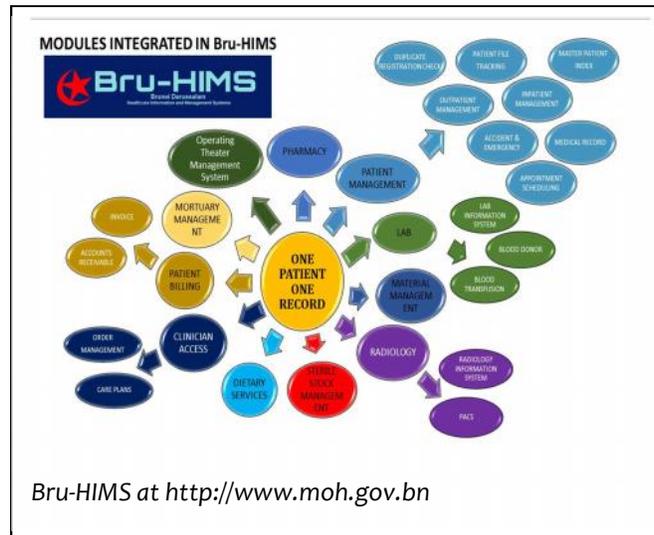
In this release, Brunei has the low score on e-Government Promotion and e-Participation. It is hardly to find any evidences or traces about campaign or other initiatives for promoting e-Government Services. E-Participation is considered very low in Brunei. The government system of Brunei may contribute to the implementation of e-Participation.

Canada

1 General Information

Area: 9,984,670 km²

Population: 35,099,836

Government Type: a parliamentary democracy, a federation, and a constitutional monarchy

GDP: $45,900

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

APEC Economies	OECD Countries
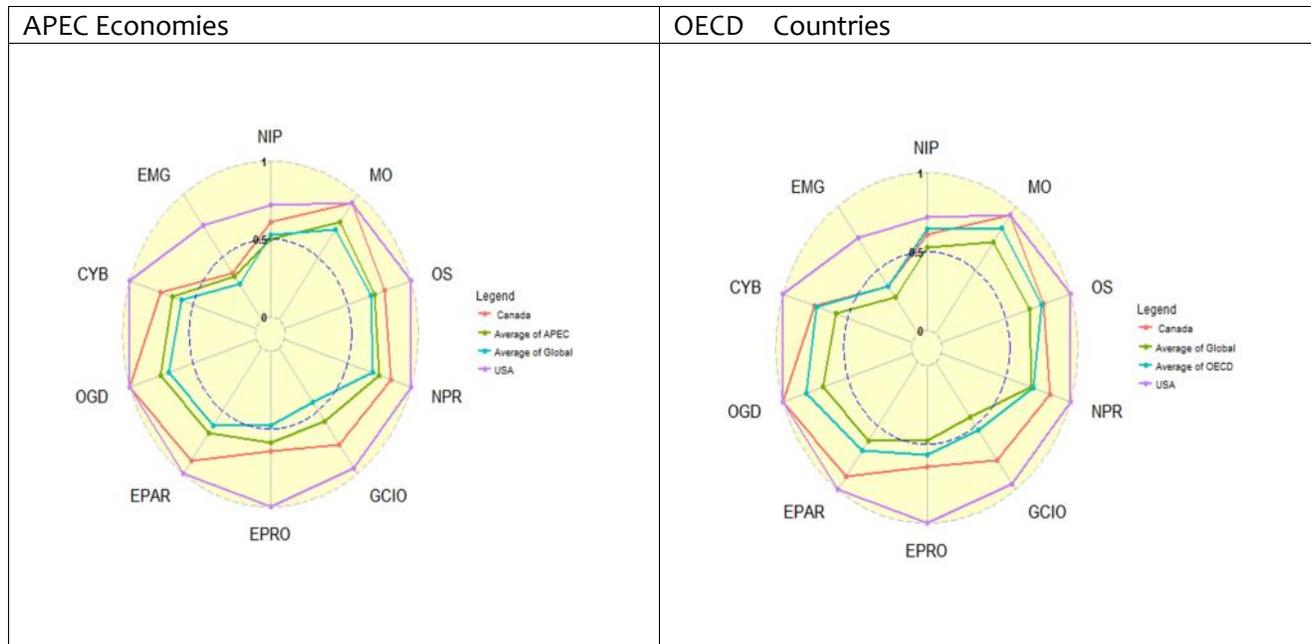
Canada have achieved great performance on all the indicators exceeding the average level of both APEC economies and OECD countries. The highest scores of the ten indicators are the Open Government Data and Management Optimization, especially full score on the OGD.

3   E-Government Development

Digital Canada 150 is the overall ICT strategy for nation which was launched in 2014. The Digital Canada 150 is aimed to take the full benefit of digital opportunity for Canadian. It is expected that in 2017, in a 150th anniversary of Canada, Canada will thrive the digital Canada which accentuates five pillars; connecting Canadians, protecting Canadians, economic opportunities, digital government, and Canadian content. By releasing the Digital Canada 150, Canadian government endeavors a new challenge for connecting the Canadian, that is shifting e-Governmente-Government to digital government where the government service is digital by default.

To lead and take control of information management, Canada has set up The Chief Information Officer Branch (CIOB) in the secretariat organization. According to the official explanation, "The Chief Information Officer Branch (CIOB) provides strategic direction and leadership in the pursuit of excellence in information management, information technology, security, privacy and access to information across the Government of Canada. To facilitate this work, CIOB also provides support and guidance on capacity building and project management and oversight."

4   By Indicators

4.1   Network Infrastructure Preparedness [NIP]

Approximately 87.1% of people in Canada are Internet users according to the report released by ITU. 35% are fixed-broadband users and the wireless-broadband users are 59.8%.

4.2   Management Optimization [MO]

In 2014, Canadian government has launched Digital Canada 150. The Digital Canada 150 is aimed to take the full benefit of digital opportunity for Canadian. It is expected that in 2017, in a 150th anniversary of Canada, Canada will thrive the digital Canada which accentuates five pillars; connecting Canadians, protecting Canadians, economic opportunities, digital government, and Canadian content. Canada has created Shared Service Canada for consolidating government back office system to save money, streamline process, and deliver better services. The initiatives are still continuing to support and stimulate the app economy by creating an open data ecosystem in Canada. By releasing the Digital Canada 150, Canadian government endeavors a new challenge for connecting the Canadian. The country will provide the Canadian with the digitally government services. In other words, the Canadian government will shift from e-Governmente-Government to digital government where the government service is digital by default.

4.3   Online Service [OS]

Among five investigated online services, e-procurement, e-tax, one-stop-service are the better than the rest online service. These four online services provided the citizen the two way interaction with government, including e-payment, security, and automation. E-Health and E-Customs do not provide two-way interaction so far. E-procurement portal of Canada is managed by Public Works and Government Services Canada. E-tax system offers various services related to taxation for the citizens including business enterprises. It is managed by Canada Revenue Agency. The system is supported by NETFILE as an electronic tax-filing system. E-Customs Canada offers the facilities to monitor the

process of trading from checking the document to releasing the goods. It is equipped with Customs Automated Data Exchange (CADEX).

4.4 National Portal [NPR]

The national portal of Canada (www.Canada.gc.ca) is integrated with the one-stop service, a gateway to improve the communication experience between the government and the public. The national portal of Canada has the basic interface for stakeholders to contact government electronically.

Moreover, it provides information that helps the public to better understand government structure. The well-organized portal serves as a platform that assists the public to find desired information. To improve users' browsing experience, the portal also allows users to create government accounts that allow each individual user to customize the portal as they desire. The website contains accessibility features statement and allows configuration of the visual presentation by using a client-side Cascading Style Sheet (CSS) file. The portal is available in official languages – English and French. National Portal of Canada have been using Web 2.0 technology and combining SNS features as well as being user-friendly and the portal have easy-to-use electronic services and services for finding information. Portal can also access via mobile phone also.

4.5 Government CIO [GCIO]

The CIO of the government of Canada is responsible for establishing strategies, directions and policy for the Government in the areas of Information Technology, Information Management, Security, Privacy and Access to Information. This role involves working collaboratively and often-in partnership with all Federal Government Departments & Agencies, industry, other Canadian jurisdictions as well as on the international. There has the Chief Information Officer Branch (CIOB) which provides strategic direction and leadership in the pursuit of excellence in information management, information technology, security, privacy and access to information across the Government of Canada. The office also provides support and guidance on capacity building and project management and oversight.

4.6 E-Government Promotion [EPRO]

Canada has been a pioneer in providing access to electronic information, political agendas and cultural/linguistic sensitivities have greatly hindered the implementation of bias-free policies for the dissemination of information and promotion of e-Governmente-Government, so the implementation of e-Government in Canada is an effort of both public and private entities. For example, the Digital Economy in Canada consists of members from the government and private companies. The main driver of the e-Government promotion is the Government Online (GOL) entity, which is also the supervisor of the IM/IT plans. The responsibility for coordinating the implementation of GOL lies on the Information Technology Services Branch at Public Works and Government Services Canada (PWGSC).The Government of Canada tried to promote Legal Mechanism Enabling Mechanism Support Mechanism, Assessment Mechanism through providing up to date Government announcements, news, contact, services, and daily life information.

4.7   E-Participation [EPAR]

In Canada, e-Services online services, online information and online citizen engagement are organized by category and not on a department-by department basis, which makes it user-friendly and responsive to citizen demands. In order to gauge the efficacy of their services, the government uses a unique Canadian outcomes analysis approach called 'Citizens First' in the case of individuals and families, and 'Taking Care of Business' in the case of companies, So it enable everyone to use electronic form of services very easily. The Government of Canada offers a variety of applications, accounts, tools and services to allow citizens to complete tasks online.

4.8   Open Government Data [OGD]

Canada's commitment to open government is part of the federal government's efforts to foster greater openness and accountability, to provide Canadians with more opportunities to learn about and participate in government, to drive innovation and economic opportunities for all Canadians and, at the same time, create a more cost effective, efficient and responsive government. The Government of Canada first launched its Open Government strategy in March 2011, and then further enhanced its commitment by announcing its intention to join the Open Government Partnership in September 2011.Canada has consulted Canadians on both the development of a Digital Economy Strategy and on Open Government. Canada`s Action Plan on Open Government sets out Canada commitments to Canadians and for the Open Government Partnership, which Canada will achieve over a three-year period through the effective and prudent use of resources. It is structured along the three streams of our Open Government Strategy: Open Information, Open Data, and Open Dialogue. The portal site http://open.canada.ca/ is one of the best practices among the countries.

4.9   Cyber Security [CYB]

Canada has made several regulations and Acts related to Cyber Security, such as the Personal Information Protection and Electronic Documents Act (PIPEDA). The national Cyber Security Strategy by the Ministry of Public Safety. Canadian researchers have been at the forefront of making cyberspace a reality. This same ingenuity must continue to be applied to predicting, detecting and defeating the cyber threats of tomorrow, and exploiting cyberspace to further Canada's national interests. The cyber security strategy will be implemented by the departments and agencies most directly responsible for securing the Government's cyber systems. Canada will work with our provincial and territorial partners, as they are jointly responsible for protecting much of the critical infrastructure in Canada.

4.10 The use of Emerging ICT [EMG]

Government of Canada has regarded the merging ICT as important elements into its Digital Economy Strategy, discussing about how to utilize Cloud Computing and IOT to benefit the citizens and industries. Government has established a shared service provider and put Big data into their internal agencies practice. However, there has no specific strategy about emerging ICT or regulations so far, official utilization through policy still needed to be discussed.

5 Some Highlights

As one of the pioneer countries in providing advanced e-Services to citizens, Canada has a splendid one-stop service system which endeavors to embrace all the information and services that citizens or enterprises need at one unified place. Massive contents have been divided into very plain and concise catalogs and users can always go to the destination directly through humanized introduction. Also, citizens are easily to interact with government agencies due to straightforward communication channels. That's why Canada has extremely good performance on the indicators of "Online Service" and "E-participation". As one of the leading nations in e-Governmente-Government area, Canada is expected to get more scores on the new indicator for the usage of new technologies, which is to have efficient model of adopting emerging technologies such as Cloud Computing or IOT for developing countries to learn from in the future.

Chile

1   General Information
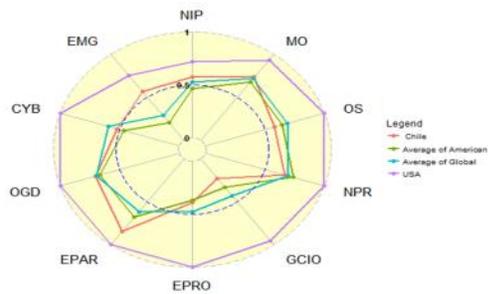
Area: 756,102 sq km
Population: 17,508,260
Government Type: Presidential republic
GDP: $23,800

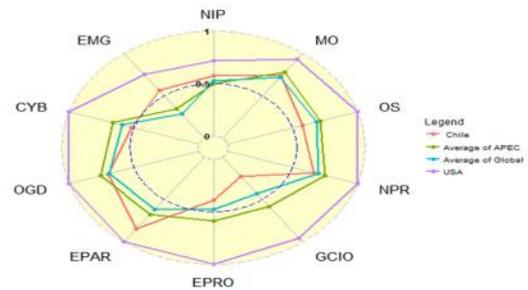**Historical Ranking (2006-20016)**
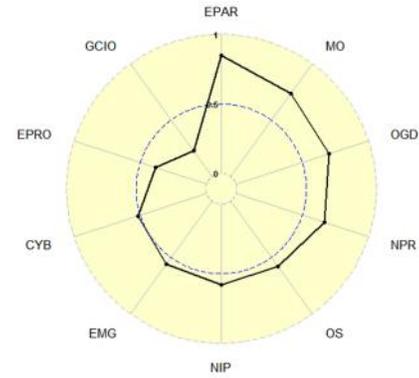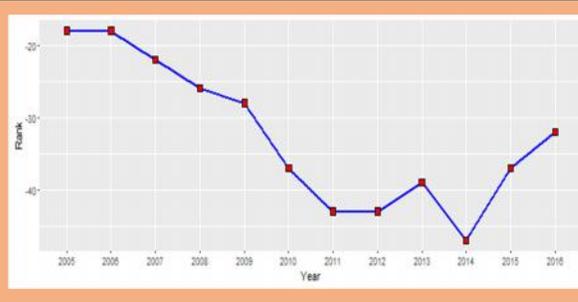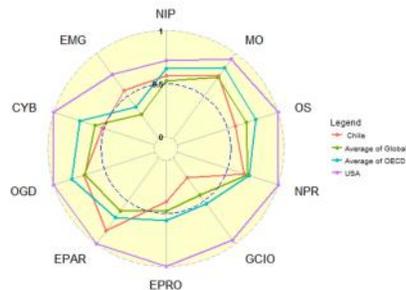

2   Positioning in a region

America Countries

APEC Economies

OECD Countries

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3 E-Government Development

Through 2004-2006, the action plan concentrated on promoting the generalization of the access and the sophistication of IT usage through using Internet by citizens and societies in major six areas (massive access, education/training, e-Governmente-Government, national industry, IT, and legal infrastructure). In November 2010, Chile's government unveiled a new digital action plan for public sector IT development for 2010-2014. The plan is intended to drive state modernization and wider utilization of ICT nationwide. Among specific targets is a plan to expand the number of government agencies that offer e-Governmente-Government services by around 20 during each year of the plan.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Chile has 72.3% Internet users per 100 inhabitants and 28% of mobile-broadband penetration with cutting the price of an entry-level broadband service. The broadband subscriber per 100 inhabitants was 12 as of 2015. Chile's broadband market is one of the most developed in Latin America.

4.2 Management Optimization [MO]

In Chile, e-Governmente-Government is in full swing and one of the top countries in Latin America in terms of Internet access, but Chile will be faced with many challenges such as: how to reduce the digital divide and lack of technical infrastructure as well as implementation policies on e-Government.

Chile government aims to provide what the citizen needs and better services as a main goal of the e-Government. Now, Chile provides 130 services through 13 public institutions, the Social Security Institution, the Citizens Defense, etc.9 The national portal establishes the open place for the citizens to express their thoughts and views, and the national website, gobiernoabierto.cl/, is a good example of encouraging citizen's participation though e-Government in Chile. Currently, an interoperability platform service oriented organizes approximately 40 public institutions with over 109 formalities which improve the transaction more than 2 million in a month.

4.3 Online Service [OS]

In the end of 2004, Chile sets up the law for the Efficiency of Digital Communications, which rules the communication between government agencies and citizens in electronic media and manages the use of appropriate techniques and information. In addition, the Interoperability of Digital Document decree in 2004 improves the visibility of public administration by offering the innovative service of government information and digital identity validation.

4.4 National Portal [NPR]

The national portal http://www.gob.cl/ is main portal; it provides the Government information and President's activities but not e-Services integrated into national portal. The portal which offers information and procedures in a Government services have address www.Chileclic.cl. Recently the Chilean opened the webpage www.datos.gob.cl a centralized catalogue with a relevant data offer. In

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9 "Modernization and E-Government in Chile," www.modernizacion.gob.cl/

order to increase the citizen participation indexes, the Chilean government has created not only the website www.modernizacion.cl, but also SNS features such as Facebook, Twitter and Flickr where, among other things, users are invited to express and propose ideas contributing to Chile's modernization. In the website www.comunidadtecnologica.gob.cl there are a series of initiatives and projects focused on ICT training for public officials.

4.5 Government CIO [GCIO]

There was not information about the CIO found in Chile in terms of CIO positions as well as CIO organizations. There is not existence of law to create or mandate the position of CIO in Government at national level and sub-national level. We also did not find any information about the CIO training in Chile.

4.6 E-Government Promotion [EPRO]

The e-Government strategy and master plan were found at national level, not in sub-national level. They also had a policy for development e-Government in national level, there is not e-Government fund in Chile but they have a fund for developing national ICT. No activities from the Government to improve e-Government in Chile, such as: e-Government conference or training course to the citizens.

The IDB funded project "ChileAtiende" was used to upgrade the electronic government procurement platform to increase its visibility and transparency, and to expand the range of business opportunities for potential government suppliers. The project also offered digital literacy programs and public awareness campaigns to inform citizens about online government services.

Chile government aims to provide what the citizen needs and better services as a main goal of the e-Government. Now, Chile provides more than130 services through 13 public institutions, and the Social Security Institution. The national portal establishes the open place for the citizens to express their thoughts and views, and the national website, gobiernoabierto.cl/, is a good example of encouraging citizen's participation though e-Government in Chile.

4.7 E-Participation [EPAR]

Effective interaction between citizens and Government, where the former are able to influence on the decision making process through their participation in the consultations made by the Government through the web. The Government must not only aim at offering a good service, but also consider the number of people who really have access to these media, and it must inform the citizens through campaigns on the procedures and participation platforms which are available by electronic means. Social network services are now used as a means to help the communication between the government and citizens.

4.8 Open Government Data [OGD]

The implementation and development of Open Government Data policies in Chile is already happening, the current state is nothing but a small collection of already-available links to data sources in heterogeneous formats, and with absolutely no semantic coherence. The transparency law already paved the way in regulation terms.

The portal of open data is http://datos.gob.cl/ it contains more than 2400 datasets, it comes from 196 organizations belongs to government and distributing by 23 categories.

4.9 Cyber Security [CYB]

Chile has an officially recognized national CIRT, CLCERT. CLCERT-CL has existed and functioned within the government but it is not a formal institutional entity so much as an operational capacity and structure maintained by the Ministry of the Interior and Public Safety. Chile government also has Program for the Improvement of Information Security Systems Management as the national framework for implementing internationally recognized cyber-security standards.

4.10 The use of Emerging ICT [EMG]

There is no evidence found that Chile government is use of emerging ICT to promote e-Government activities, such as applying IoT, Big data and Cloud computing in government activities.

5 Some Highlights

Chile has achieved its e-Governmente-Government success due to three main factors: a continuous long-term strategy, efficient policy-making and its modern socioeconomic qualities. Unlike other countries in the region, Chile began designing its long-term e-Governmente-Government policy plans by the early 2000s, when its first webpage for official procedures, "Easy Errand," was created. By 2004, Chile had designed its first Digital Agenda to start with a continuous process that would lead up to today's 2013-2020 version.

Many of Chile's programs, such as Startup Chile, which has become a regional leader in promoting tech and other businesses, are well-designed and strategically planned based on shared knowledge with scholars or think-tanks. Chile's policy-making processes show an adequate performance in evidence-based instruments and societal consultation.

Good e-Government systems in Chile have engaged people to a good level of e-participation, but this certainly does not mean that there is a better overall democratic process. Other factors – such as citizen's knowledge and understanding of policies that concern them – must be taken into consideration to find integral solutions. It is necessary to inform citizens and provide proper education in use of the new tools to see major benefits offered by these new opportunities.

China

1 General Information

Area: 9,596,960 km ^{2}

Population: 1,367,485,388

Government Type: communist state

GDP: $14,300

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region
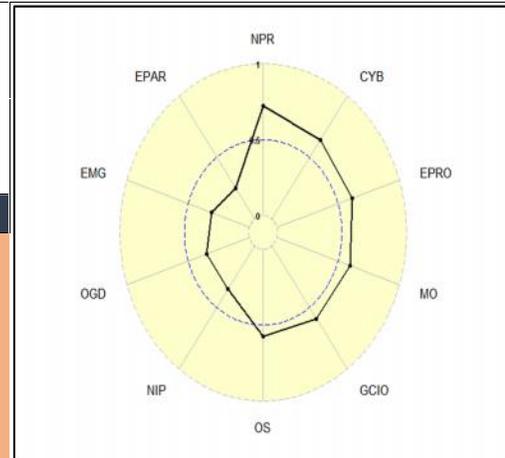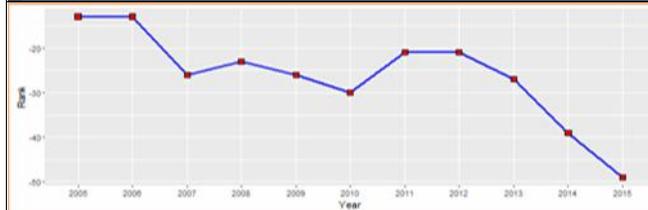
APEC Countries	ASIAN Countries
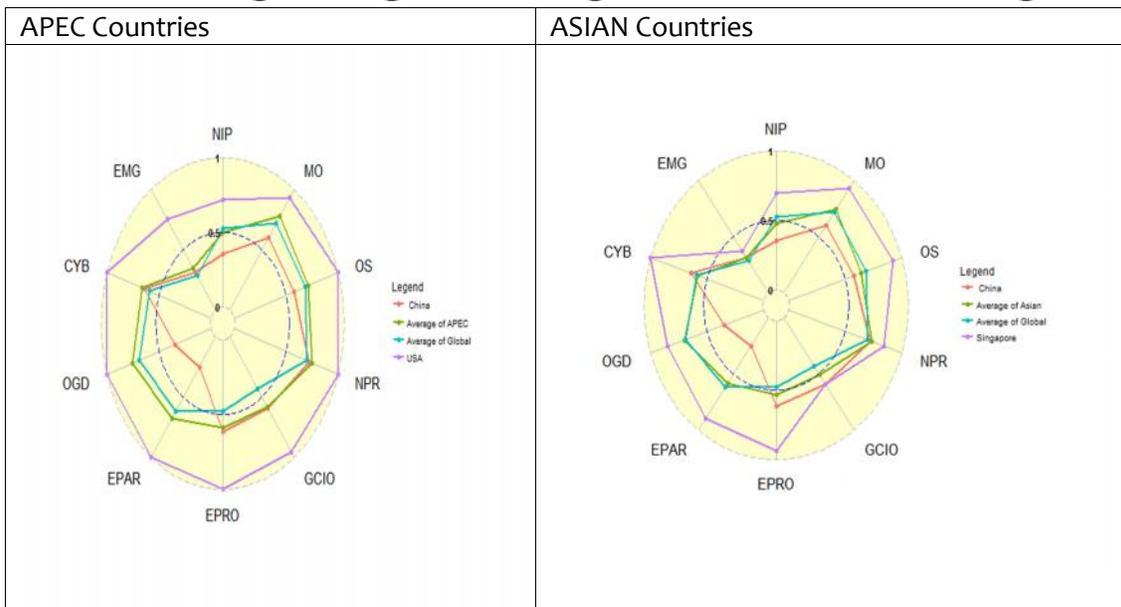
China has still showed his weak points compared with other Asia countries and APEC members. Especially, the performance on indicators of E-Participation, Open Government Data are extremely low within its economic status. Considering the political context, these two indicators may seem remaining no progress phase in recent year.

3 E-Government Development

To align with national informatization development plan 2006-2020, the Ministry of industry and information technology of the People's Republic of China (MIIT) has published "The 12th five-year national e-Governmente-Government plan", also consistent with nation's overall 12th five-year strategy. the 12th Five-year plan is focusing on development of e-Governmente-Government network, increasing financial investment in e-Governmente-Government construction, and enacting laws for e-Governmente-Government. And the goal of this plan is aimed at perfecting and to strengthening e-Governmente-Government, which can support government departments to perform their functions and duties, in order to satisfy the public on public service delivery, social management, market supervision, and promoting the administrative restructuration and service based government buildings.

At present there is no GCIO position set up in the government of China, the closest agency has been called "National informatization leading group" which was set up at The State Council and transferred to MIIT since the institutional reform in 2008. On Feb 27, 2014, China established another leading group which named The Central Leading Group on the Cyber Security and Information, which is led by Chinese president Xi Jinping.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

According to the report of ITU, 49.3% of people in China were Internet users, approximately 14.4% have fixed-broadband subscriptions, and wired broadband subscription has reached 41.8%. China has a poor infrastructure construction and penetration than other countries.

4.2 Management Optimization [MO]

In China, several plans for the Information and Communication Technology (ICT) development had been proposed and some have been implemented already to improve service delivery through utilization of e-Governmente-Government. For this, China has been making efforts to improve the level of its Government portal by providing comprehensive information, integrating services of different sectors and focusing on interactions between governmental officials and citizens.28 According to the Ministry of Industry and Information Technology of People's Republic of China (MIIT), the 12th Five-year plan is focusing on development of e-Governmente-Government network, increasing financial investment in e-Governmente-Government construction, and enacting laws for e-Governmente-Government. And the goal of this plan is aimed at perfecting and to strengthening e-Governmente-Government, which can support government departments to perform their functions and duties, in order to satisfy the public on public service delivery, social management, market supervision, and promoting the administrative restructuration and service based government buildings. According to the Information Development Plan from the Ministry of Industry and Technology of People's Republic of China (MIIT) which published in September 2013, until 2015, The key works of Chinese E-Government is to perfect unified national e-Governmente-Government network, to promote the information resource sharing.

4.3   Online Service [OS]

The score for Online Service is based on five investigating online services, i.e., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e-One-Stop Service and e-Health have the lowest score, compare to other three online services. According to 12th Five-year plan of China's E-Government, Chinese government would pay more and more attention on promoting the ability of E-Government service, increase types of online services, optimize the process, and improve the coverage of online service guide, form download, online consulting, online application, the result ,feedback and so on.

4.4   National Portal [NPR]

 The Chinese national portal www.Gov.cn provides a general gateway for users to access and search information published by the government. The national portal allows users to link to the portals of local governments, departments and agencies and also provide popular E-services. The national portal includes information from government documents to government structures. Moreover, the portal is provided in multiple languages (simplified Chinese, traditional Chinese, and English). The portal contains pages that allow users to download application forms, search for information, and provides a platform for administrative departments to exchange information with each other. There are also video feeds and other multimedia contents in the portal. The national portal includes 8 topics which are government structures, news, special topics, policies, services, seeking advice for administration, data and national conditions. Through the topic of seeking advice for administration, users can up load their opinions, advice and comments. There are also a sub-topic named I have a word to the premier in which people can express their viewpoint directly to the Premier. Furthermore, the national portal also provides online social media platform such as Microblog and WeChat where citizens can share their opinions and inquiries while the government responding them effectively (Microblog and WeChat are two of the most popular social media in China). (The Microblog and WeChat account of government are mainly posting and publishing the government's policies and news, not for sharing and responding).

4.5   Government CIO [GCIO]

Chinese Government has no Chinese government has no CIO. But there is the Leading Group of State Informatization, which is led by Chinese Premier Li Keqiang. And an institution called the Ministry of Industry and Information Technology of People's Republic of China (MIIT), which is responsible for development of e-Governmente-Government. There is also a committee named Advisory Committee for State Information in charge for making recommendations to the Leading Group of State Information. On Feb 27, 2014, China established another leading group which named The Central Leading Group on the Cyber Security and Information, which is led by Chinese president Xi Jinping. Local governments also have industry and information technology department and Leading Group of Informatization. However, CIOs in China are not given enough authorities and the responsibilities are still unclear. There is no further plan for CIO development until now

4.6 E-Government Promotion [EPRO]

Although, Chinese e-Governmente-Government nowadays is still at starting stage, China's e-Governmente-Government development index (05359) and world e-Governmente-Government development ranking 70 covering over 1,341 million people among countries with largest population, followed by India based on the 2014 UN e-Governmente-Government rankings. Chinese government has implemented a series policy to promote E-Government. Such as "2006-2020 National Informatization Developmental strategy, 12th Five-year plan of national E-Government, Informatization Development Plan of MIIT"

4.7 E-Participation [EPAR]

Despite several developments in China e-participation is still lacking as a platform bringing the Chinese citizens on board as main stakeholders in promotion of ICT. Even through the government provides blogs or any other means of interaction, there is still a long way to go for Chinese e-Governmente-Government to develop its E-participation for online users to fully have decision make stake at national level.

4.8 Open Government Data [OGD]

The Regulations of the People's Republic of China on Open Government Information (OGI Regulations) published on April 24, 2007 and effective one year later on May 1, 2008, mark a turning point away from the deeply ingrained culture of government secrecy toward making Chinese government operations and information more transparent. But these Regulations do not have quite the status of a law promulgated by the National People's congress.

4.9 Cyber Security [CYB]

China does not have a monolithic, coordinated policy approach to cyber security. Although political power is centralized in the Chinese Communist Party, Chinese governance is fragmented regionally and functionally. China's civilian national cyber-security strategy, initially classified but later promulgated more widely, is known as "Document 27: Opinions for Strengthening Information Security Assurance Work." It enshrines a principle of "active defense" and sets policy foundations for critical infrastructure protection, cryptography, dynamic monitoring, indigenous innovation, talent development, leadership, and funding.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). The evidences show that local governments in China are eager to implement Cloud Computing or Big Data into their public sectors, especially the economic advanced cities and provinces such as Beijing, Shanghai and Guangdong Province. But central government is lagging behind the policies and plans for emerging technologies.

5 Some Highlights

Compared with other economics, China has a comparatively slow process on e-Governmente-Government development. Except the indicator of "Management Optimization", performance on all the segments of ranking could be considered backward than advanced nations. The absence of GCIO not only pares down the scores for evaluation, but more importantly, has influenced the execution of ICT plans in each government level. According to China's strategy, e-Governmente-Government has been regarded as a tool for administrative reform and government process re-engineering rather than developing e-Governmente-Government itself. A plenty of the online service remains below the phase of transaction, not to mention the lack of open government data and e-decision making. However, some megacities in China has promoted advanced e-Service and data share process to citizens (For example Shanghai), which continues to pull ahead the gap with underdeveloped areas. The gap of wealth has affected every aspect of the societies in China, and the implementation of better e-Governmente-Government is no exception.

Colombia

1 General Information

Area: 1,138,910 km²
Population: 46,736,728
Government Type: Presidential Republic
GDP: $14,000
Historical Ranking (2006-20016):
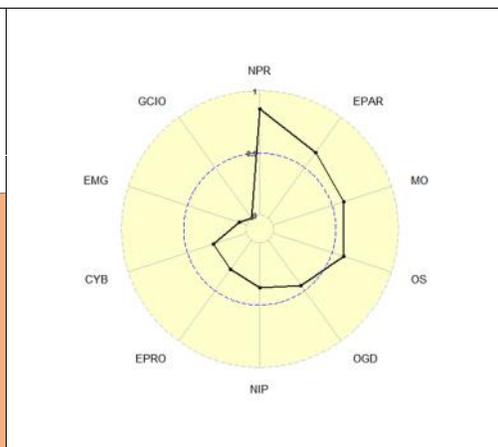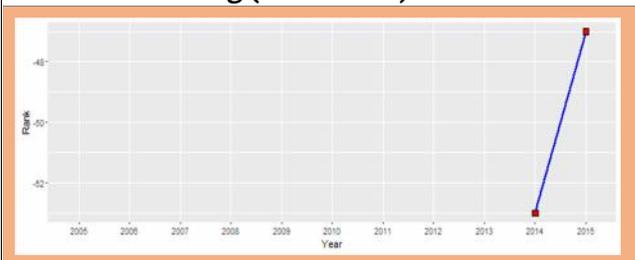
2 Positioning in a region

Countries in the Americas
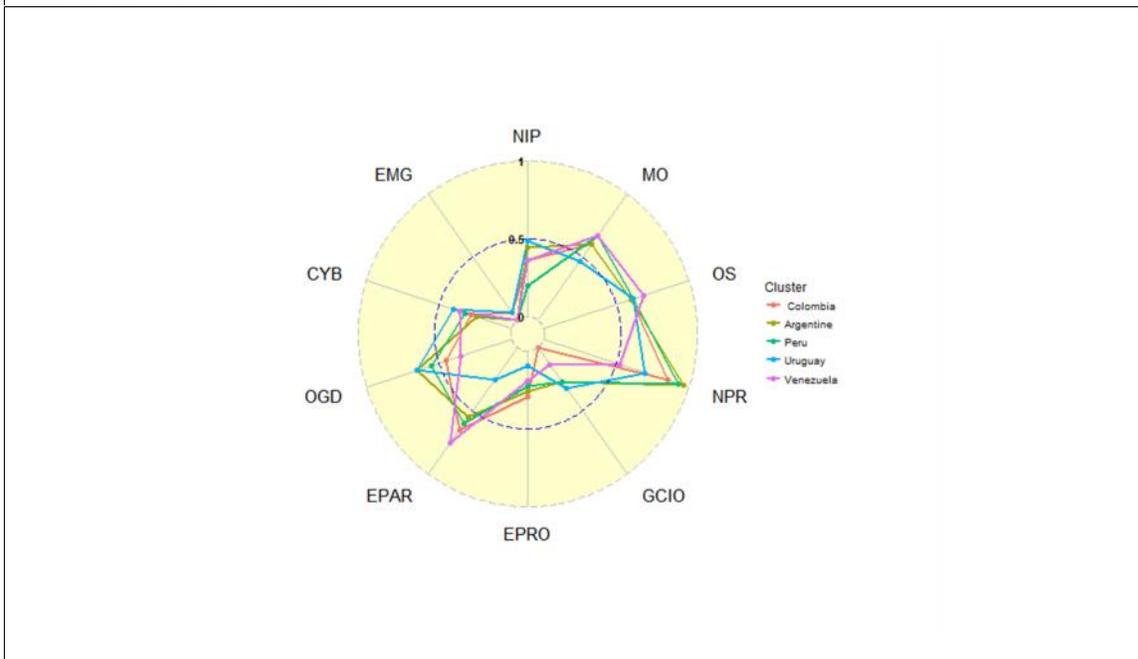
3 E-Government Development

Colombia is making great strides in some areas, but the overall trend has not been positive in recent years. In the United Nations' E-Government Development Index, Colombia slipped from 31st to 50th place from 2010 to 2014. Much of this change can be accounted for by a much more competitive and

crowded e-Governmente-Government environment as more countries develop their ICT infrastructure. Also, it should be noted that Colombia continues to be a top-twenty country in the area of e-participation.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

In December, the President of Colombia set forth the e-Governmente-Government management strategy in Resolution 2482, which emphasized the goals of a more efficient and transparent government. Colombia's online government strategy is developed and implemented by the Ministry of Information Technology and Communication (MinTIC).

4.2 Management Optimization [MO]

MinTIC has enunciated four main goals to achieve its online government vision through better management:

1. "Facilitate efficiency and collaboration within and between state agencies, as well as society as a whole.
2. To help increase transparency in public administration, with greater visibility of public affairs and facilitating citizen knowledge of state management.
3. Promote citizen participation using electronic media, building trust in government and enabling new channels to the collective construction of public policies, solving everyday problems, decision-making and social control.
4. Strengthening the conditions for increasing competitiveness and improving the quality of life, from the provision of services to meet the needs of citizens and businesses."

4.3 Online Service [OS]

From the national portal, citizens can easily access the online services page, which offers e-Services in nine categories: driver's license, single tax record, passport, certificates, identity card, other taxation, visa, SISBEN (social benefits program), and civil registration. Each of these categories offers a number of different options depending on the user's needs. However, many of them provide only a description of the procedure, rather than offering the entire procedure electronically.

4.4 National Portal [NPR]

Colombia's national portal is located at https://www.gobiernoenlinea.gov.co, and is called Gobierno en Linea (Online Government). It is offered in Spanish with a built-in translation widget powered by Google. Its main page provides news and information about Colombia, and there are also links to services for citizens, businesses, public employees, and youths. The site has links to Colombia's social media channels, including Facebook, Twitter, YouTube, and BlogSpot.

4.5 Government CIO [GCIO]

The closest equivalent to a CIO position in Colombia is the ICT Minister for MinTIC. This position is currently held by David Luna. As head of the Directorate for Online Government, he has

responsibility for all of its five different divisions as the organization uses a hub-and-spoke management model.

4.6 E-Government Promotion [EPRO]

Through MinTIC, the Colombian government is consistently working to promote the use and development of e-Governmente-Government. Their stated strategy is to identify how to create increased value for the government itself, businesses, and citizens through the use of e-Governmente-Government. To this end, Decree 19 was enacted in 2012 to eliminate paperwork for internal government uses. This led many ministries and agencies to find ways to digitize these services, leading to more efficient governance, and better customer service for businesses and citizens.

4.7 E-Participation [EPAR]

Colombia consistently ranks very high on the United Nations' E-Participation Index. It has been ranked 11th in the world since 2012, which is nearly identical to its 12th place rankings in 2004 and 2005. Colombia's web portal and most of its government websites actively encourage citizen participation by soliciting feedback, posting links to social media, and hosting regular online live-chats. The government also offers a site called Crystal Urn (http://www.urnadecristal.gov.co/) which posts information material about the major issues of the week and offers ideas for how to participate. The government answers questions and proposals from citizens, and provides brief online audio and video broadcasts.

4.8 Open Government Data [OGD]

The government offers an open data portal located at www.davos.gov.co. The portal is currently in the beta stage, but will be improved "according to user demand and supply of public resources."[10] Currently there are about 1,000 datasets available via the portal, and they are searchable by category or organization. The datasets are viewable online, or downloadable in Excel or text format.

4.9 The use of Emerging ICT [EMG]

In March, Colombia's Ministry of Information Technology and Communications (MinTIC) released its Agenda for Strategic Innovation: Cybersecurity. This document outlined its approach toward warding off the growing number of cyber-attacks, and forming a sound cyber-defense infrastructure. Colombia has also announced plans to use new ICT technology to launch a new open data and e-participation platform.

5 Some Highlights

Colombia has participated in several international efforts to improve e-Government in the Americas. For example, it has offered many candidates for excelGOV awards, and generally participated in regional and international working groups at a rate higher than its neighboring nations. Though it still has much room for improvement in termss of rankings, Colombia is poised to continue on its upward trajectory and make some important advances in the coming years.

Costa Rica

1 General Information

Area: 51,100 km²
Population: 4,814,144
Government Type: Democratic Republic
GDP: $ 15,500

Historical Ranking (2005 – 2016)
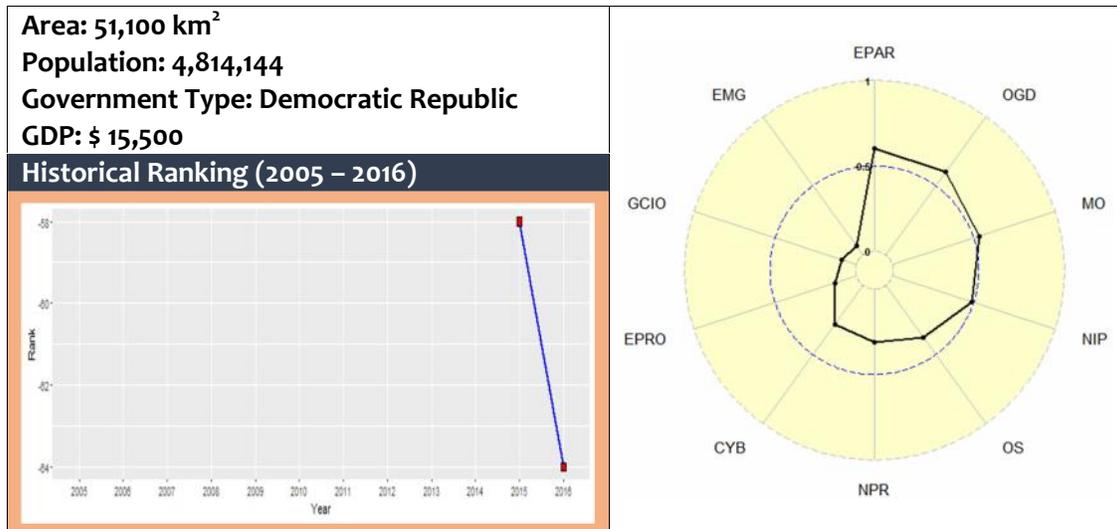
2 Positioning in a global organization and a region
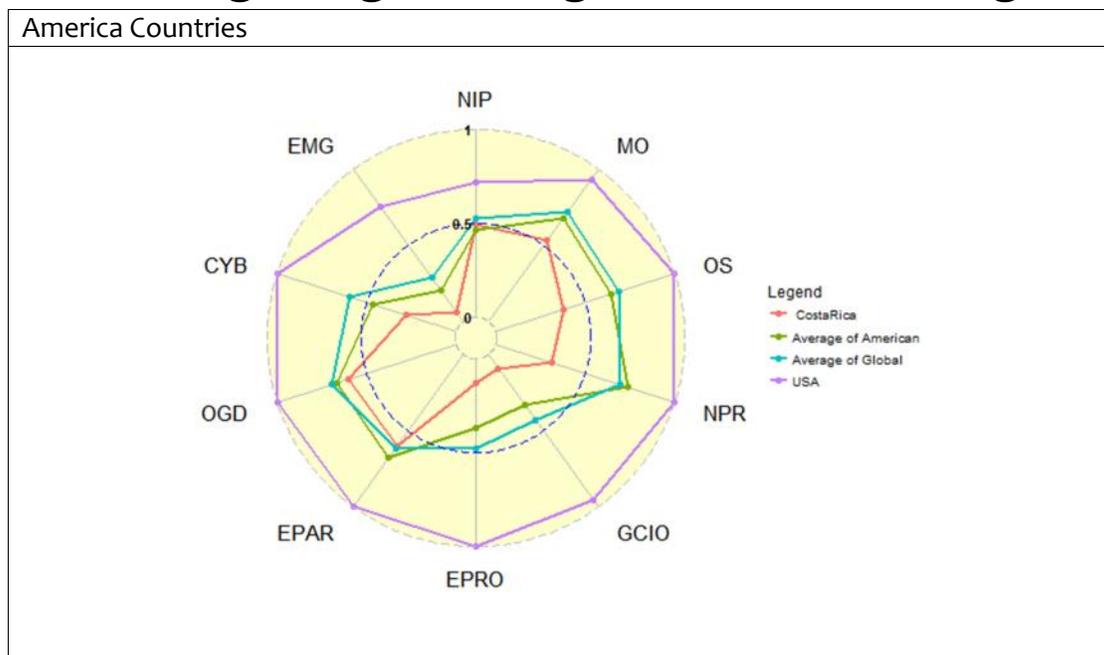
America Countries

Among America Countries, only Network Infrastructure Preparedness (NIP) indicators is above with the average score of America region. And Costa Rica is placed below USA, the best country in America region.

3 E-Government Development

The Costa Rican government is just finishing its Digital Government Master Plan 2011-2014. This plan was put into place after the previous Digital Government Action Plan 2008-2010. The country's digital government planning began in earnest with Executive Decree No. 33147-MP, issued in May 2006. This proposed that a plan to digitize the Costa Rican government be drafted and

Digital Government Master Plan 2011-2014

implemented with cooperated to South Korean Government. This master plan has the mission statement: "Improving the national competitiveness with environmental responsibility through providing transparent and high level services to the citizen based on interconnected government and ICT development".

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 49.4% of people in Estonia were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 10.4% have fixed-broadband subscriptions, and wired broadband subscription has reached 86.9%.

4.2 Management Optimization [MO]

The Costa Rican government is just finishing its Digital Government Master Plan 2011-2014. This plan was put into place after the previous Digital Government Action Plan 2008-2010. However, now, there is no evidence about the new version of ICT strategy or e-Government plan. In all, Costa Rica has achieved the haft score in Management Optimization domain.

4.3 Online Service [OS]

The score for Online Service is based on five investigating online services, i.e., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and their URL Address. All of those services were investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Costa Rica is only providing e-Procurement, e-One-Stop Service and e-Health. Among these Online Services, e-Health has the highest score, compare to other online services. The number of available e-Services continues to grow, but many of the designs operate using different platforms, and are not well-integrated. In terms of complexity level, most of Online Service in Costa Rica has reached only information provider in which user can start the find the information through the portal.

For measuring the level of convenience, the third party application result has shown that three portals are the same with the average considerably in terms of speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights.

Table 5 List of Online Services

Online Service	URL
e-Procurement	http://www.mer-link.co.cr/index.jsp
e-Tax	N.A
e-Customs	N.A
e-Health	https://registrelo.go.cr/
One-Stop Service	http://gob.go.cr/es/servicios-en-linea

4.4 National Portal [NPR]

The Costa Rican government's main portal site "http://gob.go.cr/es/" is only available in Spanish and is not compatible with most major translation services. It offers a great deal of links to information, services, and data, but many of the options take the form of long lists of links, rather than intuitive menus. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is below the average both from PC and from Mobile Device. However, the portal does not provide the user with some functionality such as searching, site map, and an inquiry form.

4.5 Government CIO [GCIO]

Alicia Avendaño Rivera has served as the Director of Digital Government since 2009, and this is the closest analogue to a CIO position in Costa Rica. The Director has administration over the three Digital Government divisions, Projects, Technology, and Digital Inclusion.

4.6 E-Government Promotion [EPRO]

The Costa Rican government's e-Governmente-Government promotion plan was laid out in its Digital Government Master Plan 2011-2014. The prior plan succeeded in establishing a base structure for e-Governmente-Government.

4.7 E-Participation [EPAR]

According to the United Nations E-Participation Index, Costa Rica is the leading country in Central American and 14th in the world for e-participation. This is a major improvement from 2005, in which they placed 90th. This indicates that the government's ICT initiatives have succeeded in making the population more connected, and providing a platform those appeals to users. For instance, parliament member has their website and provides the information to citizens that can contact with them.

4.8 Open Government Data [OGD]

The Technical Secretariat of Digital Government operates an open data site populated with data from Costa Rica's other online services, including Mer-link (public procurement), Controlpas (operated by the Ministry of Public Security), Register it (Ministry of Health), and CrearEmpresar

(National and Municipal Registry) among others. The database is powered by the U.S.-based open data platform Junar. However, the data is not yet as voluminous, standardized, or searchable as it could be. Also, data from previous years have not been uploaded.

4.9 Cyber Security [CYB]

As a member of the Organization of American States (OAS), Costa Rica approaches many cyber security issues in collaboration with fellow OAS member states. The OAS Inter-American Committee against Terrorism (CICTE) developed and passed the OAS-Cyber Security Strategy in 2004. Since then, OAS member states have collaborated on increasing cyber security in each country, and in the region. There are still significant weaknesses.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Costa Rica has the plan to implement Cloud Computing for Public Sector. However, the evidence shows that it is not officially launched. Other emerging technologies for government agencies are still nullity in Costa Rica.

5 Some Highlights

Costa Rica has the impressive point on E-Participation, Open Government Data and Management Optimization. According to the United Nations E-Participation Index, Costa Rica is the leading country in Central American. And this indicates that the government's ICT initiatives have succeeded in making the population more connected, and providing a platform that appeal to users. However, it is still low on E-Decision Making.

This year is the 2nd year of ranking; Costa Rica still has the weakness. The use of emerging technology and Government CIO are the weak point of Costa Rica. Director of Digital Government is the closest analogue to a CIO position in Costa Rica. The Director has administration over the three Digital Government divisions, Projects, Technology, and Digital Inclusion. And Costa Rica also has low score on Cyber Security. Even if Costa Rica is a member of the Organization of American States (OAS), Costa Rica approaches many cyber security issues in collaboration with fellow OAS member states.

Czech Republic

1 General Information

Area: 78,867 sq km
Population: 10,644,842
Government Type: parliamentary republic
GDP: 31,500$
Historical Ranking (2006-20016)
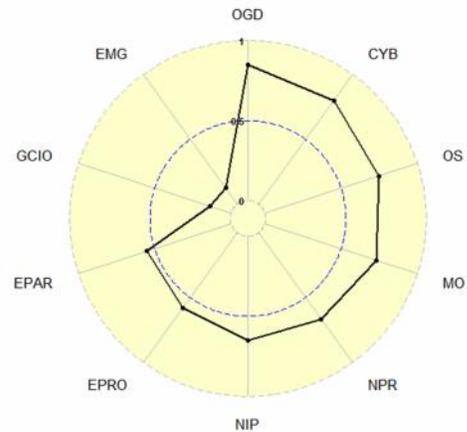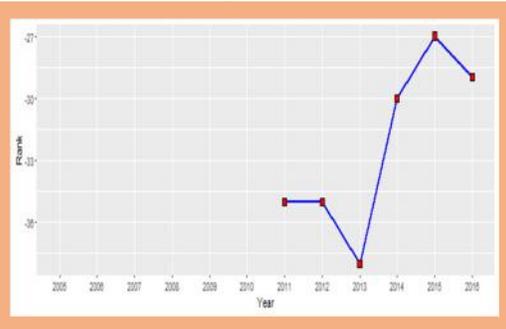
2 Positioning in a global organization and a region

OECD Countries	Europe Countries
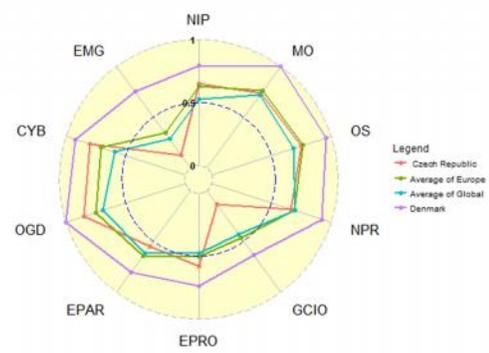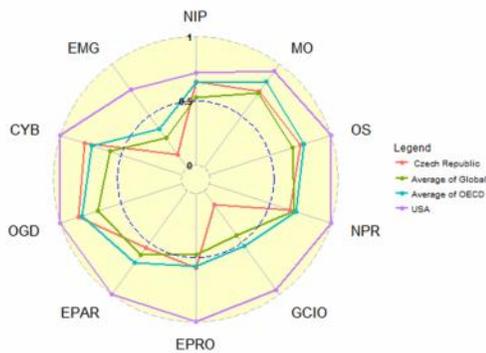
3 E-Government Development

Since the late 1990s, Czech Republic had strategic in promoting information technology, one of them known under the name "State Information Policy". This policy defined eight priority areas for the development of the information society, including e-Government and e-Democracy. This strategy can be considered as the first ICT project to promote e-Government services in Czech Republic. In 2006, the Czech government issued "State Information and Communication Policy" or "e-Czech". The main

objective of this project is to maximize the use of ICT by improving e-Government services, e-Procurement and e-Health. In 2007, e-Government concept was associate with the modernization of public administration. This project called "Smart Administration Strategy".

From 2008 to 2012, Czech published Strategy for the development of Information Society services for the period 2008 - 2012. This was a strategy for the development of services in an open, democratic society. The strategy divided into five program: (i) Basic registers and identification; (ii) Universal point of contact; (iii) Secure communications; (iv) Digitization of data archives; and (v) Personalized Information Society services.

The State Policy in Electronic Communications - 'Digital Czech Republic' was adopted in early 2011 and aims to assess the current overall status of accessibility and development in selected areas of electronic communications which have the greatest growth potential.

In 2014, Czech government introduced GeoInfoStrategy 2014 - 2020. The Strategy draft has been designed in a strong connection to other national strategic documents, i.e. the Strategy of international competitiveness of the Czech Republic for 2012-2020, the Czech Republic's National reform program, Strategic framework for the public administration development for 2014 -2020 and other key national strategic documents.

In 2015, the national government of the Czech Republic approved the Strategy for ICT Services Development in Public Administration. This document provides an updated overview of e-Government status in Czech Republic.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

The KIVS (Public Administration Communication Infrastructure) enables the interconnection of all Public Administration (PA) bodies (e.g. ministries, central administrations, regional authorities, municipal offices, labor offices, revenue authorities and public libraries), ensures secure and cost-efficient data and voice communications, as well as access to central information resources.

Czech POINT is a network of one-stop access points to e-Government services intended to prevent citizens from visiting several offices, thus significantly reducing excessive administrative burden.

4.2 Management Optimization [MO]

In the Czech Republic the issue of ICT is under the responsibility of two ministries. Electronic communications are under the responsibility of the Ministry of Industry and Trade URL: http://www.mpo.cz/en/e-comm-and-post/ and e-Government issues are under the responsibility of Ministry of Interior URL: http://www.mvcr.cz/mvcren/scope-of-activities-e-Government.aspx

The latest version of the National e-Government Development Strategy was published in the form of a government decision "Resolution of the Government of the Czech Republic 889/2015 to the further development of ICT services in public administration" from the November 2, 2015. URL (in Czech only): http://www.mvcr.cz/clanek/vestnik-vlady-pro-organy-kraju-a-organy-obci-717579.aspx; pages 206 – 228)

Another significant governmental material is a document, Digital Czech Republic v. 2.0 –The Way to the Digital Economy". This is a program of the state policy on electronic communications in the Czech Republic - material was published in May 2014.

4.3 Online Service [OS]

The Czech Republic has a centralized e-Procurement system based on a national platform managed by the Public Procurement and Public Private Partnership Department of the Ministry for Regional Development.

The Czech electronic health record (elektronická zdravotní knížka - EZK, in Czech) is a highly secure, free-of-charge summary of patient health information in electronic form, accessible 24 hours a day via the Internet and smartphones. It is a safe environment that links healthcare providers, patients and health insurers. It can be used to transmit and sharing in real time medical information between the doctor and patient or between different doctors. In the Czech Republic there is no alternative system of real time information sharing in this field. The two regions where the number of health records stored on the IZIP system is growing the most are Vysočina and Karlovy Vary.

4.4 National Portal [NPR]

In Czech, the public administration portal is developed by Ministry of Informatics. Citizens can access to (www.portal.gov.cz) for getting data, information or other publication from government. Beside the national portal, a local self-government portal (ePUSA) is an information system that contains an up-to-date database of self-government entities in the territory of the Czech Republic. The system enables the selection of required data according to different criteria.

Towns and Communities Online Portal (TCOP) is nationwide tele-democracy website, which support e-information exchange between local government and Czech citizens. Portal for data boxes was first launched in 2011. It provides a more comprehensive service to users of Data Boxes.

4.5 Government CIO [GCIO]

In the e-Government is in the ministry in charge (Ministry of Interior) responsible for the e-Government matters the Department of the e-Government in the section of Information and Communication Technologies. Each ministry has its own CIO, who is responsible for the (development) of ICT in the area of responsibility.

4.6 E-Government Promotion [EPRO]

The opportunities for greater engagement with citizens through e-Government channels will continue as the introduction of high speed broadband and the increased use of new communication technologies provide the Czech Government with greater flexibility in delivering better services to people, communities and business, as well as improved government operations. Significant increases in The Czech accessing the web via mobile phone or similar portable devices, and making phone calls over the Internet. There was also continuing growth in the use of social networking sites and SMS

4.7 E-Participation [EPAR]

The Czech government and ICT companies provide e-information, e-consultation services, forms, articles and resources about trends and issues related to citizens participation in government

democratic processes using the Internet, mobile communications, and other information and communications technologies.

The aim is to provide a one-stop shop for individuals and organizations to obtain information on, and communicate directly with, the Czech authorities. The Ministry as the site's administrator and Czech Post as the technical provider completely revamped the look and feel of the previous Public Administration Portal as well as its functioning, so as to make navigation easier, faster and more intuitive. The portal's target audience is made of: Czech citizens; foreigners living in the Czech Republic; entrepreneurs and businesses; public authorities.

4.8 Open Government Data [OGD]

A national data portal is available at http://opendata.cz/. It includes 73 datasets, which come from 1 organization. In government agencies, they have a local portal, to provide open data in each government agency (http://data.mfcr.cz/en). Most of the necessary data is produced from the tax payer's money. The data is even often available on the web. The Government of the Czech Republic fully supports attempts to remove regulatory and technical barriers to access to information and its goal is to enable the general public to share, combine and freely use the available data.

4.9 Cyber Security [CYB]

Czech National Security Authority Cyber Security was established according to the Decision n. 781/2011 of the Government of the Czech Republic. The name is National Cyber Security Centre (NCSC) and it's headquarter is in Brno. The main task of the NCSC is coordination of cooperation on both national and international level to prevent cybernetic attacks, to propose and adopt measures for incident solving and against ongoing attacks.

In 2015, the Director of the National Security Authority submitted to the government the new strategy with large focus on the national cyber security of the Czech Republic for the period of the upcoming five years and marks an important milestone for the Czech Republic in termss of cyber-security.

4.10 The use of Emerging ICT [EMG]

The Czech Republic works on consolidation of data centers of various government offices with the target to launch the government cloud.

5 Some Highlights

Compared to last year, this year Czech receives lower score in most of sub-indicator. Especially in Government CIO and Management Optimization. In most of questions to evaluate Government CIO, Czech Republic had no information to evaluate CIO and management optimization sub-indicator.

In 2015, Czech government introduced strategy for ICT Service development in public administration. The strategy focuses on national cyber security until 2020 and also introduces the idea to legislatively delegate to the Department of Chief architect of the e-Government at the Ministry of the Interior the role of "watchdog" to oversee the efficiency of public spending in public administration ICT area. The strategy includes a list of improvement opportunities that should lead to a better nation-wide governance of ICT services in public administrations.

In the e-Government is in the ministry in charge (Ministry of Interior) responsible for the e-Government matters the Department of the e-Government in the section of Information and Communication Technologies. Each ministry has its own CIO, who is responsible for the (development) of ICT in the area of responsibility.

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The Czech Republic works on consolidation of data centers of various government offices with the target to launch the government cloud.

Denmark

1 General Information

Area: 43,094 km^2
Population: 5,581,503
Government Type: Parliamentary Constitutional Monarchy
GDP: $45,800
Historical Ranking (2006-2016)

2 Positioning in a region

OECD Countries	Europe
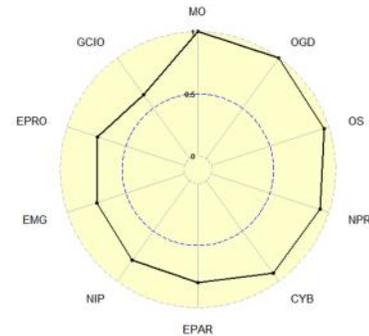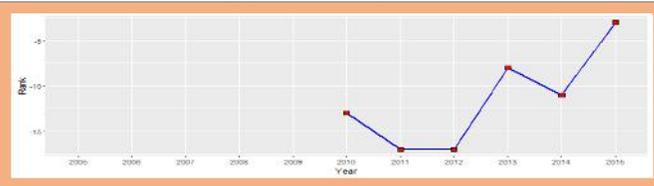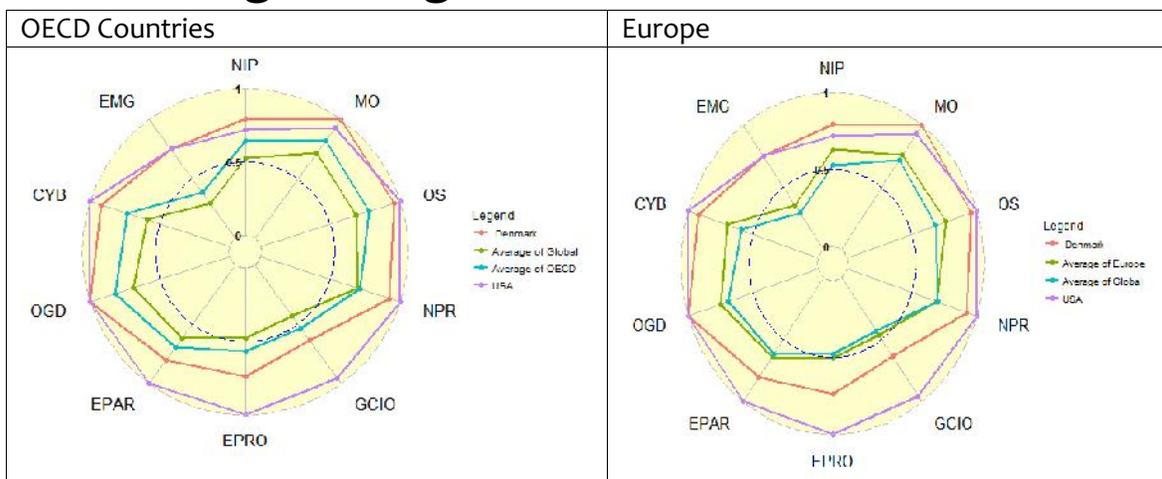
3 E-Government Development

Denmark has come a long way since it made the decision to establish a modern, robust digital infrastructure for the public sector. As part of its efforts on countering the digital divide, Denmark is promoting the enhanced accessibility of its public websites. Denmark's new mandatory digital mailbox is an intriguing development. It allows the government to communicate instantly and securely with businesses in an official manner. As part of its e-Inclusion efforts, public documents on the information society recognizes the needs of at risk (of exclusion) groups. The USO (Universal Service Obligation) in Denmark has provisions for a PC based text telephone service and access to the Internet. In the area of ICT and aging, Denmark has established drop-in centers for the elderly to learn new ICT skills.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

The current Danish e-Government strategy, published in August 2011, is entitled 'The Digital Path to Future Welfare: e-Government Strategy 2011-2015.' The strategy proposes that the central government, regions and municipalities cooperate in order to accelerate the adoption of digital solutions in the public sector. The report emphasizes that the government must capitalize on its leading position and continue to be a digital government leader well into the future.

4.2 Management Optimization [MO]

The strategy is divided into three main tracks, each covering a different area or theme:

1) No more Printed Forms or Letters

2) New Digital Welfare

3) Digital Solutions for Closer Public Sector Collaboration

According to the report, "the adoption of digital solutions and new technology will provide DKK 3 billion [about $500 million] every year by 2020 in gains." The national government has also passed a Digital Post law requiring all businesses to establish a digital mailbox address. This mailbox is of equivalent legal status to the physical mailbox, meaning that businesses have the responsibility to read all of their digital mail. This system allows the public sector to communicate with businesses and to send official notifications more efficiently, and it allows businesses a quick and secure channel to respond.

4.3 Online Service [OS]

Denmark has a healthcare portal, Sundhed.dk which was launched in December 2003 and was given a major update in 2012. The site is a public, Internet-based health portal that collects and distributes health care information among citizens and health care professionals. It is unique in bringing the entire Danish health care sector together on the Internet and providing an accessible setting for citizens and healthcare professionals to meet and efficiently exchange information. From the main portal, all Danish citizens have access to sundhed.dk and everyone has a personal page, which reflects the specific needs of the individual

4.4 National Portal [NPR]

The Danish national portal, Borger.dk was originally launched in 2007. The latest version of the site (version 3) was published in June 2012. Borger.dk (*borger* is Danish for 'citizen') is where Danish citizens can find all public information and self-service options on a one-stop basis. This is a single entry point to the public sector for all citizens. A single sign-on is made available for citizens to access services of different agencies without having to repeatedly log-on.

Denmark also has an official website, Denmark.dk, from which both citizens and non-citizens can access public information and services. The portal supports many foreign languages including English, Spanish, French, German, Chinese, Arabic and more. It also has SNS features on the homepage, such as Facebook, Twitter and Google Plus to enhance citizens' participation with blogs, and provides

information for foreigners who want to study and work in Denmark. Denmark also has a business portal which delivers fully digital public services for the benefit of companies. The portal includes more than 200 e-forms, some of which may be filled out and signed with an OCES signature.

4.5 Government CIO [GCIO]

While there are government CIOs at the national and ministry levels, information about CIOs at lower levels of government is not available. There is no single CIO position for the Danish government. However, the Steering Committee for Joint-Government Cooperation (STS) is responsible for coordinating e-Government initiatives throughout the public sector. This committee reports its findings twice each year. There is no current legislation regarding the CIO position in government

4.6 E-Government Promotion [EPRO]

Since 2001, municipalities and regional government have worked together on e-Government solutions to renew and rationalize the public sector. The new strategy sets clear and binding goals for e-Governmente-Government implementation of the e-Governmente-Government solutions established in recent years, which not only require a strong capacity for decentralized implementation capacity, but also demands a centrally focused coordination effort.

According to news from epractice.eu, the Danish Government, supported by the Local Governments Association (KL) and the Danish Regions has recently created a new public plan for the digitization of health care for 2013-2017. The strategy aims to create better cross-sector relationships and safe treatment based on the individual's resources and needs.

4.7 E-Participation [EPAR]

The Danish government's web portals demonstrate a developed understanding of e-participation. Information and services delivered online encourage a high level of social responsibility and accountability. For instance, the portal for citizens (borger.dk) functions as a national debate and voting portal enabling citizens at all levels of society to participate in debates and participate in polls and elections organized at the local, regional and national levels. Moreover the hosting of blog services creates the opportunity to comment on the Danish lifestyle and encourages foreigners to participate.

ROSTRA is an online system for public debate and expression of opinions through voting facilities based on the Danish Digital Signature. The tool is a part of the Danish citizens' portal developed by the Danish National IT and Telecom Agency. It functions as a national "debate and voting portal" allowing citizens, businesses, politicians and journalists to participate in debates and votes organized by levels of government, subject, etc. The tool can handle debates and votes at the local, regional and national levels and it is possible to confirm your identity through login with the Danish Digital Signature.

4.8 Open Government Data [OGD]

In 2012, the Danish Government presented its first National Action Plan for Open Government Partnership. The vast majority of the projects and initiatives have been implemented and several of them are taken forward and further developed in this OGP National Action Plan. The Danish OGP National Action Plan 2013-2014 was created with contributions from a public consultation where

citizens, companies, NGOs and public authorities were invited to propose initiatives and activities. The National Action Plan has been divided into five themes:

- Local democracy and participation
- Full digital communication - and inclusion
- New forms of collaboration and involvement
- Open data - innovation, transparency and enhanced efficiency
- The promotion of open government
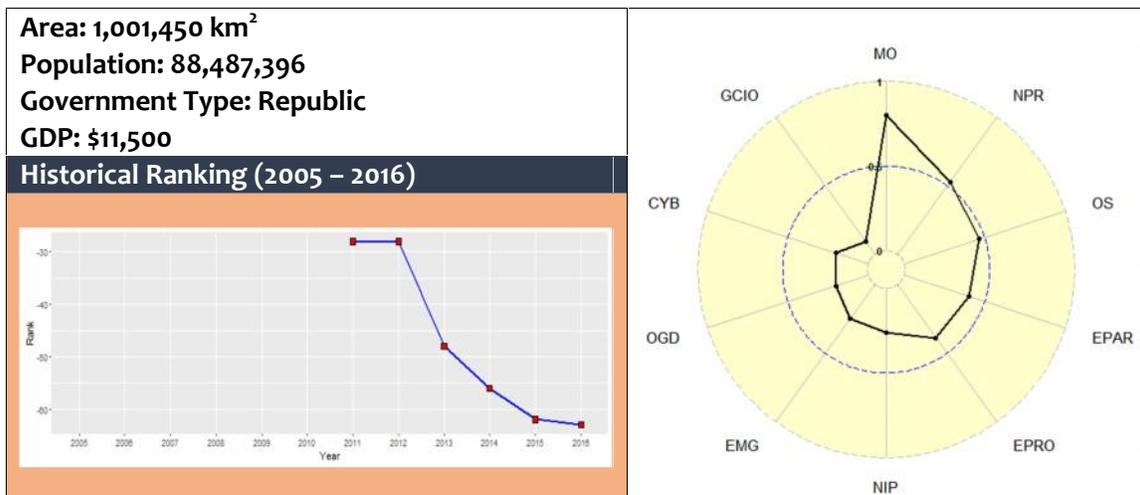
4.9 The use of Emerging ICT [EMG]

The Danish government has been using a domestic standard for information security called DS 484 for over a decade. As of January 2015, government institutions are required to abide by Information Security ISO/IEC 27001, an international standard. The Ministry of Finance's Agency for Digitization is tasked with enforcing this standard and "developing tools, templates, seminars and workshops to support [its] implementation and maintenance."
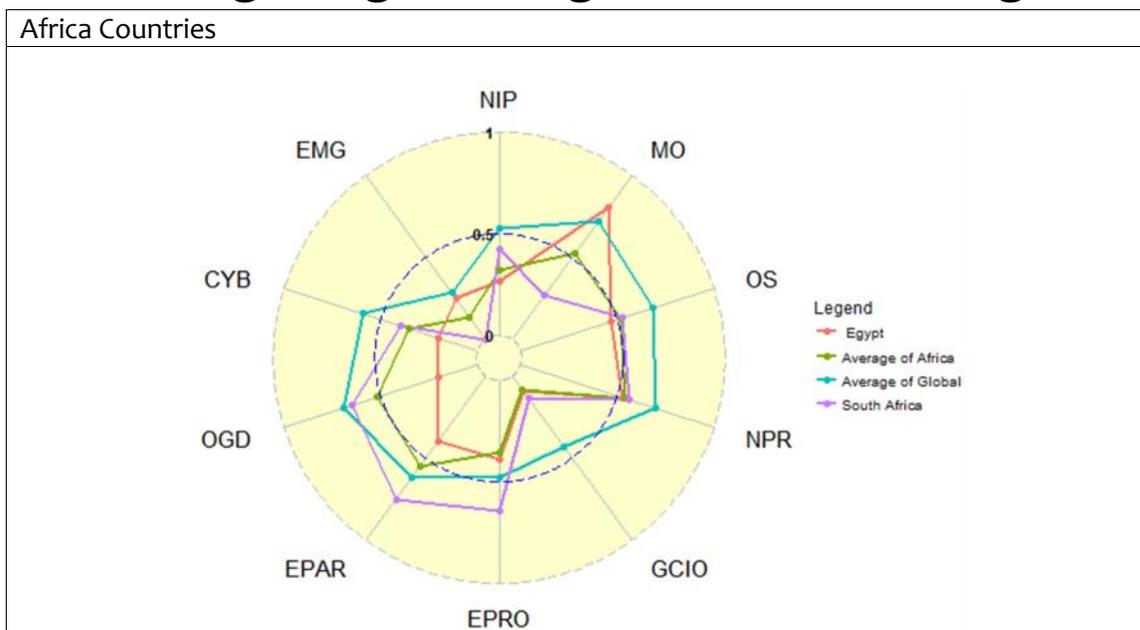
5 Some Highlights

Denmark has shown marked developments in e-Governmente-Government projects but there are few available resources on e-Government related promotions particularly at the local level. In 2005, the Danish authorities launched a large-scale communication campaign to raise citizens' awareness of e-Governmente-Government services. The OIO Committee for Architecture and Standards (OIO Committee) has a mandate to support the strategy to facilitate the work of e-Governmente-Government in the state, regions and municipalities, with particular emphasis on ensuring interoperability between IT systems across organizational boundaries. The government has released its e-Governmente-Government strategy 2011- 2015 on June 20, 2011 at the eGov Global Exchange in Singapore, even before reaching the Danish public, according to Lars Frelle-Petersen, Deputy Director General and Head of the Digital Task Force Agency for Governmental Management, Danish Finance Ministry. The government is thus looking at online services that are simpler and more effective. This will be achieved through four goals: 1) Phase out paper applications and regular mail 2) Help companies achieve higher growth rates 3) Bring 'welfare technologies' into public schools, hospitals, nursing homes, providing better welfare with more value for the money 4) Cooperate closely to digitize the public sector. Furthermore, to promote Internet use in Denmark, The Danish Public Welfare Technology Fund will allocate DKK 15 million to establish Internet hotspots in public places. Institutions for education, knowledge or culture can apply for funds to provide their users with free Internet access. The funds will be used to prioritize Internet connectivity and use. The government will also invest 500 million. DKK and municipalities will up to 1 billion. DKK tailoring teaching in public schools for future needs.

Egypt

1 General Information

Area: 1,001,450 km²
Population: 88,487,396
Government Type: Republic
GDP: $11,500

Historical Ranking (2005 – 2016)

## 2 Positioning in a global organization and a region

Africa Countries

Among Africa Countries, only Management Optimization (MO), e-Government Promotion (EPRO) and the use of Emerging Technologies for government (EMG) indicators are above with the average score of Africa region. In addition, the Management Optimization (MO) indicator of Egypt is better than those of South Africa, the best country in Africa region.

3 E-Government Development

In 1999, the Ministry for Communications and Information Technology (MCIT) was formed to build momentum to create an information society and to improve the information infrastructure. Shortly after its formation, the Ministry revealed the Egyptian National Communications and Information Technology Plan (NCITP). The NCITP has paved the road for launching the Egyptian Information Society Initiative (EISI). Although, Egypt's e-Government program was initiated in by the MCIT in 2000, the Ministry of State for Administrative Development (MSAD) took over the leading role in 2004. Egypt's e-Government was divided in to two stages. The first stage (2001-2007) incorporated setting and approving the government strategic plan, implementing and assessing pilot projects, and starting geographical and sectorial deployment of some projects. The second stage (2007-2012) aimed at expanding successful pilot projects on national level, and the development of government administrative body.

MCIT supports other ministries in facilitating e-Government programs and services as part of the Egyptian Information Society Initiative (EISI). In April 2013 MCIT launched today the Egypt's ICT Strategy 2013- 2017. MCIT future vision focuses on achieving the digital socio-economic development in Egypt: Prosperity, Freedom and Social Justice. Moreover, Digital Economy 2020 was announced with the vision for "Achieving the Digital Economy
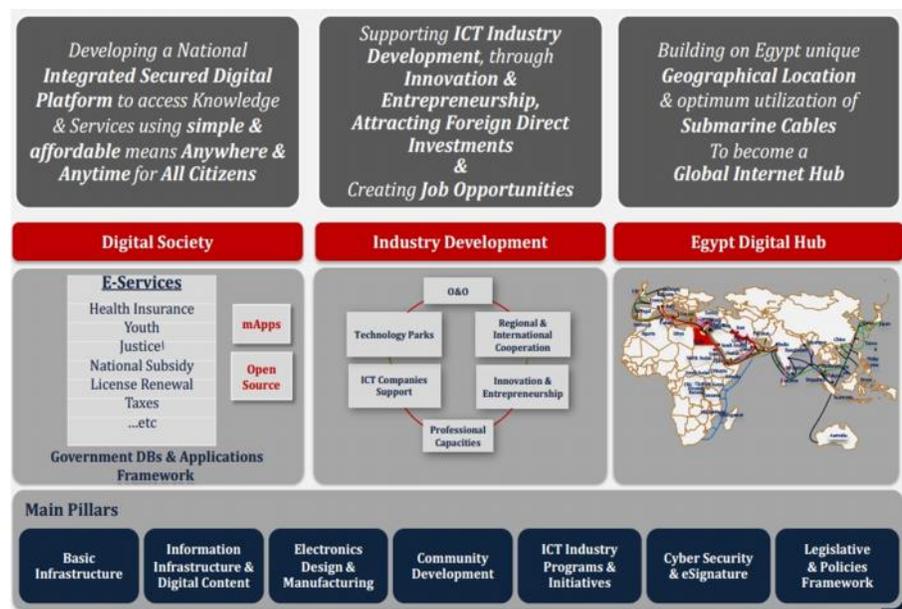
Objectives of Egypt's ICT Strategy 2013- 2017

through ICT to Provide Prosperity, Freedom and Social Equity for All". According with the Digital Economy 2020, Egypt's ICT 2020 Strategy was finalized, and focuses on three key objectives: the transformation of Egypt into a digital Society, the development of the ICT industry and the establishment of Egypt as a global digital hub. The goals of Egypt's ICT Strategy 2020 is to create a digital society allowing Egyptian citizen to use IT services and maintaining communications growth by attracting global companies, in addition to benefiting from the geographical location of Egypt and maritime cables in Suez Canal.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 31.7% of people in Estonia were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 3.7% have fixed-broadband subscriptions, and wired broadband subscription has reached 43.5%.

4.2 Management Optimization [MO]

In April 2013 MCIT launched today the Egypt's ICT Strategy 2013-2017 which has 4 Strategic Goals: 1) Supporting the Democratic Transition; 2) Promoting Digital Citizenship and Information Society; 3) Promoting Sustainable Development; and 4) Strengthening the National Economy. In addition, the Digital Economy 2020, Egypt's ICT 2020 Strategy was finalized. Its mission is to enable the development of a knowledge-based society and a strong digital economy relying on equitable and affordable access to knowledge; digital rights; and the development of a competitive, innovative national ICT industry.

Moreover, MCIT endeavors to promote the development of the ICT infrastructure and digital services of government entities, one of its key priorities. Activities on this track aim to enhance the performance of ministries and other government bodies – and to raise the quality and efficiency of the services they provide to the public – by improving the work environment, providing support for decision-making and finding solutions to issues of concern to the community. These efforts will boost local markets and raise demand for ICTs.

4.3 Online Service [OS]

The score for Online Service is based on five investigating online services, i.e., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and their URL Address. All of those services were investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. e-Procurement has the highest score, compare to other online services. The Egyptian government has made significant developments in termss of G2G services such as e-tender, geographical networks and ERP systems. In general, the lack of comprehensive legislative framework for e-Governmente-Government has slowed the development of some e-Services such as tax procedures, filling out and submitting official forms, and online tax payments. There is also a lack of policies and laws and citizens are most unlikely to use e-Governmente-Government services without a guarantee of protection of their privacy.

In terms of complexity level, most of Online Service in Egypt has reached the two ways interaction in which user can download and summit application from through the portal. In addition to that, only e-Procurement has implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

For measuring the level of convenience, the third party application result has shown that e-Procurement, e-Customs and e-Health are above the average considerably in terms of speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 6 List of Online Services

Online Service	URL
e-Procurement	https://etenders.gov.eg/en/index.php
e-Tax	http://www.incometax.gov.eg/
e-Customs	http://www.customs.gov.eg/
e-Health	http://mhealth.cu.edu.eg/
One-Stop Service	https://www.egypt.gov.eg/English/Home.aspx

4.4 National Portal [NPR]

Egyptian e-Governmente-Government portal "www.egypt.gov.eg" was inaugurated in January 2004 as Egypt's information portal. Through the national portal, e-contents industry encompasses the creation, design, management and distribution of digital products and services and the technologies that underpin these activities. E-Government portal demonstrates well-structured navigation and interface features. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is below average both from PC and from Mobile Device. However, the portal provides interactive features such as blog and polls. There is also a Live Support chatting feature for assistance. Besides national language of Arabic, much of the portal is available in English.

4.5 Government CIO [GCIO]

Regarding the CIO concept, the Egyptian public administration at the national and local levels does not appoint clear CIOs or equally influential positions within its legal framework. Nevertheless, it is observed that there is increasing concern on positioning of CIO equivalent executives with administrative body.

4.6 E-Government Promotion [EPRO]

Egypt's e-Governmente-Government initiatives pursue capacity-building and market maturity along with essential public-private partnerships. MCIT has implemented a number of programs with the chief aim of providing benefits to users, promoting computer literacy, and encouraging increased use of ICT by the public. In terms of assessment aspects of e-Government, the Egyptian Cabinet's Information and Decision Support Center (IDSC) stands as one of the distinguished Think Tanks in Egypt, particularly for the Cabinet. IDSC strives to enhance relations with different ministries and government authorities, and to open communication channels with the public to measure the society's attitudes towards national issues. IDSC also works on disseminating data and information, focusing on electronic dissemination.

4.7 E-Participation [EPAR]

In general, Egyptian government web sites demonstrate interactive functionality and good design, however in termss of participatory decision making processes or public discussions, national portal and other government web sites at national and local levels offer very limited public engagement. In the national portal and other government websites, users can follow and receive information through SNS such as Facebook and Twitter. Government leaders are also using ICT applications for management and operations.

4.8 Open Government Data [OGD]

Some Egyptian government entities share information when available, as also foreseen in the ad hoc legislation. However, there are still important challenges concerning the level of interoperability of the databases and the varying quality of data available. There is no evidence about the Egyptian government's efforts on developing open government or open data.

4.9 Cyber Security [CYB]

The Egyptian Computer Emergency Response Team (EG-CERT), established by the National Telecommunication Regulatory Authority in April 2009, provides 24-hour support to protect critical information infrastructure. In 2012, EG-CERT provided support to entities across the ICT, banking and government sectors, helping them tackle cybersecurity threats including denial of service attacks. Moreover, in the National ICT Strategy 2012 – 2017, the cyber security draft law has been mentioned as a document which "represents the biggest response possible to the requirements of civil society, taking into consideration national security dimensions, and corresponding with the most recent legislation of its kind in the world".

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies to evaluate this indicator. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Egypt has a strategy plan for cloud computing for the public sector according to Egypt's ICT 2020 Strategy. The Egyptian Government Cloud (EG-Cloud) Strategy seeks to improve the efficiency and performance of the government. MCIT has signed MOU with Telecom Egypt to provide cloud computing application services to private and public sector organizations in Egypt. However, the evidence shows that it is not officially launched. Other emerging technologies for government agencies are still nullity in Egypt.
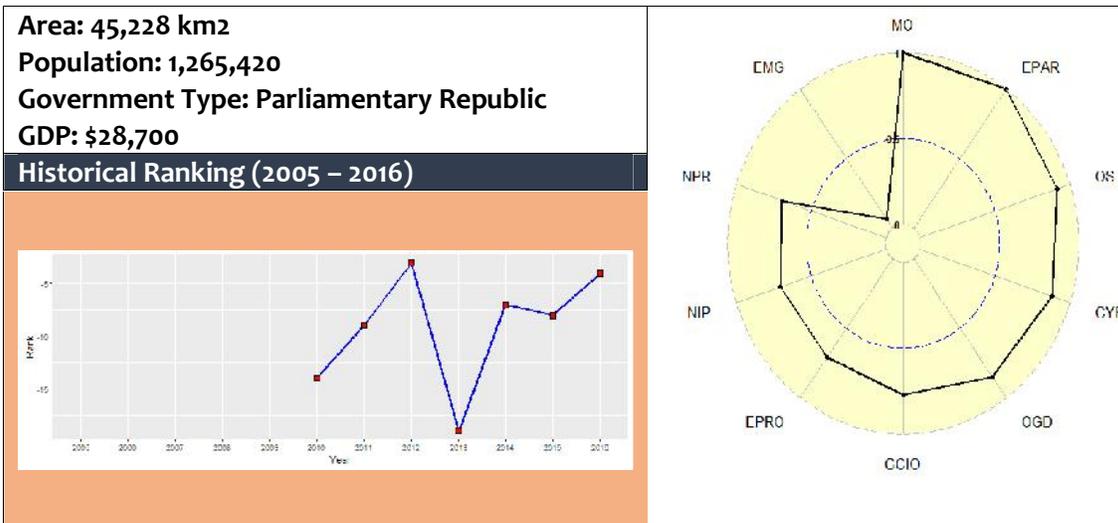
5   Some Highlights

Egypt has the impressive point on Management Optimization, National Portal, and Online Service. MCIT endeavors to promote the development of the ICT infrastructure and digital services of government entities, one of its key priorities. The project of e-Government is being executed by MCIT in cooperation with the MSAD, and will involve all the Egyptian Ministries and Government bodies. In addition, The Government of Egypt has also established several e-health programs to bring better diagnostic and health services to a wider segment of Egyptian society. The Ministry of Health & Population in cooperation with the MSAD and the Egyptian Government Portal provide the Doctors' Residency Enrollment service through WAP on mobile phones on "mhealthmob.cu.edu.eg" where you can enter 20 choices instead of 300 and complete registration in 2 steps instead of 3. Appointments with doctors, dentists, physiotherapists, pharmacists and nurses are available through the mobile phone.

On the other hand, Egypt still has Government CIO as the weakness and has low score with Open Government Data and Cybersecurity. Regarding the CIO concept, the Egyptian public administration at the national and local levels does not appoint clear CIOs or equally influential positions within its legal framework. Nevertheless, there is no evidence to show about Government CIO on Egypt's ICT Strategy 2020 too. Egyptian Open Data initiative was started, with government data is open to use and reuse to a limited extent only. However it is not clean with strategy.

In the opposite, Egypt has the high score with the use of emerging technology event if it is the new indicator for this year survey. Since 2011, MCIT has been considering the Cloud Computing model, decision was crated Egyptian Government Cloud (EG-Cloud) strategy that is one of Basic Infrastructure pillar of the Digital Economy 2020, with the vision to accelerate the government adoption of the cloud computing for superior performance, productivity and service delivery.

Estonia

1 General Information
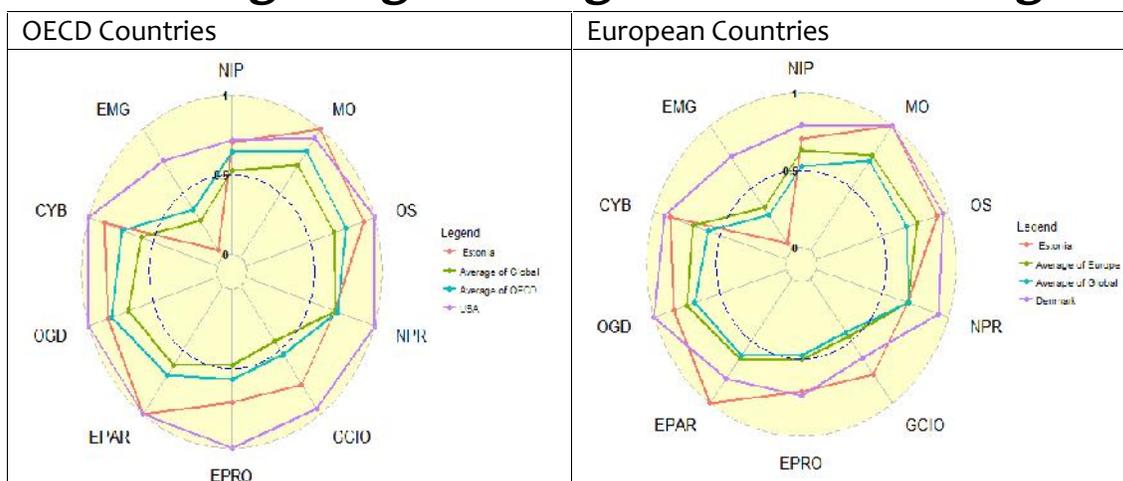
Area: 45,228 km2
Population: 1,265,420
Government Type: Parliamentary Republic
GDP: $28,700

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

OECD Countries	European Countries

Among OECD Countries, all indicators except the use of Emerging Technologies for government are above the average score of OECD members. The Management Optimization (MO) indicator for Estonia received a better score than that of United States, the best country in the global ranking and also in OECD.

Amongst European countries, Estonia is placed below Denmark. However, the e-Participation and Government CIO of Estonia are better than those of Denmark, the best country in Europe region.

3 E-Government Development

e-Government in Estonia has reached the connected stage. Since 2000, Estonia has implemented X-Road as the core of government information system integration. Using X-Road, public and private sector agencies can share their information, thus, enabling them to offer e-Services without redundancy. E-Tax system in Estonia is one of the online services utilize the presence of X-Road. Estonians enjoy the simple procedure for filling tax report in which they simply click four to six button for completing the procedure. It is not necessary to input the similar data time over time because the data is already there. Hence, everything is prefilled. Unless something is wrong, they do not need to fill anything.
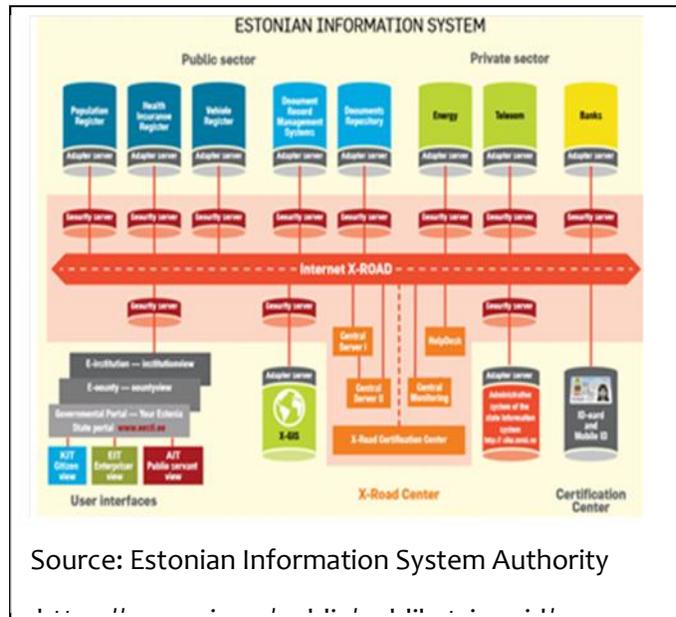
Source: Estonian Information System Authority

To expose the position of Estonia to become a world-class public e-Service, Estonia joined with the United Kingdom, South Korea, Israel, and New Zealand to establish a Digital 5 (D5) Cooperation. The first D5 Meeting was held in London in December 2014. Tallin hosted the second summit in November 2015.

Strong commitment to ICT is inherent in the part of the prime minister and senior government officers. Prime Minister chaired E-Estonia Council, which lead the making and execution of national digital agenda in the country.

4   By Indicators

4.1   Network Infrastructure Preparedness [NIP]

Approximately 84.2% of people in Estonia were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 27.4% have fixed-broadband subscriptions, and wired broadband subscription has reached 117.2%.

4.2   Management Optimization [MO]

In early 2014, Estonia has launched the Digital Agenda 2020. The ultimate goal of this agenda is not merely an ICT use in daily life and business. The current plan emphasizes the improving economic competitiveness, the well-being of people and the efficiency of public administration. Some priorities have been set on the agenda such as completing the next generation broadband network, generating greater control over personal data, and utilizing data analytics in public sectors.

In all, Estonia has fully achieved the maximum score in Management Optimization domain. Contribution from operationalization of X-Road is very significant in this area.

4.3   Online Service [OS]

The score for Online Service is based on five investigating online services, i.e., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e-One-Stop Service and e-Health have the lowest score, compare to other three online services.

In terms of complexity level, most of Online Service in Estonia has reached a transactional in which user can start the transaction from applying to receiving the service through the portal. In addition to that, all Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

For measuring the level of convenience, the third party application result has shown that three portals are above the average considerably in terms of speed. The other two portals, i.e., e-Health and One-Stop Service are slightly above the average. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 7 List of Online Services

Online Service	URL
e-Procurement	https://riigihanked.riik.ee
e-Tax	http://www.emta.ee
e-Customs	http://www.emta.ee
e-Health	https://www.eesti.ee/eng/teemad/kodanik/riigiportaali_abi
One-Stop Service	https://www.eesti.ee

4.4   National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of Estonia (http://estonia.eu) contains proper information for local citizens and foreigners. Information about Estonia is available on the portal. People can find information about culture and heritage, demographic, and government. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is above average both from PC and from Mobile Device. However, the portal does not provide the user with some functionalities such as searching, site map, and an inquiry form.

4.5   Government CIO [GCIO]

Estonia government has clearly defined the need of ICT leadership on e-Government. The Digital Agenda 2020 stated the role, the mandate, and the position of CIO in central and local authority. The agenda also mentioned the need to establish GCIO Network among them. In addition to that, to provide a formal education that focused on CIO Competency, Tallin University has opened CIO program as one of Master Degree program.

4.6 E-Government Promotion [EPRO]

The Digital Agenda 2020 covers all aspects of developing ICT in government. Not only the technical side but also managerial and awareness is mentioned on the document. The programs, initiatives, and funding for increasing the awareness on Digital Government have taken place. Some efforts regarding e-Government Promotion has been found during this research. E-Governance Academy has several awareness programs about utilizing ICT in Public Sector. As part of European Union (EU), Estonia gets some support from EU under the scheme ""Raising Public Awareness about the Information Society".

4.7 E-Participation [EPAR]

Culture and society in Estonia have been created as a high-tech society. These factors have driven Estonia to the next horizon of e-Government. Citizens and government can take the benefit of ICT in their daily life. For instance, parliament member has their website and provides the citizens with the alternative channel to communicate. The presence of e-participation portal (osale.ee) contributes to the high achievement of Estonia in this indicator.

4.8 Open Government Data [OGD]

In 2000, Estonia launched Public Information Act 2000 to participate in the Freedom of Information Act movement around the world. To strengthen the implementation of these act, Estonia has established Open Data Portal (http://pub.stat.ee) to provide public with government information. To keep the information up-to-date, Estonian government uses Data submission procedure through eSTAT system.

4.9 Cyber Security [CYB]

Estonia has ratified several laws related to cybersecurity. Some of them are as follow:

- State Secrets and Classified Information of Foreign States Act
- Public Information Act
- Personal Data Protection Act 2003
- Database Act 1997
- Information Society Act

In addition to these laws, Estonia has strengthened organization capacity for cybercrime countermeasure by setting up CERT-Estonia and give a mandate to Information System Authority (RIA) to exercise supervision over the continuous application of security measures in regards to the information systems used for the provision of vital services. Moreover, Estonian government decided to change the encryption method for Digital Identity code from RSA 1024bit to Ecliptic Curve Cryptography.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Estonia has attempted to implement Cloud Computing for Public Sector. However, the evidence shows that it is not officially launched. Other emerging technologies for government agencies are still nullity in Estonia.

5 Some Highlights

The operationalization of X-Road has brought the Management Optimization as the best indicators

Estonia Online Participation at http://www.osale.ee

for Estonia. X-Road enables secure Internet-based data exchange between the state's information systems. Not only state's information system but also private sector can take the benefits of X-Road. In addition to that, citizen uses X-Road seamlessly by using Citizen ID, due to the fact that interaction with government is considerably simple through Online Participation Portal. As a result, the e-Participation indicator for Estonia places the second best performer. The situation is similar to Online Service indicator that sets the third best performer.

Despite the excellent score on these three best indicators, Estonia still has weakness on utilizing the emerging ICT. Emerging ICT is the new indicator in the year 2106 ranking. Also, this new technology; Cloud Computing, Big Data, and IoT are still the new toy for government due to their concerns about security. Since many countries are still attempting to take the optimum benefit of emerging ICT, there are many rooms for improvement in this domain.
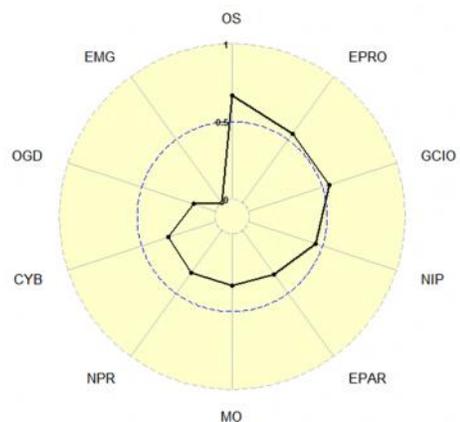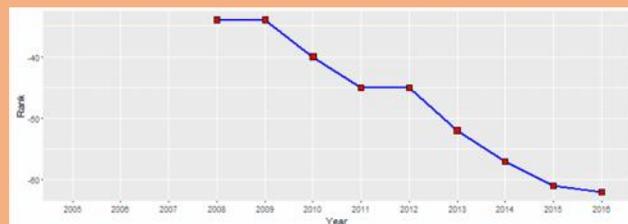
Fiji

1 General Information

Area: 18,274 sq km
Population: 909,389
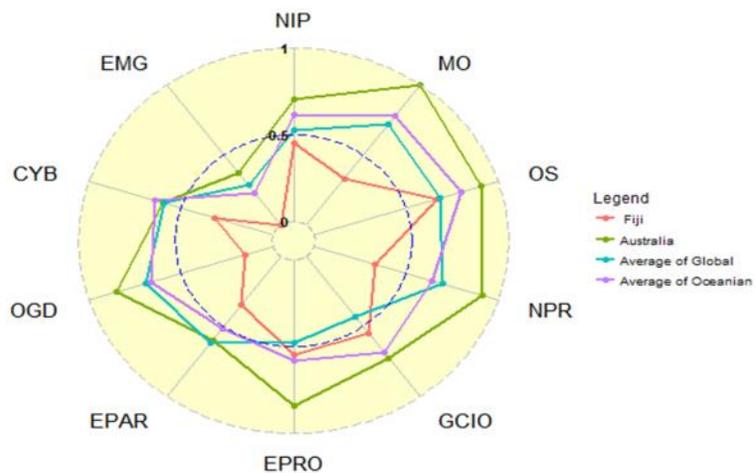**Government Type: Parliamentary republic**
GDP: $8,800
Historical Ranking (2006-20016)

2 Positioning in a region

Oceania Countries

3 E-Government Development

The e-Government program is the single most massive ICT project for the Fiji Government. With the Fiji government facing the challenge of using technologies to fundamentally transform government service delivery with a vision to provide citizen-centered and integrated. The following critical success factors or e-Government strategic thrusts are needed to achieve the national objectives: (i) Implement financially sustainable service delivery models; (ii) Reinvent services delivery model to provide citizen-centric outcomes; (iii) Enhance operational efficiencies within and across government agencies; and (iv) Enhance ICT skills competency of government employees at all levels.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 42% of people in Fiji were Internet users in 2015 and there is 54% have wireless broadband subscriptions, but only 1% of the population has a wired broadband connection. Fiji is island nation, so it is difficult in the deployment of ICT infrastructure to serve the development of e-Government.

4.2 Management Optimization [MO]

One of ITC Service's strategic priorities is to transform or re-engineer government services across all government agencies through the realization of the e-Government strategy. This holistic strategy adopts the three legged stool approach, focusing on People, Processes and Technology. In collaboration with other Government agencies, cooperate sectors, NGOs and other stakeholders, ITC Services will develop, promote, coordinate and support strategies that foster service excellence through the utilization of e-Government Application tools.

4.3 Online Service [OS]

E-Services online provides Government Services over the Internet. There are 3 Clusters in which the Government will provide services. These are: (i) G2G Cluster, This cluster focus on the exchanging of data between Government Ministries and Departments where necessary. These services are only available to government officers; (ii) G2B cluster: This cluster focus on providing Online Services to Investors and business that need approval from the concerned Government authorities. These services require free business user registrations and login; (iii) G2C cluster: This cluster focus on providing Government Services online to the Fiji Citizen. Where by citizen will be able to access and extract the required information from the Government Departments. Also citizen will be able to submit applications online to relevant authorities should the services is available online. These services require free citizen user registrations and login.

4.4 National Portal [NPR]

www.fiji.gov.fj is one of national portal. This portal together with one other government portal, egov.gov.fj, so called the citizen portal, collectively makes up the Fiji Government Online (FGOL) presence. The national portal demonstrates a consistent page layout and navigation with English as the main language used. There is also an option for users to easily increase the sizes of the letters or decrease them which very convenient for those with bad eyesight. There is a clear lack of citizens`

participation mechanisms such as blogs, polls and forums but citizens can access and follow the Government activities though Facebook through a link on the national portal services.

4.5 Government CIO [GCIO]

The Minister of Information was appointed to the position of CIO. Fiji National ICT Governance Structure comprises of a CIO Council which reports directly to the e-Government Steering Committee on all e-Government matters and is responsible for implementing the e-Government Master Plan at the agency level. However, there are further requirements to penetrate CIO concept within government.

4.6 E-Government Promotion [EPRO]

In Fiji, there are some private companies, which provide a holistic range of IT and communications engineering solutions to support our customers' business goals throughout their technology life-cycle.

4.7 E-Participation [EPAR]

In order for e-participation to develop there needs to be more improvements and efforts placed on infrastructure and capacity building. Fijian Government national portal still lacks features to confirm engagement of citizens in the decision making process.

4.8 Open Government Data [OGD]

Official Fiji Government website with information about departments, ministries, news briefs, and press releases, this portal is gateway to share information on e-health, e-tender system but nothing found on open government data.

4.9 Cyber Security [CYB]

The increased availability and use of computers in Fiji has led to a corresponding growth in international data transmission requirements. The cyber environment in Fiji includes licensed operators, telecoms, as well as the ISPs, TAF, Commerce Commission, and other organizations and is linked to an Internet ecosystem. One of the challenges in Fiji is that there is not sufficient awareness amongst stakeholders within the cyber-environment of the stakeholders within the Internet ecosystem and how each relates to each other.

4.10 The use of Emerging ICT [EMG]

There is no emerging ICT in Fiji

5 Some Highlights

In Fiji, the e-Government program involves three (3) main streams: Public Contact Center (PCC), Government Information Infrastructure (GII) and E-Applications. These 3 streams addresses the tasks of handling inquiries or complaints from the public, connection of government offices to the network and managing and developing various government online applications for the e-Governmente-Government SharePoint Framework respectively.

E-Services Fiji is one stop portal providing services to be delivered online on a real time basis to users be it citizens, visitors to Fiji, individuals / companies local or foreign setting up businesses in Fiji or Government department employees providing various services and performing various back office functions.

The users, based on the access rights granted, will have access to various services from a single services platform that are required to perform various activities in the day to day life of the user.

Finland

1 General Information

Area: 338,145 km²
Population: 5,476,922
Government Type: republic
GDP: $41,200

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

OECD Countries	EUROPEAN Countries
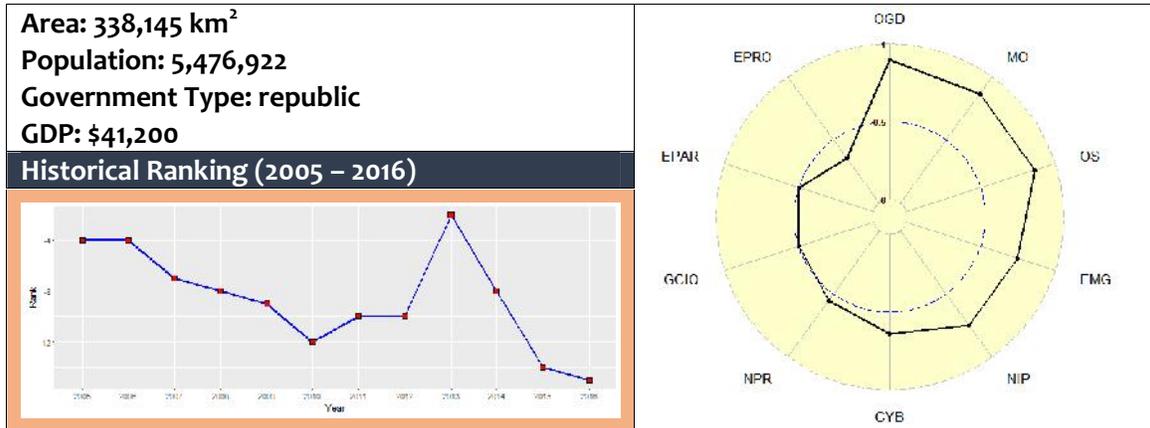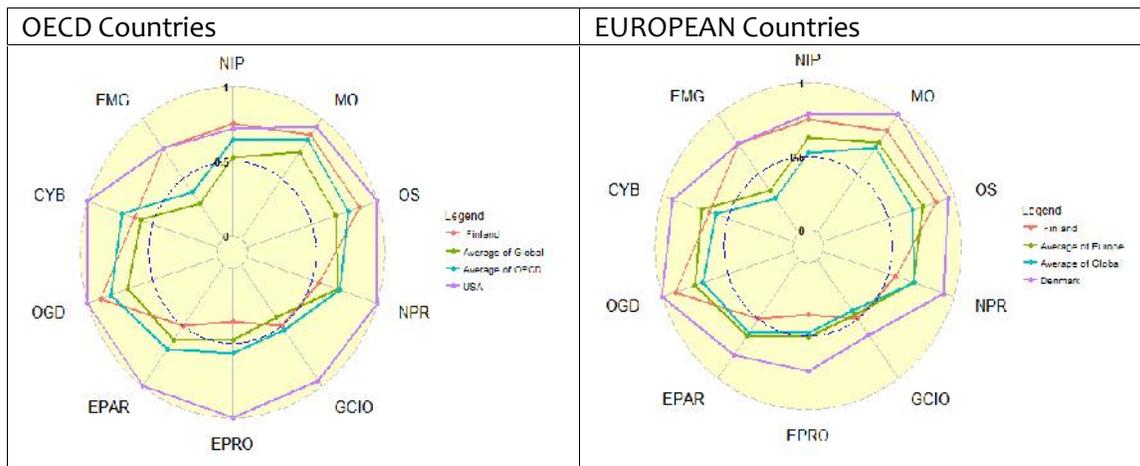
Among OECD countries, Finland scores lower than the average in National Portal, Government CIO, E-Government Promotion and E-Participation. Similar result was observed in the comparison Finland with other countries in European when Finland has surpassed the region's average in most of indicators except these aforementioned ones.

3 E-Government Development

Finland has one of the highest broadband penetration rates in Europe. Finland is also one of the early adopters of e-Governmente-Government initiatives within the OECD, and has achieved impressive results based on international comparisons. (OECD, 2010). In Finland, in responsible for e-Governmente-Government, information society portfolio and participation policy are collaborated

across three ministries – the Ministry of Transport and Communications; the Ministry of Finance and the Ministry of Justice. The Ministry of Finance has central policymaking responsibilities for public administration reform and development of general ICT and e-Governmente-Government strategies. Within these responsibilities, Public Sector ICT dep., as part of the Ministry, is leading the overall e-Governmente-Government development, e.g. by promoting cooperation between central and local government on common information management, formulating common functional and technical solutions and methods, and developing information and data security in public administration.
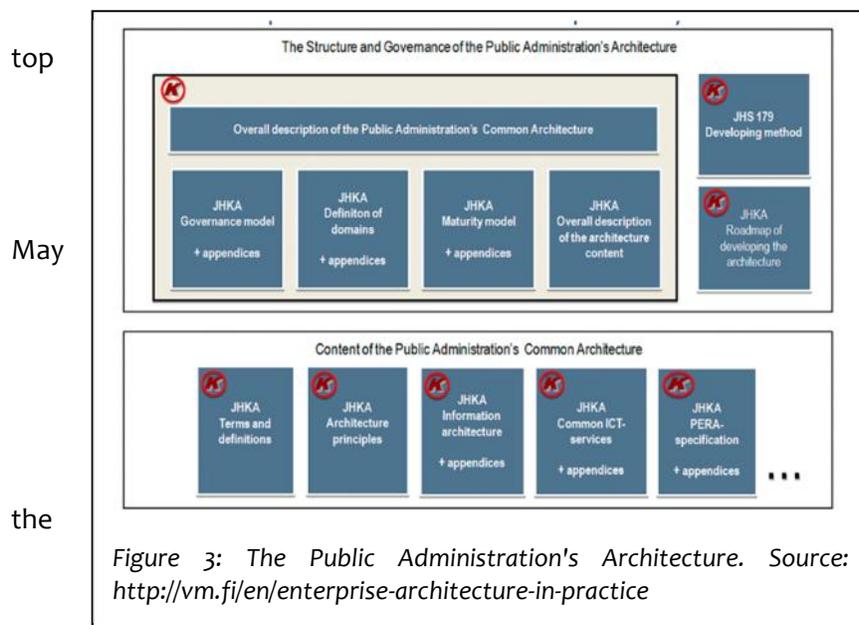
In order to maximize the cooperation among government bodies, Finland established the Ubiquitous Information Society Advisory Board which involved of representatives from major ministries, agencies, business and academicians and headed by the Minister of Transport and Communication.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

There are more than 90% of people in Finland were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). Among them, only 32.3% have a fixed-broadband connection while the portion of the total population has a wireless subscription is 138%.

4.2 Management Optimization [MO]

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Figure 3: The Public Administration's Architecture. Source: http://vm.fi/en/enterprise-architecture-in-practice

Digitalization become the priority in Finnish Government's agenda, marking by the announcement of the Government Programme in 2015, which specifies that public services should be developed primarily as digital11. In the efforts of accelerating e-Services provision, Finland adopted Estonia's X-Road system, data exchange layer which provides a standardized method to exchange information and data among public sector organizations and connect different national datasets.

The Ministry of Finance has launched The National Architecture for Digital Services which is considered as a compatible infrastructure for facilitating information exchange between

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11   https://joinup.ec.europa.eu/sites/default/files/ckeditor_files/files/eGovernmnent%20in%20Finland%20-%20February%202016%20-%2018_00%20-%20v2_00.pdf

organizations and services. The programme consists of several components such as: "a national data exchange layer, the shared service views required by citizens, companies and authorities, a new national e-identification model and national solutions for the administration of roles and authorizations for organizations and individuals"[12].

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience.

For e-Procurement, due to the highly decentralization in Finland, e-Procurement initiatives were not provided on a single national platform. Information on public tendering however is provided via Hilma service (https://www.hankintailmoitukset.fi/fi/). Tax and Customs are the two services reaching the highest complexity level, with various security mechanisms are fully implemented.

To measure the level of convenience, the Google PageSpeed™ Insight's result has showed that all services are operating well at reasonable speed. Proper guidance and customer services were provided for citizens.

Table 8 List of Online Services

Online Service	URL
e-Procurement	https://www.hankintailmoitukset.fi/fi/
e-Tax	http://www.vero.fi/en-US
e-Customs	http://www.tulli.fi/
e-Health	http://www.kanta.fi
One-Stop Service	Suomi.fi

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. Finland's national portal (http://finland.fi/) was designed in the blog style, with articles being categorized into different topics (culture, life style, politics, and so on). There are different social networks integrated with the portal. However, this portal does not include the information about Government, although there is a link to Suomi.fi where government's services are provided. Regarding technical aspects, the portal operates well with different browsers and devices, with acceptable loading speed (according to Google Speed Test result).

4.5 Government CIO [GCIO]

Each ministry and government agency has its own chief information officer, although the formal title and precise job description may vary. There is no law mandating the presence of CIOs in each ministry and government agencies but the CIO position is decided based on each organization's own internal process.

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[12] http://vm.fi/en/national-architecture-for-digital-services

The mandate and role of CIOs are currently changing, particularly at the ministerial level. In the past, they have been responsible for all the ICT technology within their own organization. Nowadays, due to the fact that infrastructure services (or sector-independent ICT services) are provided by a Government ICT Centre Valtori (established in 2014), the operative tasks of CIO are decreasing and the mandate is becoming more strategic oriented. The most important tasks in this new role includes designing and managing enterprise architecture, defining ICT strategy and information and cyber security strategy. It should be noted, however, that this changing role of CIOs in government agencies are still transition process which may take few years.

4.6 E-Government Promotion [EPRO]

The Ministry of Finance plays perhaps the most important role in the horizontal co-ordination of e-Governmente-Government. It has a central policy-making function and helps the government to translate its vision and principles into effective guidelines and related e-Governmente-Government strategies.

At the national level, the Association of Finnish Local and Regional Authorities (AFLRA) plays a major role in representing the interests and perspective of local government partners. The Association of Finnish Local and Regional Authorities seeks to promote the opportunities of the local government sector to make efficient use of ICT.

According to the Act on Information Management Governance in Public Administration, major central government IT projects (projects costing over EUR 5 million) shall be reviewed by the Ministry of Finance before the investment decision is made. This review process ensures that major IT projects are compatible with overall enterprise architecture and thus meet state wide interoperability requirements. Cost-benefit analysis (business case) is also required.

The National Audit Office occasionally scrutinize and reviews selected IT projects. These reviews, however, are completely up to the NAO that what, when and to what extent it wish review and scrutinize government's reform programmes (including IT) or single IT projects.

At agency or project level each government agency is responsible of evaluating its own projects. Ministry of Finance recommends usage of a common evaluation framework for projects costing more than 1 million euros.

4.7 E-Participation [EPAR]

Several initiatives were established to facilitate the interacting between citizens and government. This enables citizens to participate in various government activities. For example:

- Public consultation: lausuntopalvelu.fi;

- Questionnaires, polls: otakantaa.fi;

- Citizen initiatives: kansalaisaloite.fi

These initiatives are the components of the e-participation environment project 2010-2014, which is a part of the Ministry of Finance's Action Programme on e-Democracy and e-Services.

4.8   Open Government Data [OGD]

Regarding Open Government, Finnish Government has cooperated with other Nordic countries such as Denmark, Sweden and Norway to share their open data strategies and promote for opening up data.

Led by the Ministry of Finance, the Open data Programme – 17 May 2013 to 30 June 2015 – was eliminating obstacles to the re-use of public data as well as creating the preconditions for open data within the public administration. The Open data policy for 2015 – 2020 covers the proposals of the programme for the key goals and actions in the field of open data in the public administration in Finland.

4.9   Cyber Security [CYB]

The Government of Finland released its Cyber Security Strategy as a Government Resolution in 2013[13], defining vision and the key objectives of the government for protecting society and its vital functions against cyber threats. Finnish Government took a further step in securing government network by introducing the Act on the Government security network which came into force early 2015. By doing this the communication of state administration's leaderships could be secured in all situation14.

The Ministry of Finance is responsible for the steering and development of the state's information security. The Security Committee was established on February 2013 with the role to is to assist the Government and ministries in matters relating to comprehensive security. There is also an incident response team called VIRT (Virtual Incident Response Team) which is a governmental network consists of 50 cyber security professionals, with the duties are to plan and prepare co-operation and responses to major cyber security incidents encountered by the Finnish Government agencies.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT).

Internet of Things was mentioned in the new Government Programme as a key project to coordinate the ministries' activities. This will be a joint effort by businesses and the public sectors in order to "create a favorable operating environment for digital services and new business models"[15]. An implementation plan for leveraging big data and for piloting My Data will be drawn up (based on the Big Data Strategy of the Ministry of Transport and Communications, 8/2014).

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[13] http://www.yhteiskunnanturvallisuus.fi/en/materials

[14]

https://joinup.ec.europa.eu/sites/default/files/ckeditor_files/files/eGovernmnent%20in%20Finland%20-%20February%202016%20-%2018_00%20-%20v2_00.pdf

[15]

http://valtioneuvosto.fi/documents/10616/1986338/Action+plan+for+the+implementation+Strategic+Government+Programme+EN.pdf

5 Some Highlights

In Finland, the new appointed government - Sipilä's Government – has published its Government Programme, focusing on overarching reforms with five strategic priorities and 26 key projects. Among these, digitalization is a cross-cutting theme which is appeared in almost of the key projects of the Government. These efforts contribute to the increase of Finland's score on Management Optimization and Online Services this year.

Being one of the most developed information societies who's functioning heavily relies on digitalized networks and services, Finland has already been the target of various types of cyber threats. That explains why Finland is giving high priority to information security, however until 2013, the first national Cyber Security Strategy was published as a Government Resolution.

With an advanced e-Governmente-Government development level, the e-Governmente-Government promotion activities of Finnish Government are no longer surrounded the matter of citizens' awareness. Instead, the target is focusing on how to improve users' experience with government digital services due to the increase in citizens' expectation.

More attentions need to be paid to the utilizing of emerging technology such as Internet of things or big data within government agencies.

France

1 General Information

Area: 643,801 km²
Population: 66,553,766
Government Type: Republic
GDP: $41,400

Historical Ranking (2005 – 2016)
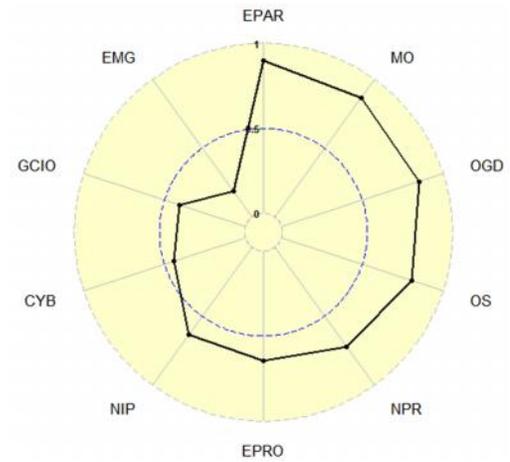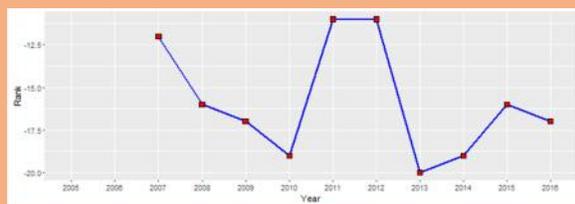
2 Positioning in a global organization and a region

OECD Countries	European Countries
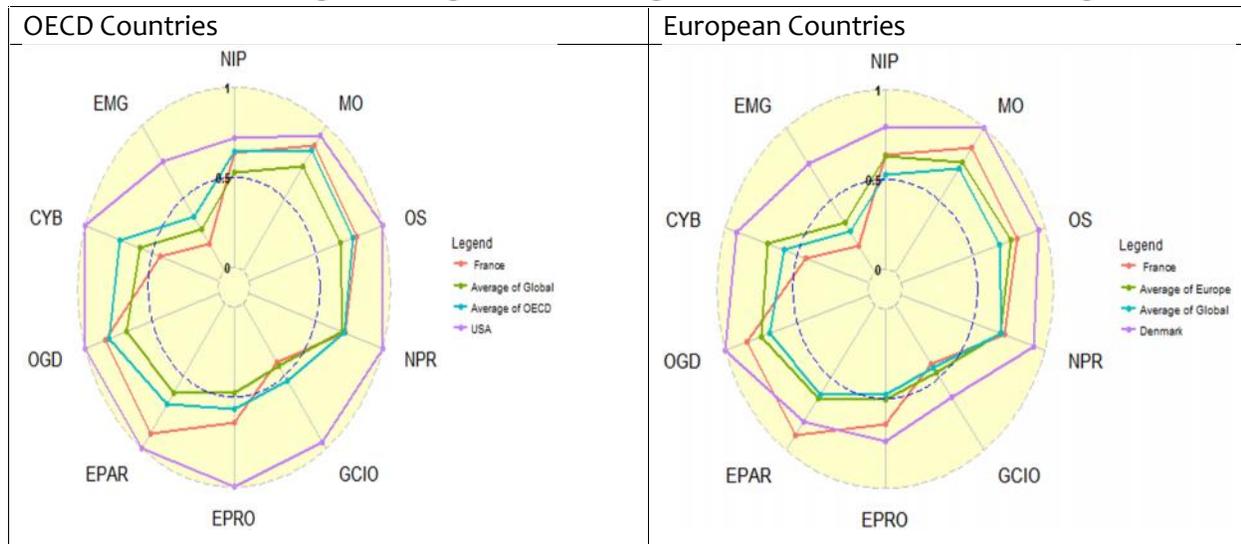
Among OECD Countries, all indicators except GCIO, Cybersecurity (CYB) and the use of Emerging Technologies for government (EMG) indicators are above or same with the average score of OECD members. Amongst European countries, France is placed below Denmark. However, the e-Participation (EPAR) indicator of France is better than those of Denmark, the best country in Europe region.

3 E-Government Development

In France, there was a development plan called the "Digital Economy by 2012". This was France's national e-Governmente-Government strategy aiming to make France a digital nation by 2012. The plan was comprised of 150 actions centering on four major priorities 1) access to all digital networks and services 2) production and supply of digital contents 3) diversification of digital services and 4) governance modernization of digital economy. And On November 2011, the Minister of Industry, Energy and the Digital Economy presented the results and prospects of the "Digital France Plan 2012-2020", with 57 new priority targets to develop the digital economy by 2020.
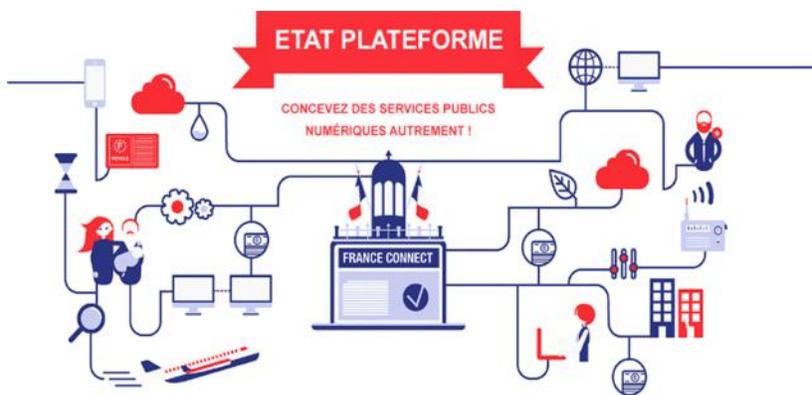
The Inter Ministerial Directorate for Information Systems is building the foundations of the "ETAT PLATEFORME" (State platform), an architecture supporting the creation of a new kind of digital public services. This strategy of transforming the state information system presupposes that the administration itself needs to

State platform

bring together the various data of the user necessary for its purposes, and offers in return almost ready-to-use services. It deals with services centered on its needs, and not from the organizational carving of administrative structures. The main principles of the State platform are the opening of API by large public providers of data, the flow of data between administrations, and the flow control by users through France Connect. Open up data for exchange between agencies, but give end users control over how information of a confidential nature is exchanged, such as personal data. Besides France Connect, the platform will offer other State resources. Including a store to reference the available APIs, the type of data that covers and related service contracts. A blacksmith will also be available to developers to encourage the reuse of software components required for the construction services. Finally, the General Repository for Interoperability and Architecture Framework of the State Platform API will enable developers to rely on the same exchange protocols.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 83.8% of people in Switzerland were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 40% have fixed-broadband subscriptions, and wired broadband subscription has reach 66.2%.

4.2 Management Optimization [MO]

The National e-Government strategy of France "Government as a platform" is led by Prime Minister's services on the behalf of the Ministry for State Reform and the Ministry for Digital economy. And on February 2013, the government presented its Roadmap for the Digital Economy. This strategy

revolves around three pillars, which are to 'Provide opportunities for youth', 'Reinforce competiveness', and 'Promote our values in society'.

4.3   Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e-Procurement, e-Tax, e-Customs and One-Stop Service are the best performer among five online services. Furthermore, there are various fully transactional e-Services provided in France. Users can file taxes, search for jobs, apply for social benefits, register vehicles, request certificates, and access many other services by searching as category.

In terms of complexity level, all online services have reach interaction level where the citizen can obtain the service without necessarily visit to the government office. Initial stage of interaction with government through the portal. In addition to that, all Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

To measure the level of convenience, the third party application result has showed that all five online service portals are above the average considerably in terms of speed. E-Procurement and e-Health (personal medical account - 'dossier médical personnel': DMP) are the only portal that scored about the same with average. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights.

Table 9 List of Online Services

Online Service	URL
e-Procurement	https://www.marches-publics.gouv.fr/
e-Tax	http://www.impots.gouv.fr/
e-Customs	https://pro.douane.gouv.fr/
e-Health	https://mondmp1.dmp.gouv.fr/login
One-Stop Service	https://www.service-public.fr/

4.4   National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of France "https://www.service-public.fr/" contains proper information for citizens. Information about France is available on the portal, and there is other government portal "http://www.gouvernement.fr/" that provide many government information and service. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is well on PC but it is about average on from Mobile Device. However, from the user experience aspect, this website is tremendous.

4.5 Government CIO [GCIO]

There are also other established organizations responsible for e-Governmente-Government policy/strategy development and coordination: The Council for the Modernization of Public Policies (CMPP) and the Directorate-General for State Modernization (DGME). The members of the council and the directorates carry out e-Governmente-Government responsibilities in an in termsinisterial/departmental setting.

Henri Verdier, the Head of the Interdepartmental Agency for Digital Projects and Information System of the Government (Direction in termsinistérielle du numérique et du système d'information et de communication de l'Etat, DINSIC) - is at the same time GCIO, Governement Chief Digital Officer and Government Chief Data Officer. He is in charge of the Information System of the Government and the chairman of the interdepartmental committee of ministries' permanent secretaries and departmental GCIOs.

4.6 E-Government Promotion [EPRO]

France is committed to making the country a major digital power through e-Governmente-Government promotion. Various mechanisms are being strengthened to boost development such as laws and legislation, plans and strategies, public and private collaborations, and transforming to electronic administration.

4.7 E-Participation [EPAR]

The official French website for e-participation is "http://www.gouvernement.fr/". This e-participation promotes French citizens to get online and 'e-democracy' is aimed at involving the citizen and hearing their voices in major areas of democratic governance. And it can follow the government action which the progress and any related to its. Political and ideological debates are opened online to the citizens, which serve as a dialogue avenue with political officials. More ever there are have personal information and contract for each parliament member that citizen can write an opinion, and also see more information about public meeting for each parliament activity.

4.8 Open Government Data [OGD]

France has released the beta version of its open government data website, "http://data.gouv.fr/". Following the wave of open government data portals around the world and the Commission's Open Data Strategy the French open data portal data.gouv.fr is one step towards a new governance model which aims to be more open, participative and Internet-driven. France became the first country to appoint a national Chief Data Officer (Administrateur général des données - AGD).

4.9 Cyber Security [CYB]

To meet the growing challenges posed by cyber-attacks and in light of the recommendations made in the White Paper on Defense and National Security, the French Network and Information Security Agency (ANSSI) was set up in July 2009. ANSSI is an interdepartmental agency operating under the authority of the Prime Minister. And On Friday 16 October the Prime Minister outlined the French National Digital Security Strategy, designed to support the digital transition in French society.

As part of the reinforcement of cyber defense capabilities at the Ministry of Defense, the post of Cyber Defense General Officer was created in 2011, with responsibility for coordinating the Ministry's

cyber defense activities and acting as the main interface in the event of a cyber-crisis. The Ministry of Foreign Affairs ensures the consistency of French positions on cyber security within the various international organizations and supports the development of international collaboration to address this issue.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Government of France issued the "Guide to Cloud Computing" that guide government use the Cloud Computing that is one of enterprise architecture of e-Government. For example; Interdepartmental Agency for Digital Projects and Information System of the Government (DINSIC) and Interdepartmental Purchasing Department (DAE) purchase cloud computing solutions for all departments. And Etalab team (part of DINSIC) have been employing data scientists for 2 years to develop predictive analytics use cases of big data.

5 Some Highlights

Among ten indicators in the current ranking, the E-Participation, Management Optimization, Open Government Data and Online service are the best among other indicators in e-Government France. And also National Portal score is high, with "http://legifrance.gouv.fr/" and "http://vie-publique.fr/" gives citizens to legal texts and knowledge about the public policies. France's national portal, gouvernement.fr, provides a gateway for users to access government information easily. The portal is divided into four main pages with the main page, Prime Minister page, government page and news page. The national portal of France also provides the online forms and services and connection to mon.servicespublic.fr. The portal also provides several media contents including videos, audios and photo galleries. There is also help functions to guide users' browsing experience. The portal also indicates the current location of the pages to help user identify their current location. The main aim of the portal is to simplify routine relation between government and citizens.

The weak point in France is about Government CIO and the use of emerging ICT. On 24th September 2015, the nomination of Henri Verdier for the new CIO of French was officially announced, he is at the same time GCIO, Government Chief Digital Officer and Government Chief Data Officer. And the use of Cloud Computing on government should be increase after "Guide to Cloud Computing" was progress.

Georgia

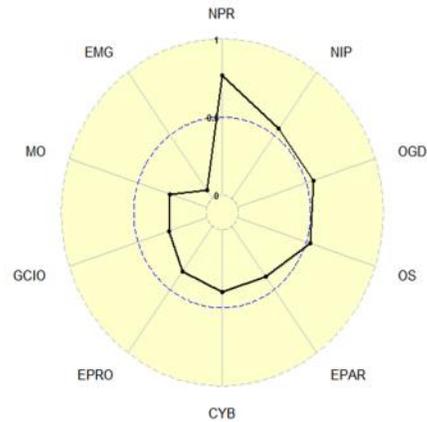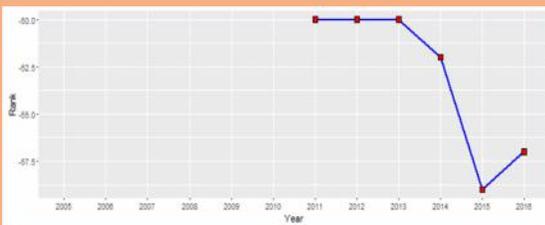## 1 General Information

Area: 69,700 sq km
Population: 4,931,226
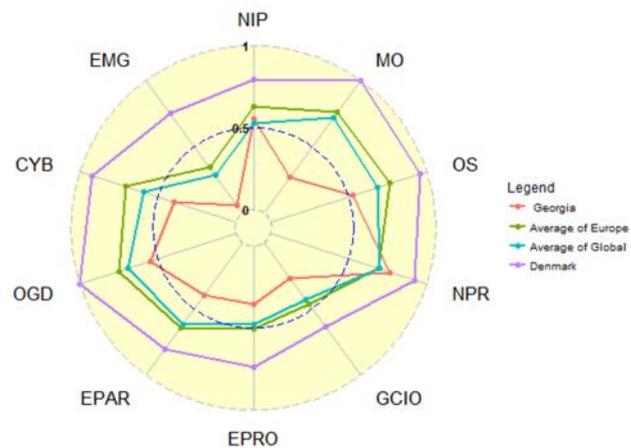**Government Type: Semi-presidential republic**
GDP: $9,500
Historical Ranking (2006-20016)

2 Positioning in a global organization and a region

Europe Countries

3 E-Government Development

During the processes of evaluation, Most of e-Governmente-Government services such as: E-tender, Social Security Services, Civil Registration Services, Consular Services and Labor Related Services are provided at static websites available. E-payment and e-voting services are not available yet. E-health is being actively promoted by the Georgian Telemedicine Union, whose activities include tele-pathology, education, and development of policy for particular scenarios, such as e-consultations for conflict regions. It also developed a proposal for the creation of an e-health national network in Georgia.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Internet users in Georgia is around 2 million users as of early 2016. The penetration is about 52.9%. By early 2015 mobile penetration in Georgia had approached 128%, subscriber penetration having increased tenfold over the previous nine years.

4.2 Management Optimization [MO]

The newest document "A Digital Georgia: e-Georgia strategy and action plan 2014-2018" defines the path leading to a modern Georgia and provides a comprehensive framework for societal changes enabled by ICT. It focuses on those potential fields, where the public sector is able to take measurements and to set frameworks to exploit the full potential of ICT. The eGeorgia strategy is, however, not limited to the activities covered under the term e-Government.

The vision for the e-Georgia strategy reflects this wider scope and is defined as "Georgia will become a more efficient and effective public sector offering integrated, secure, and high quality e-Services. Improved usage and participation enable ICT-driven sustainable economic growth."

4.3 Online Service [OS]

There has been very little progress in Georgia regarding the provision of e-Governmente-Government services. Most of e-Governmente-Government services such as: E-tender, Social Security Services, Civil Registration Services, Consular Services and Labor Related Services are provided at static websites available. E-payment and e-voting services are not available yet. E-health is being actively promoted by the Georgian Telemedicine Union, whose activities include tele-pathology, education, and development of policy for particular scenarios, such as e-consultations for conflict regions. It also developed a proposal for the creation of an e-health national network in Georgia. However, this has not yet been implemented. This year there is no information change in this indicator

4.4 National Portal [NPR]

The Georgian national portal http://government.gov.ge/ provides very basic functions for users. The portal links to all government agencies' websites. Information provided in the portal seems to be targeting foreign visitors and business who want to know more about the country. The portal is available in Georgian official language and English. There is not SNS feature in the National Portal.

4.5 Government CIO [GCIO]

The official CIO position is still absent in the Georgian bureaucracy. Policy development in ICT areas comes from the Telecommunication and Information Technology Department of the Ministry of Economic Development. However, the Ministry does not have a published forward-looking strategy for development across industry.

4.6 E-Government Promotion [EPRO]

Georgia is short of legal framework for e-Governmente-Government development. There are no legislations, strategies, policies or plans regarding e-Governmente-Government. Most e-Governmente-Government projects are sponsored by international organizations

4.7 E-Participation [EPAR]

E-Participation in Georgia is still limited at offering information to the citizen through government website. Web 2.0 tools are not yet being used to allow more interaction between government and citizen. However, citizen can contact with government officials through feedback forms or email addresses available at some government websites.

4.8 Open Government Data [OGD]

In April 2012, the country's government presented a relevant Action Plan which is focused on improving public services, increasing public integrity, managing public resources effectively, and creating safer communities. The implementation of these commitments is currently coordinated within an NGO forum created under the Ministry of Justice. The Georgian government had no specific plan to engage civil society and the private sector in the development of OGP commitments.

Georgia's OGP action plan is structured around four grand challenges: improving public services, increasing public integrity, managing public resources more effectively, and creating safer communities. The OGP requires countries to undertake at least one grand challenge of its list of five grand challenges, so by undertaking four Georgia is going beyond this requirement.

4.9 Cyber Security [CYB]

The Government of Georgia publishes its Cyber Security Strategy for the first time in 2008, it has clearly demonstrated that the national security of Georgia cannot be achieved without ensuring security of its cyberspace. The National Security Concept of Georgia defines cyber security as one of the principal directions of its security policy. Georgia aims to set up a system of cyber security that will facilitate resilience of cyber infrastructure against cyber threats as well as will represent additional factor in the economic growth and social development of the country.

Georgia aims to develop a system of information security that is able to minimize harmful effects of any cyber-attack and allows rapid recovery of information infrastructure to being fully operational in the aftermath of such attacks.

4.10 The use of Emerging ICT [EMG]

There is no emerging of using ICT in Georgia government.

5 Some Highlights

A "Georgia Health Management Information System Strategy" was already developed by the Ministry of Labour, Health and Social Affairs in 2011. The e-Health action plan is a vital part of the e-Georgia strategy.

Through 5 years of evaluation and based on the methodology of Waseda e-Government ranking, Georgian e-Government ranking is decreasing, especially this year. The official CIO position is still absent in the Georgian bureaucracy. Policy development in ICT areas comes from the Telecommunication and Information Technology Department of the Ministry of Economic Development.

There has been very little progress in Georgia regarding the provision of e-Governmente-Government services. Most of e-Governmente-Government services such as: E-tender, Social Security Services, Civil Registration Services, Consular Services and Labor Related Services are provided at static websites available. E-payment and e-voting services are not available yet.

Georgia was among the first group of countries to join the Open Government Partnership (OGP). In April 2012, the country's government presented a relevant Action Plan which is focused on improving public services, increasing public integrity, managing public resources effectively, and creating safer communities.

Georgia adopts New Cyber Security Strategy that will be the main document defining state policy and establishing basic guiding principles in cyber security field. It should be mentioned that strategy considers cyber space protection equally important as inviolability of land, air and maritime boundaries.

Germany

1 General Information

Area: 357,022 km²
Population: 80,854,408
Government Type: federal republic
GDP: $47,400

Historical Ranking (2005 – 2016)

2 Positioning in a region
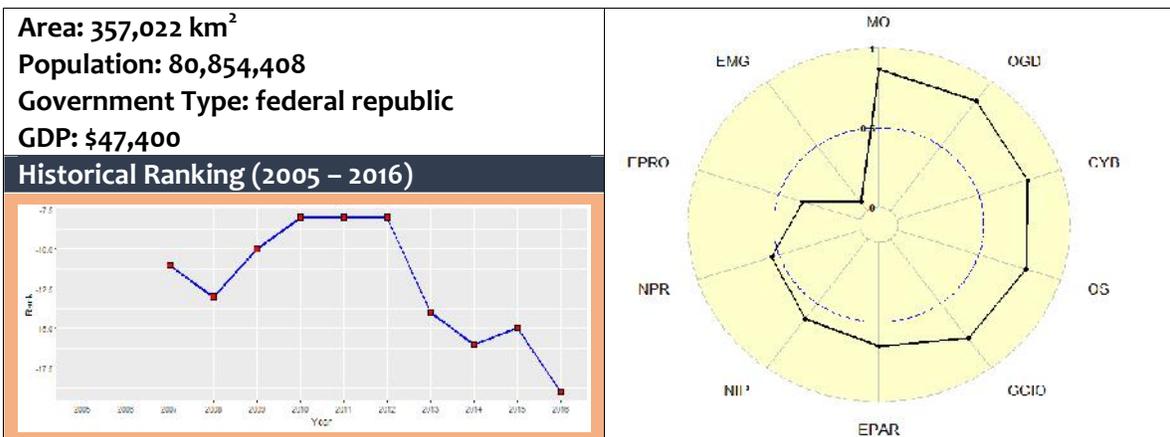
OECD Countries	EUROPEAN Countries
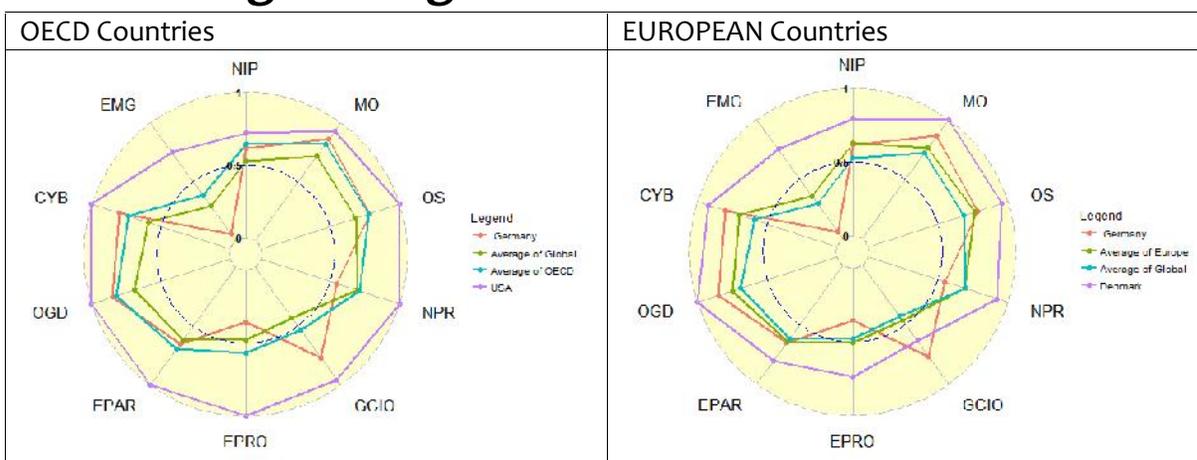
Among OECD countries, Germany's Government CIO and Cyber Security are ranked higher than the global, Europe and OECD's average scores. Especially for GCIO, Germany secures the top position in European countries. Meanwhile, the country stands below the world and OECD in termss of utilizing emerging technologies.

3 E-Government Development

Germany, being a developed country, has significant experience with e-Government and as such has very evolved e-Government plans, policies and goals.

4 Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 86.2% Germany's population were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). Among them, wired broadband subscribers accounted for around 35.8% while more than 63.6% of total population have a wireless broadband connection.

4.2 Management Optimization [MO]

The Germany Federal Government has approved the Digital Agenda 2014-2017 on August 2014. This agenda was planned by the joint efforts of by the Federal Ministry of the Interior, the Federal Ministry of Economic Affairs and Energy and the Federal Ministry of Transport and Digital Infrastructure. With its Digital Agenda, the Federal Government aims to three targets: to further exploit the innovative capacity for economic and employment growth; to expand the national networks and imporve digital literacy for public access and participation; and to enhance IT systems and services' security and saferty, thus increase trust among the public and the business sector.

In addition, the Federal Government's "Digital Administration 2020" programme establishes an overarching framework for the federal administration of the future, where potential benefits of digitalization are utilized to enable the administration reform, targeting to effectiveness, transparency, efficiency, accessibility and responsiveness to the needs of individual citizens and businesses.

In terms of government network, the project "Netze des Bundes" was implemented to consolidate a cross-departmental communication infrastructure with the highest level of security. All existing federal administration's networks are planned to be fully migrated to this infrastructure.

4.3 Online Service [OS]

The score for Online Service comprises of five sub-dimensions: e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience.

In terms of complexity level, almost Online Services in Germany have reach the transactional level in which users can totally conduct their businesses via electronic portal. For e-procurement, in line with the new European procurement law, German Federal Government plans to make electronic procurement binding for the federal administration by April 2016. 'XVergabe' is a project initiated in 2007 to provide a standard interface for data exchange formats and data exchange processes of all electronic tendering platforms in Germany. Regarding customs, since 2006 the German Federal Government bring the Electronic Customs Tariff (EZT) system to the Internet, known as "EZT-online". In addition, users can switch to an alternative solution provided by the European Commission – the Integrated Tariff of the European Community (TARIC) information system. With both systems, users can look up the importing/exporting code and customs duties. For healthcare, there is a telemedicine portal launched by the Federal Ministry of Health as a part of the eHealth initiative which was initiated in mid-2010. The portal provides a nationwide looking up on more than 200 projects

involving telemedicine applications and tele-monitoring in Germany[16]. In addition, as of December 2015 the "Act on secure digital communication and applications in the health care system" - E-health Law - came into effect, establishing a framework for utilizing ICT into health care area. From 2018 onwards, patients can choose to have the relevant emergency data stored on their health card.

To measure the level of convenience, the third party application Google PageSpeed™ Insight[17] has showed that all services have a good access speed.

Table 10 List of Online Services

Online Service	URL
e-Procurement	http://www.evergabe-online.de/
e-Tax	https://www.elsteronline.de/
e-Customs	http://www.zoll-d.de/
e-Health	http://telemedizin.fokus.fraunhofer.de/
One-Stop Service	https://www.bund.de/

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. deutschland.de is considered as the national gateway of Germany. It presents a wide range of information resources about different aspects of Germany, from politics to culture. However, government services were not provided on this portal.

In technical aspect, the result of Google PageSpeed™ Insight showed that the website operates well both from PC and from Mobile Device. The portal also connects to various Social Networks such as Facebook, Twitter, YouTube and Flickr, plus there is a feature allowing users to receive updates via mail notification.

4.5 Government CIO [GCIO]

Under the new strategy, the future development of federal IT will be in charged by the Chief Information Officers Council together with the Federal IT Management Group led by the Federal Government Commissioner for Information Technology.

In 2015, Klaus Vitt, head of IT at Germany's Federal Employment Agency was appointed by the German federal government to become the new IT Commissioner of the federal government. by the German federal government.

CIO-equivalent positions were also found in federal states' agencies[18].

4.6 E-Government Promotion [EPRO]

The Federal Ministry of the Interior is in charge of the strategic orientation and development of e-Governmente-Government in Germany. The IT Planning Council is the main body for managing federal and state IT. The council consists of the Federal Government Commissioner for Information

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[16]   http://www.bmg.bund.de/en/health/the-electronic-health-card/background-material-on-the-e-health-initiative-of-the-federal-ministry-of-health.html

[17] https://developers.google.com/speed/pagespeed/insights.

[18] http://www.cio.de/a/klaus-vitt-wird-neuer-bundes-cio,3243557

Technology and the representative of 16 German states. The IT Planning Council has a clear directive: facilitating mandatory cooperation among federal, state and local governments on IT and e-Governmente-Government, with the target of delivery user-centric electronic public services and cost-effective, efficient and secure IT operations for public administration.

In August 2013, the federal E-Government Act (EGovG)[19] was enacted, establishing the regulatory framework for digitization in the federal administration. The Act mandates the deadlines for adapting electronic access for individuals, businesses and the public administration, which enforces the federal administration to follow in order to ensure the successful implementation of e-Governmente-Government programs.

Initiative D21 is a nonprofit organization based in Berlin. It represented the largest public-private partnership in Germany for the Information Society. Two of projects supported by Initiative D21 are the E-Government Monitor and the Digital Index for Germany which are published annually.

4.7 E-Government Participation [EPAR]

In 2015 there is a pilot project titled "Digital Voluntary Social Service Year" (FSJ-digital) launched to gather and summaries best-practice experience about how young people can offer their skills and talent in managing and applying new media to help non-profit organizations.

No evidence has been found regarding to electronic voting in e-Governmente-Government.

4.8 Open Government Data [OGD]

In 2014, the Federal Government issued the National Action Plan to implement the G8 Open Data Charter[20] to define measures for facilitating access to government data. This Action Plan takes into consideration the results already achieved in previous programs: the Federal Government's "Transparent and Network-Based Administration" program, the IT Planning Council's "Promoting Open Government" program, and the prototype development for the data portal GovData (http://www.govdata.de/).

In line with the national plan, the Federal Government seeks to strengthen the legislation for publishing government data by amending the Act on Access to Geodata (GeoZG); the E-Government Act; the Environmental Information Act (for environment information); the Freedom of Information Act and so on.

4.9 Cyber Security [CYB]

The Federal Ministry of the Interior works with the Federal Office for Information Security (BSI) to provide appropriate IT security. Germany's Cyber Security Strategy was adopted on 23 February 2011. This strategy called for establishing the National Cyber Response Centre and the National Cyber Security Council, among other things.

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[19] http://www.bmi.bund.de/SharedDocs/Downloads/EN/News/e-Government.pdf?__blob=publicationFile
[20]   http://www.bmi.bund.de/SharedDocs/Downloads/EN/Broschueren/2014/national-action-plan-open-data.pdf?__blob=publicationFile

Laying a comprehensive legal foundation for cyber security is the target of the German Government. The Federal Government stated in the digital agenda that it will aim to modernize European data protection law in the digital market by adopting the General Data Protection Regulation by 2015[21]. The National Cyber Response Centre will be assigned a greater coordination role in responding to cyber security incidents and improving cooperation between specialized authorities.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). The Federal Government is pursuing to boost up the development and introduction of cloud computing facilities by issuing the new Cloud Computing Action Programme[22].

There is a research project known as THESEUS, aiming to utilize The Internet of Services and the Internet of Things. With this project, the German Federal Government is seeking to utilizing semantic technologies and the creating new standards for the Internet of Services.

5 Some Highlights

In the attempts to promote for publishing government datasets and information, early 2015, German Government presented 'The General Government's National Action Plan to implement the G8 Open Data Charter'. By doing this the government put into action one of its pledges to maintain the top position in Open Government ranking indicator.

Cyber Security is another strong point of Germany. With the presence of a Cyber Security Strategy alongside a comprehensive, frequently amended legislation framework (Federal Data Protection Act (2003), Digital Signature Act (2001), Electronic Commerce Act (2001), Act on the Federal Office for Information Security 2009), German Government demonstrates a strong commitment to fight against cybercrime.

With a relatively low score in the National Portal (https://www.deutschland.de), it is recommended that the government should put more efforts on providing more information about the country, the government and available services for citizens and businesses.

Although German Government has planned to use cloud computing (ICT strategy of the German Federal Government 2015[23]) but no evidence of actual usage in Federal Government has been found. The government should pay a close attention to all challenging aspects such as cloud security and standards to put cloud computing plan into action.
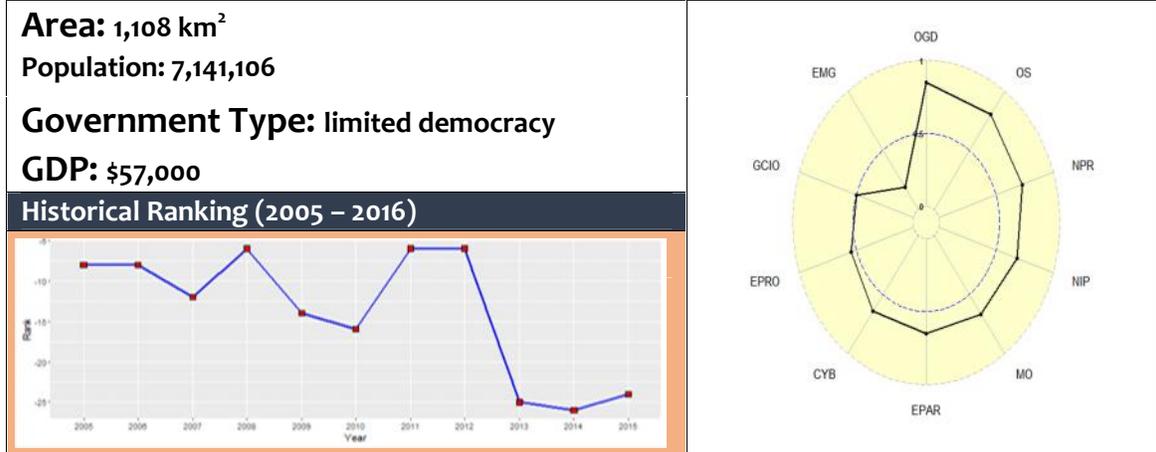
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[21] http://www.bmi.bund.de/SharedDocs/Downloads/EN/Broschueren/2014/digital-agenda.pdf?__blob=publicationFile

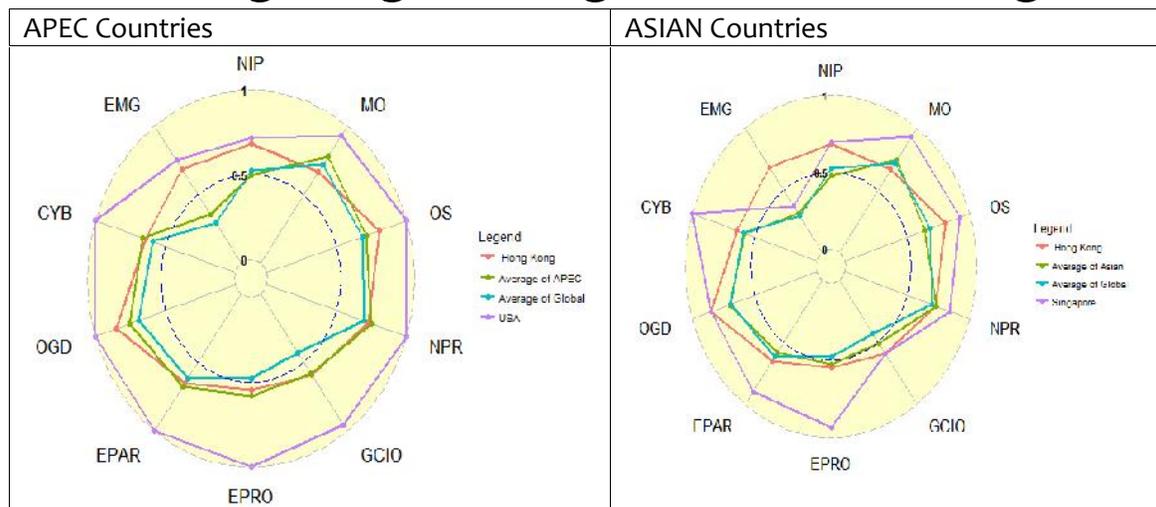[22] http://www.bmwi.de/English/Redaktion/Pdf/normungs-und-standardisierungsumfeld-von-cloud-computing

[23] https://www.bmwi.de/English/Redaktion/Pdf/ict-strategy-digital-germany-2015,property=pdf,bereich=bmwi2012,sprache=en,rwb=true.pdf

Hong Kong

1 General Information

Area: 1,108 km²
Population: 7,141,106

Government Type: limited democracy

GDP: $57,000

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

APEC Countries	ASIAN Countries

Hong Kong has got decent performance on most of indicators compared with other APEC members and ASIAN countries. Especially on the indicator of Online Service and Government CIO, HK has showed their efforts to deliver high quality e-Service and reform on the governmental structure to implement e-Government strategy.

3 E-Government Development

The 2008 Digital 21 Strategy is the latest document for ICT development in Hong Kong which has updated regularly to adapt technological advancement and changing needs of the society. The Office of the Government Chief Information Officer (OGCIO) has been set up to serve as GCIO of Hong Kong, taking the responsibility to lead ICT strategy implementation and providing measures. As

the main goal of strategy is to build a world digital city, OGCIO also actively collaborate with industries, organizations and academics to seek for the best IT solutions for the whole society. Recently the government has constructed cloud computing motel energetically and provided government cloud platform for e-Service. It contains "in-house private cloud" "outsourced private cloud" and "public cloud" to respond to different needs and functions. Economic advancement is expected by the HK government with supporting and creating the best IT environment for business and individuals.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

According to the report of ITU, 74.6% of people in HK were Internet users, about 31.2% have fixed-broadband subscriptions, and wired broadband subscription has reached104.5%. HK has a well-established infrastructure construction and penetration among Asia countries.

4.2 Management Optimization [MO]

Hong Kong's Digital 21 Strategy is the blueprint for the development of information and communications technology (ICT) in Hong Kong. It is updated regularly to take into account technological advancement and changing needs of the society. Two administrative applications have been established, one is the e-Payroll & Benefits System established by the HK Treasury via which users can make online enquiry on their general payroll, personal, appointment, payment-related and housing benefit information. The other one is the e-Leave System provided by the Civil Service. Bureau which is to support leave applications and the associated processing, recording and monitoring of leave taken by civil servants The Hong Kong Government will also be adopting the Cloud Computing model to meet rising public demands and community expectations on e-Governmente-Government services and reap the benefits of emerging technologies. To be in accordance to the general strategy, HKG has launched continuous initiatives in the Policy Address and Budget such as "Innovation and Technology" in 2016 Policy Address.

4.3 Online Service [OS]

HK has got comparatively high score on the indicator of Online Services among Asia area. The e-Service system also has won several awards especially the one-stop service portal. The Electronic Transactions Ordinance was enacted in 2000 and updated in 2004. It was the foundation of e-applications, which allowed HKG to develop further e-Services for users. So far, HKG has established e-Tax, e-Payment, and consular services at the transactional level; e-Tender and civil registration services at two-way interactions level, while social security and labor related services allow downloading of documentation. All e-Services in Hong Kong are interactive and doing by two way transaction or dynamic website.

4.4 National Portal [NPR]

As for a national portal, the HKG launched a new portal (http://www.gov.hk) in 2008, which is no longer in cooperation with a private company but operated solely by the HKG itself. The new portal provides many kinds of services to not only citizens but also enterprises and foreigners. Generally speaking, it has an excellent navigation function, and an easy to understand interface. In the portal,

there are three languages options: English, simplified Chinese, and traditional Chinese. Almost all web pages and documents can be found in these three language options. However, it is surprising to find that mobile version and accessible version started this year. Through mobile version people could read text only versions which can match various screen size. And an accessible version which provides several tools like non-text content, audio-only, video-only, no keyboard trap，is convenient for all the people including disables. In addition, HKG organized the Web Accessibility Recognition Scheme to show appreciation to businesses and organizations that have made their websites accessible, with an aim to encourage adoption of web accessibility to facilitate access to online information and services by all segments of the community including persons with disabilities.

4.5 Government CIO [GCIO]

The HKG established the OGCIO in 2004. Mr. Daniel Lai has assumed the role of OGCIO from 2012. And there are two Deputy Government Chief Information Officers (DGCIO) who support OGCIO in daily work. The DGCIO is responsible for two major areas of responsibilities: Policy & customer Service, and Consulting & Operations. The main task of OGCIO is to provide leadership for the development of ICT within and outside the Government. In Hong Kong, while many universities provide CIO related courses, but there are few CIO related organizations in academia and the private sector. Headed by the Government Chief Information Officer (GCIO), the OGCIO provides a single focal point with responsibility for ICT policies, strategies, programmes and measures under Digital 21 Strategy, in addition to providing information technology (IT) services and support within the Government. OGCIO is playing an important role under the Digital21 Strategy in five action areas: 1.Facilitating a digital economy; 2.Promoting innovation and technology; 3.Developing Hong Kong as a hub for technology and trade; 4.Development of the next generation of e-Governmente-Government services; 5.Fostering a digital inclusive Society.

4.6 E-Government Promotion [EPRO]

OGCIO plays the main role in enabling e-Governmente-Government promotion, such as in producing video material and pamphlets for example. Moreover, the Digital 21 Strategy Advisory Committee is the main supporter for the Digital 21 Strategy, while the Commerce and Economic Bureau provides the budget for e-Governmente-Government implementation and promotion; 4.5 billion HKD in 2008 for example. As for an assessment mechanism, the HKG established an e-Government Steering Committee to assess the performance of the e-Governmente-Government program.

4.7 E-Participation [EPAR]

Hong Kong is highly ranked in termss of the e-Participation indicator. In the Hong Kong national portal, there are many kinds of online services, not only for citizens, but also for business and foreigners. It is also really easy to navigate and find information in the portal. This also acts as a one-stop service center for citizens. The HK portal uses web 2.0 technologies such as RSS, online forums and blogs to facilitate communication between citizens and Government. In the portal there is also information about how the Government takes the opinions of citizens in decisions making processes.

4.8 Open Government Data [OGD]

The Code on Access to Information states that the government exists to serve the community well within available resources.78 To this end, it recognizes the need for the community to be well

informed about the Government, the services it provides and the basis for policies and decisions that affect individuals and the community as a whole. This Code defines the scope of information that will be provided, sets out how the information will be made available either routinely or in response to a request, and lays down procedures governing its prompt release.

4.9 Cyber Security [CYB]

The Hong Kong police launched Cyber Security Center on December 7, 2012, in order to boost Hong Kong's Internet security. The center provides round-the-clock services under the bureau's Technology Crime Division. The center will strengthen co-ordination between Police, government departments, and local and overseas stakeholders when major information systems come under attack. Now HK also has Computer Emergency Response Team Coordination Centre (HKCERT) and Government Computer Emergency Response Team Hong Kong (GovCERT.HK). The latter responds to cyber security incidents that affect public agencies. On the other hand, the Cyber Security and Technology Crime Bureau CSTCB) is responsible for handing cyber security issues and technological crime investigations, and so on.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). The evidences show that HK government has put effort to implement Cloud Computing or Big Data into their public sectors, such as they create government cloud environment to service the communities and IT industry, benefiting government themselves as well. The government values the usage of emerging technologies, to keep its leading position in e-Governmente-Government area among Asia.

5 Some Highlights

Since the HKG has enabled one-stop service portal GOVHK ((http://www.gov.hk), citizens could get public services and information through the website promptly. The portal site has won several international awards due to the convenience and enhanced contents, well-designed columns which helps citizens to find what they what without complicated introductions. More than that, GOVHK has upgraded the accessibility for people with special needs. The high score on indicator of "Online Service" could prove its significant improvement. With the penetration of mobile devices, mobile e-Governmente-Government has shown its importance increasingly. HKG keeps promoted its user-friendly e-Services on smart phones, followed by measures to assist the implementation created by OGCIO.

On the prospective of ranking, Hong Kong could raise more scores on "E-Government Promotion" "Cyber security" and "The usage of emerging technologies". Perhaps HK has high rate of usage and awareness of e-Governmente-Government and there is no need to conduct strong promotion, citizen's engagement is the fundamental element for e-Governmente-Government itself. In addition to that, legal framework preparedness for cyber security and emerging technologies is the next task for HK e-Governmente-Government, if its objective is to maintain the first-class IT area in Asia, even around the world.
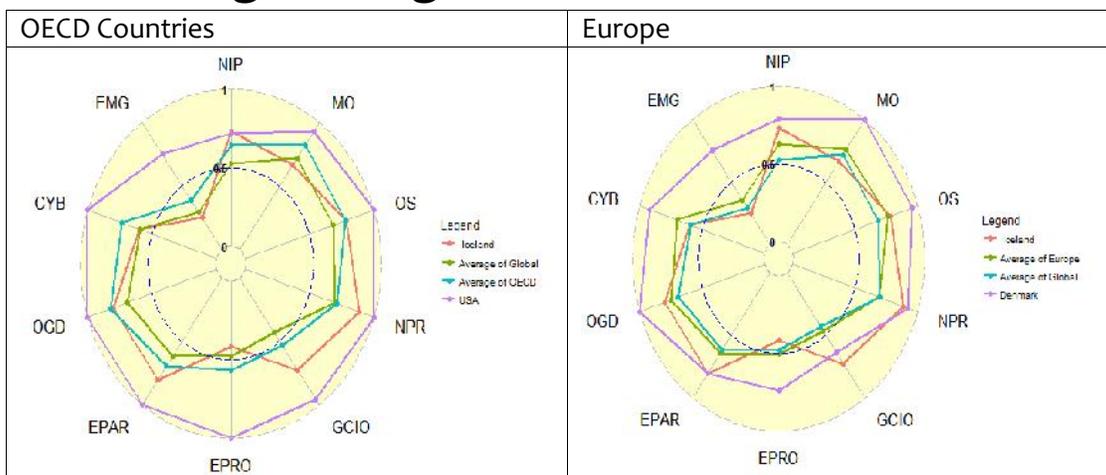
Iceland

1 General Information

Area: 103,000 km²
Population: 331,918
Government Type: Parliamentary Republic
GDP: $46,600
Historical Ranking (2006-2016):

2 Positioning in a region

OECD Countries	Europe
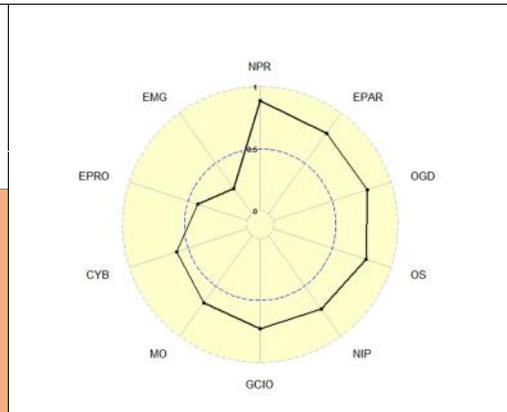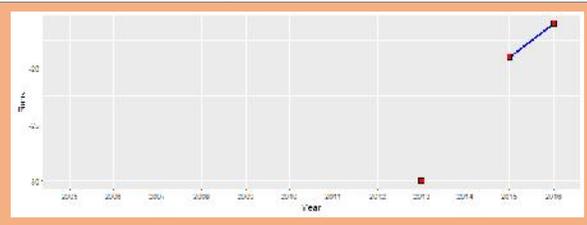
3 E-Government Development

The Republic of Iceland's economy was devastated by the 2008 economic crisis, but it has since had a better-than-average recovery. Similarly, it suffered from a recent political scandal involving its new prime minister. Nevertheless, it has made great strides in the past few years to improve its e-Governmente-Government services and infrastructure, and it has become one of the top-performers in Europe by many measures. The government has also been using tools like social media in innovative ways. In 2012, for example, the government created accounts on social media sites like Facebook or Twitter to solicit feedback for the world's first 'crowdsourced' constitution. While the constitution was never formally adopted, this effort represented Iceland's approach to engaging its citizens and utilizing new platforms in unique ways. The Icelandic government will need to redouble

its efforts if it wishes to reach its goal of becoming a top-ten e-Governmente-Government and e-participation country by 2020.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Iceland's development and implementation of ICT services and infrastructure is among the most advanced in the world. It has been ranked fourth in the world for ICT Development by the International Telecommunication Union (ITU) for the past three years. With a usage rate of 96.5%, Icelandic citizens are more likely to use the Internet than the citizens of any other country. 35.1% of citizens had wired broadband subscriptions in 2013, and 74.7% had wireless broadband access, placing the country within the top five for this metric.

4.2 Management Optimization [MO]

Iceland's current e-Governmente-Government development strategy is a critical component of the Iceland 2020 initiative, and it is based in large part on the previous Icelandic Government Policy on Information Society 2008-2012. The goal of this initiative is to place Iceland within the top ten countries in the United Nation's e-Government Development Index (it ranked 19th in 2014).

4.3 Online Service [OS]

Icelandic citizens have had the option of submitting their annual income tax declarations electronically since 1999. Citizens can also calculate their future pension payments, and access personalized accounts pertaining to social security, and health insurance benefits at the portal www.tr.is. Citizens can also apply for unemployment benefits, passports, driver's licenses, and other documents entirely online. Businesses also have a wealth of online services available to them, including various tax and employee contribution declarations, customs' declarations, and procurement services. Many of these e-Services can be completed entirely online. Others provide forms and information on how to complete the process.

4.4 National Portal [NPR]

Iceland's national portal is located at www.island.is. From this portal, citizens can receive news and information, access a wide array of e-Services, sign or post petitions, access public data, find local government websites, and more. The site is available in both Icelandic and English (though the English version is limited). From this portal, citizens can sign up or login to My Pages, which allows citizens and business to "easily find personalized information from public sources." The portal has a simple front-end user interface, but provides an array of information, forms and services.

4.5 Government CIO [GCIO]

While Iceland does not have a specific CIO position, the Ministry of the Interior is responsible for e-Governmente-Government development. Ólöf Nordal began serving as the Minister of the Interior on December 4th, 2014, so she currently has oversight over the development of ICT infrastructure and e-Services.

4.6 E-Government Promotion [EPRO]

The government of Iceland has laid out several important goals and policies to promote the use and development of e-Governmente-Government. Some key goals are to become an 'e-Nation' that offers one-stop online service for all citizens and businesses. They also plan to increase efficiency and eventually become a world leader in e-Governmente-Government.

Iceland also has a deep legal framework on e-Governmente-Government and open information issues, especially since the 2012 passage of its new Information Act, which outlined the public's right to governmental data and the government's responsibility to provide it in a timely manner. Iceland also has laws in place regarding digital privacy, e-commerce, and e-procurement.

4.7 E-Participation [EPAR]

Iceland has improved markedly in this category over the past few years, moving from 135th in 2010 to 65th in 2014 in the United Nations' E-Participation Index Ranking. The Iceland 2020 Initiative aims to place within the top ten by 2020 in this ranking. The Icelandic government continues to promote use of its e-Services to increase efficiency and reduce costs. As of April 2014, "over 90 % of Iceland's individual taxpayers file electronically."

4.8 Open Government Data [OGD]

Accessible directly from its main government portal, Iceland's open government database (http://www.opingogn.is/) provides data collections and packages from several government ministries and offices. Geographic, economic, and statistical data packages are publicly available through this portal, with more data sets added on a regular basis.

4.9 The use of Emerging ICT [EMG]

Iceland's Skilriki service (http://skilriki.is/) allows citizens and businesses to create personalized electronic certificates to provide secure authentication and signatures. Authentication can be set up to use a card, or a mobile phone for validation. Citizens and businesses can also apply for an IceKey—a password directly linked to the official identification number of an Icelandic citizen or legal entity—which adds an additional layer of security to online transactions.

5 Some Highlights

Iceland's government portal, www.government.is, provides information, news, and resources, including links to each ministry. Visitors from around the world can access information about how the government is structured, biographies and contact information for various officials, and past publication from each office and ministry.

There is also a separate portal for foreigners, http://www.iceland.is/. This portal is presented in English, and contains information about travel and tourism in Iceland, investment opportunities, arts and culture, and the latest news and events.

India

1 General Information

Area: 3,287,263 km²
Population: 1,251,695,584
Government Type: Federal Republic
GDP: $6,300

Historical Ranking (2005 – 2016)
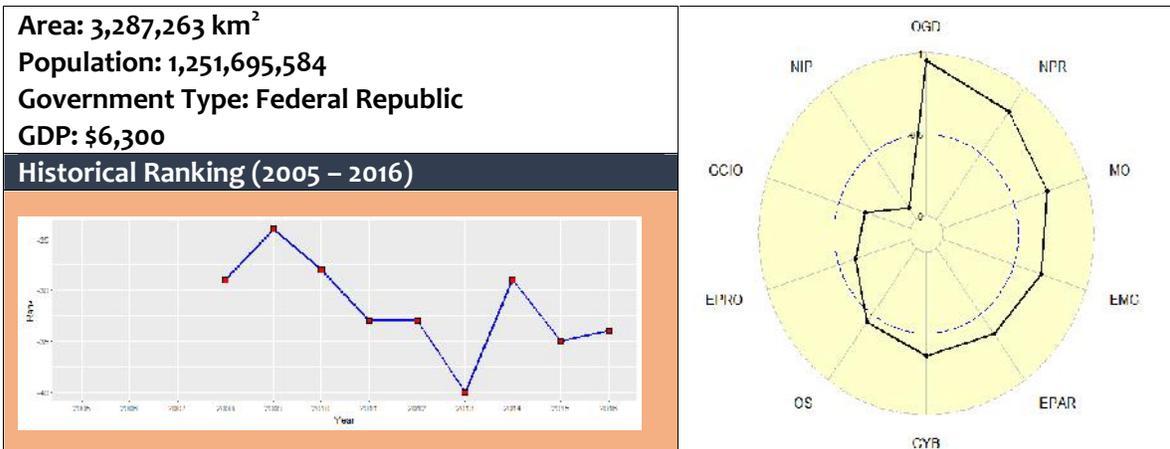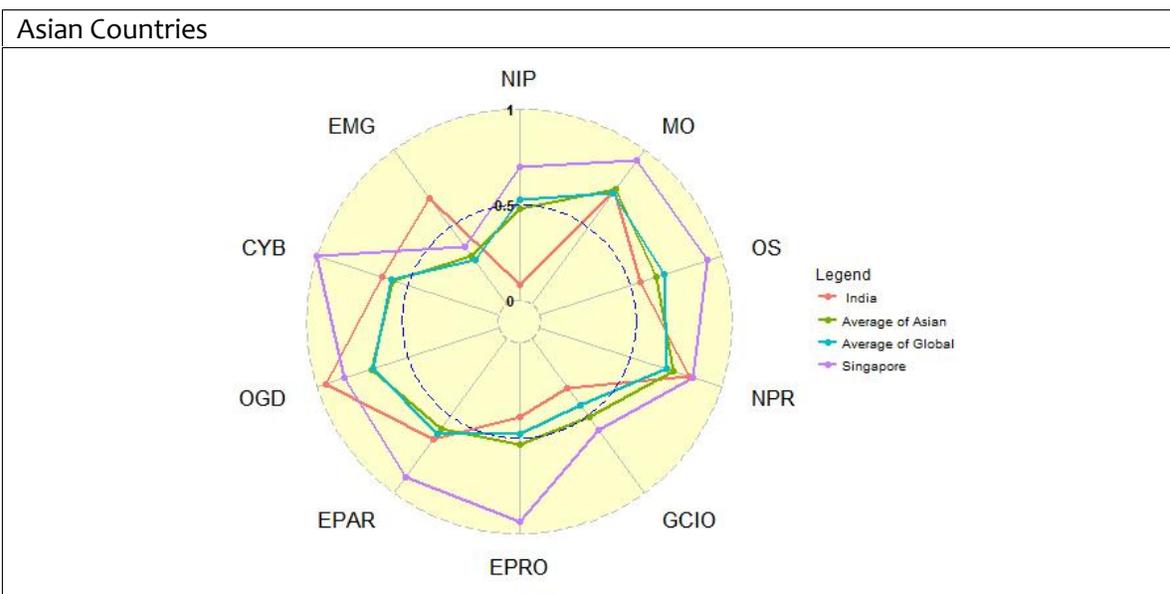

2 Positioning in a global organization and a region

Asian Countries

Among Asian Countries, India has a better score than the average score of Asian countries in Open Government Data, The use of Emerging ICT, and National Portal. As shown on the above picture, India is very low on the basic infrastructure. However, despite the lack basic infrastructure, India has been trying to take the benefit of emerging ICT such as Cloud Computing, Big Data, and IoT. In addition to that, Open Data is one of attractive program in India to respond the demand of more data for empowering the society.

3 E-Government Development

Government of India has acknowledged that expanding the telecommunication infrastructure needs
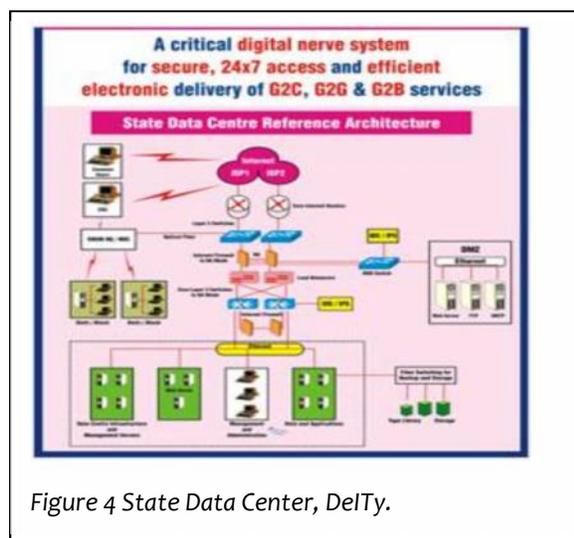

Figure 4 State Data Center, DeITy.

a huge investment and demands some business opportunities that is very difficult to achieve. Digital divide is still wide in India. Classical problem about the gap in North-and-South and West-and-East is still coexist. Instead of focusing mainly on the telecommunication infrastructure, India government focusing on improving the governance using ICT; e-governance.

e-Government in India has been steadily improved with clear direction. India government follow the best practices from advanced countries such as United States and United Kingdom for developing ICT Solution. Supporting by huge amount of IT Professional, India does never have issues on the lack of human resources on ICT.

Furthermore, business enterprises in India highly supported government vision on bringing the benefits of IT revolution to the masses. Government of India defined their e-vision as follow.

"To make India a global information technology superpower and to strive to make Indian software industry one of the largest exporters of software in the world".

India has launched so many e-Governmente-Government projects all over the country. The projects are mainly focused on delivering government services better to the citizen. Following is the list of e-Governmente-Government project in India.

e-Government Projects at central and local government in India
1. Gyandoot (Madhya Pradesh)
2. Twin cities network services (Hyderabad and Andhra Pradesh)
3. Electronic Land Record Systems (Karnataka, Punjab, and Andhra Pradesh)
4. Automated Milk Collection (AMC) System (Gujarat)

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 18% of people in India were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 1.2% have fixed-broadband subscriptions, and wired broadband subscription has reach 5.5%.

4.2 Management Optimization [MO]

In early 2010, India has launched Digital India Program, a flagship program of the Government of India with a vision to transform India into a digitally empowered society and knowledge economy. The program required all government institutions to leverage their ICT capacity. This program also

adopts Public Private Partnership approach for supporting the successful of Digital India. The program has identified priority areas; Digital Infrastructure, Governance and Service on Demand, and Digital Empowerment. These areas were cascaded into specific actions and measurable targets.

India choses centralization for e-Government initiatives. As part of centralizing e-Government initiatives, India developed State Data Center. Furthermore, India has set an e-governance infrastructure to ensure the alignment among e-Governmente-Government projects with national strategy. To increase interoperability, India prepared a Government Application Program Interface (API).

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services were investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e- Health is the only Online Service in India that cannot be investigated during the period of survey.

In terms of complexity level, all of Online Service in India have passed an initial stage in which user can download the document requirement and still need a physical interaction with government officers. In addition to that, all Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services. Since the e-Customs is still in a one-way interaction, such security measures are not found in it.

To measure the level of convenience, the third party application result has showed that three portals are above the average considerably in terms of speed. All online service in India have scored above average, thus, considerably fast to access. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 11 List of Online Services

Online Service	URL
e-Procurement	http://eprocure.gov.in
e-Tax	http://www.incometaxindia.gov.in
e-Customs	https://www.icegate.gov.in/
e-Health	N/A
One-Stop Service	http://india.gov.in/services/online-Services

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of India (https://india.gov.in/) contains proper information for local citizens and foreigners. Information about India is available on the portal. User can find information about culture and heritage, demographic, and government. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is above average both from PC and from Mobile Device.

4.5   Government CIO [GCIO]

India government established the Department of Electronic and Information Technology under Ministry of Communication and Information India (DEITY). DEITY take a significant role for providing a sponsorship and leadership on e-Government in India. DEITY is considered as a GCIO for nation-wide. The role of head of DEITY is similar to the role of a CIO. To support the development program of CIO, there is a CIO Academy offered by Srini Raju Centre for IT & Networked Economy (SRITNE) and the Centre for Executive Education at the Indian School of Business (ISB) in partnership with the CIO Association of India.

4.6   E-Government Promotion [EPRO]

One program in Digital India is to create awareness about e-Governance services and service delivery points. There are numerous activities to introduce e-Government services from government to citizens. These activities were hosted by DEITY under National e-Government Plan (NEGP). In addition to that, to ensure the fairness and sustainability of e-Governmente-Government projects, India government used a third party audit do so.

4.7   E-Participation [EPAR]

Culture and society in India has long been recognized as a high tech society. Government officers can take the benefit of ICT for supporting their role. For instance, parliament member has their own website and provide the citizens with the channel to communicate. However, the absence of e-participation portal for gaining citizen's expression reduce the quality of e-Participation in India so far.

4.8   Open Government Data [OGD]

In 2001, India has launched Freedom of Information Act to participate in the Freedom of Information Act movement around the world. To strengthen the implementation of these act, India has established Open Data Portal (https://data.gov.in) to provide public with accessible government information. The portal is maintained by National Informatics Center. To keep the information update, India government uses a module for contributing data catalogs by various government agencies, thus, making those available on the front end website after a due approval process through a defined workflow.

4.9   Cyber Security [CYB]

India has ratified several laws and regulation related to cybersecurity. Some of them are as follow:

-   IT Act 2000
-   IT (Amended) Act 2008
-   Trusted Company Certification
-   Security incident - Early Warning & Response
-   Cyber Security Assurance Framework
-   National Cyber Security Policy

In addition to these laws, India has strengthened organization capacity for cybercrime countermeasure by setting up an Inter Departmental Information Security Task Force (ISTF) with National Security Council as the nodal agency. Indian-CERT was established to support India government for solving Internet Security problems.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). India has implemented Cloud Computing for Public Sector named "GI Cloud", which is later named "Meghraj". This Cloud is hosted by National Informatics Center. Infrastructure-as-a-Service is one of Cloud Computing Services available for government institution. Beside the Cloud Computing Technology, India has formally implemented IoT. The state government of Andhra Pradesh have approved their own Internet of things policy, with an aim to capture at least 10% Indian IoT market share. Although the policy has been approved, however, the evidence show that it is not officially launched.

5 Some Highlights

Align with India's e-vision, India is struggling to adopt the Cloud Computing through a very ambitious

Figure 5: GI Cloud Architecture

initiatives named "GI Cloud", which is later named "Meghraj". GI Cloud involves government, private sector, and community. They have roles in every building block of GI Cloud initiatives; Cloud Consumer, Cloud Auditor, Cloud Provider, Developer Community, and Research & Development Center.

In addition to Government Cloud Initiatives, India also implements Internet of Things (IoT) as a way to take the optimum benefit of ICT in this era. Government has assigned Bangalore as the IoT Hub for India since the Bangalore has the largest IoT Community in India. To support the IoT era, government set up the Center of Excellent for IoT in partnership with NASSCOM.
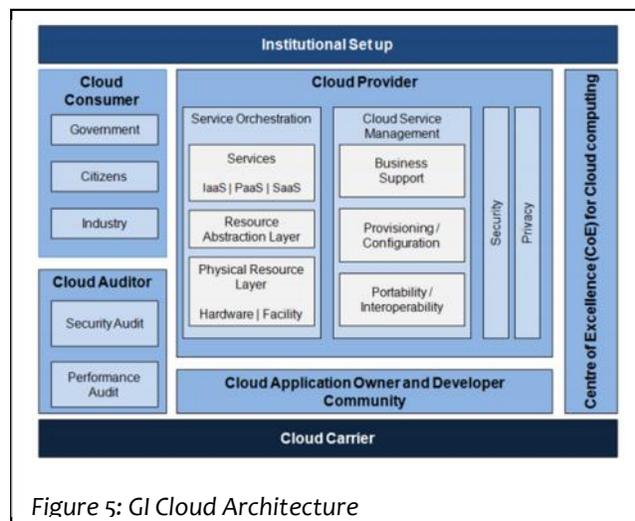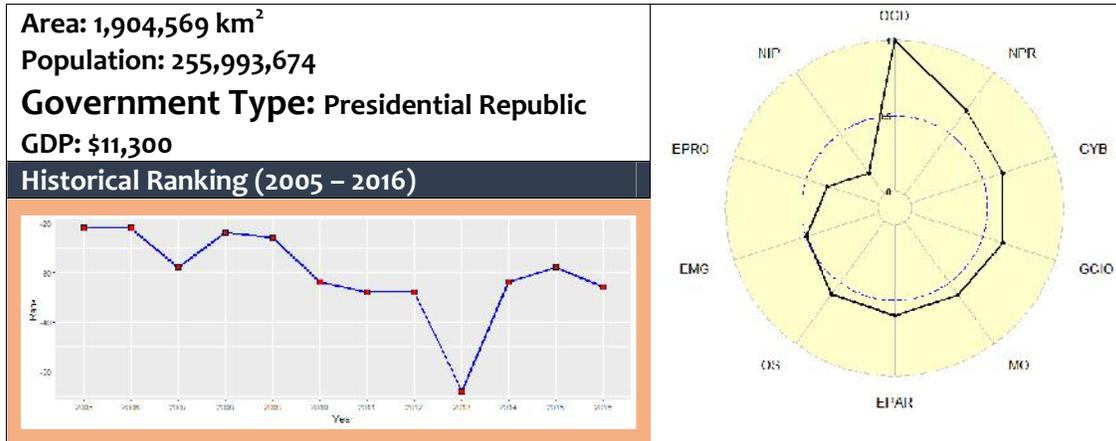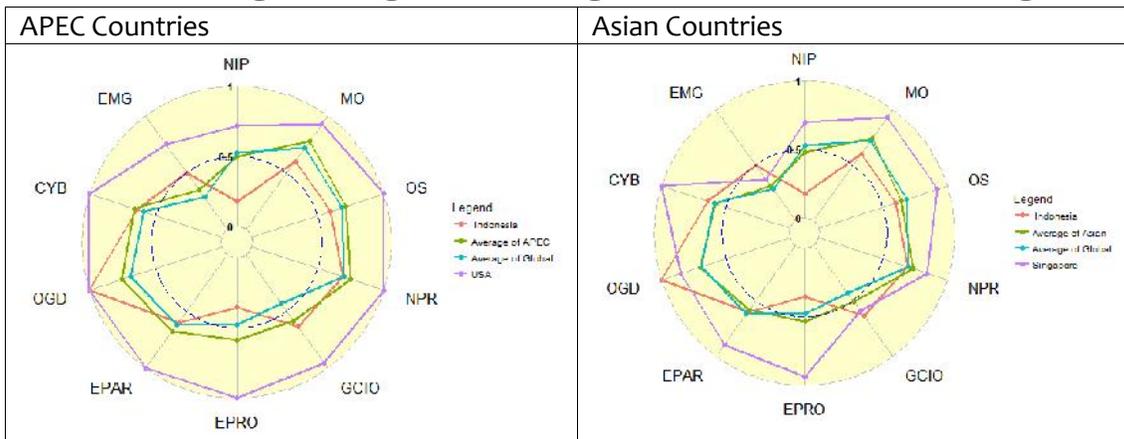
In contrast to Cloud Computing and IoT, Big Data is still in an initial stage in India. Government is still collecting ideas from community about Big Data, especially Big Data Analytics for Public Sector.

Indonesia

1 General Information

Area: 1,904,569 km²
Population: 255,993,674
Government Type: Presidential Republic
GDP: $11,300

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

APEC Countries	Asian Countries

Among APEC Countries, Indonesia has a better score than the average score of APEC in Open Government Data, Government CIO Institutionalization. As shown on the above picture, Indonesia is very low on the basic infrastructure. However, despite the lack basic infrastructure, Indonesia has been trying to take the benefit of emerging ICT such as Cloud Computing, Big Data, and IoT. Some progress in the area of emerging ICT has led Indonesia to get a better position than the average of APEC Countries.
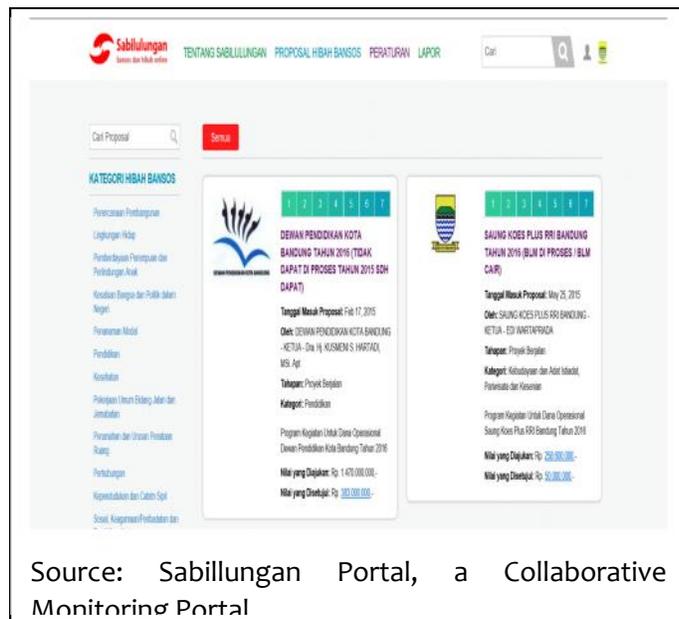
These achievements also reflect the position in Asian region in which Indonesia considerably approached Singapore in the Open Data and the use of emerging ICT.

3 E-Government Development

e-Government in Indonesia has been initiated formaly since 2003 along with the ratification of Presidential Instruction No. 3/2003 about implementatino of e-Government in Indonesia signed by the 5th President of Indonesia. Since 2014, there are two ministries responsible for e-Governmente-Government, i.e., Ministry of Communication and Information (Kominfo) and Ministry of Apparatus Empowerment/Bureaucratic Reform (MenPAN-RB). Kominfo deals with the technical aspect and MenPAN-RB take responsibility on policy and procedure.

E-Government in Indonesia is scattered all over government agencies either central and local. Most of them are not connected nor interoperable each other. The major theme of e-Government in Indonesia is improving public service for reducing corruption. Many e-Government applications are addressed to curb corruption such as e-budget system in Jakarta Province, e-Participation application provided by Presidential Task Force, and collaborative monitoring portal by Bandung City.

Source: Sabillungan Portal, a Collaborative Monitoring Portal

This year, Indonesia government is still processing the approvement for National e-Government Roadmap 2016-2019. This plan is aimed to optimize the use of information and communication technology in improving the public satisfaction of government services, promoting the economic growth, increasing the public engagement and trust, as well as improving the performance of public services.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 17.1% of people in Indonesia were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 1.2% have fixed-broadband subscriptions, and wired broadband subscription has reached 34.7%.

4.2 Management Optimization [MO]

In 2016, Indonesia is still processing the National e-Government Roadmap 2016-2019. The ultimate goal of this agenda is the optimization of the use of ICT that will address the public satisfaction of government service, economic growth, and public engagement. The strategy was designed for supporting President's Vision named NawaCita 2016-2019. E-Government is the embodiment of mission no. 2 of NawaCita; "to ensure that the government is clean, efficient, democratic and trusted".

For supporting the inter government interoperability, Kominfo has launched a guidance named "Handbook for inter government document interoperability". In addition to that, there are one case that Indonesia have a centralized government financial information system which integrate local and central government financial system named "State Treasury and Budgetary System" (SPAN).

4.3 Online Service [OS]

The score for Online Service is based on five investigating online services, i.e., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e-One-Stop Service and e-Health have the lowest score, compare to other three online services.

In terms of complexity level, most of Online Service in Indonesia has reached a transactional in which user can start the transaction from applying to receiving the service through the portal. In addition to that, all Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services. As for the One-Stop-Service, Indonesia adopts the decentralization in which all government agencies, especially the local government, have right to develop their own e-Governmente-Government solution for improving the public services.

For measuring the level of convenience, the third party application result has shown that all portals, except the e-Health, are above the average considerably in terms of speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 12 List of Online Services

Online Service	URL
e-Procurement	https://lpse.lkpp.go.id
e-Tax	https://djponline.pajak.go.id
e-Customs	https://www.insw.go.id/
e-Health	N/A
One-Stop Service	http://satulayanan.id/

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of Indonesia (http://www.indonesia.go.id) contains proper information for local citizens and foreigners. Information about Indonesia is available on the portal. People can find information about culture and heritage, demographic, and government. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is very poor, which is far below average both from PC and from Mobile Device. In addition, the portal does not provide the user with some functionalities such as social network integration, and an inquiry form.

4.5 Government CIO [GCIO]

Indonesia government has clearly defined the need of ICT leadership on e-Government. Major ministries have CIO as the proper role in part of their structure. CIO in ministerial level is not necessary a head of ICT-related bureau. Most of them are high rank officer which is one level below

the Minister. However, it depends on the size of organization, some organizations attach the role of CIO to the head of ICT-related bureau which is two level below the Minister. For the GCIO development program, Bandung Institute of Technology and Gadjah Mada University offer a Master Degree program specializing on CIO.

4.6 E-Government Promotion [EPRO]

There is a very few evidence to get the assurance that there were several programs in Indonesia related to the promotion of e-Government. However, there are two regular efforts in Indonesia that are aimed to measure the Indonesia e-Governmente-Government development. These efforts are Indonesian e-Government Ranking (PeGI) and ICT Pura. Moreover, Indonesia has established National ICT Council (Detiknas) that consist of government, business enterprise, and academia.

4.7 E-Participation [EPAR]

Indonesia enjoyed the young society whose demand in utilizing ICT is very big and active. These factors have driven Indonesia to equip e-Governmente-Government with mobile-friendly application. Despite its lack of basic infrastructure, e-participation related application is widely spread around the young generation. For instance, some government leaders have their website and provides the citizens with the alternative channel to communicate. The most interesting e-participation portal in Indonesia are lapor.go.id which is a portal for citizens to report any wrong-doing found in government service. This portal is maintained by Presidential Task Force and redirected to all government institutions.

4.8 Open Government Data [OGD]

In 2008, Indonesia launched Freedom of Information Act (UU No. 14/2008) to participate in the Freedom of Information Act movement around the world. To strengthen the implementation of these act, Indonesia has established Open Data Portal (http://data.go.id/) to provide public with government information. Jakarta City also developed Open Data at http://data.jakarta.go.id. To keep the information up-to-date, Indonesian government involves community in the area of Open Data to standardize and reformat all interesting data available on the government website to be displayed on the Open Data Portal.

4.9 Cyber Security [CYB]

Indonesia has ratified several laws related to cybersecurity. Some of them are as follow:

- Electronic Transaction Act No. 11/2008
- Electronic Transaction and System Provider Regulation No. 82/2012
- Information Security Guideline
- GOV-Cert
- ID-SIRTII
- ID-CERT
- ID-SIRTII

In addition to these laws, Indonesia has strengthened organization capacity for cybercrime countermeasure by setting up CERT-Indonesia and give a mandate to ID-SIRTII to exercise supervision over the continuous application of security measures.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Indonesia has officially launched a Software-as-a-Service solution called SiMaya by Circular of Ministry of State Apparatus Empowerment and Bureaucratic Reform No.5/2013. The service is hosted by Ministry of Communication and Information. And, it is available for all government agencies that needs such service.

Jakarta Provincial Government has been implementing Big Data in Jakarta Smart City applications. Data on the application is taken from reports on public complaints on several social media and also Qlue, a social media community reporting. Reports from the public then digitally mapped and integrated with smartcity.jakarta.go.id pages and Quick Response on Public Opinion (CROP) application. The city government officials are required to install this application on their smartphones, especially the officials responsible for residential areas, the local leader. Moreover, Internet of Things has been applied in most areas and government institutions such as CCTV monitoring for traffic and public facilities by Local Police Agency (TMC Polda Metro Jaya) and Bus Rapid Transit System in Jakarta.

5   Some Highlights

Among ten indicators in the current ranking, the Open Government Data, National Portal, and Cybersecurity are the top three indicators in Indonesia. Indonesia has sharpened the Open Data Initiatives so that the community can take the benefit of it such as more empowerment, more informed, and more expressive. The focus of advancing the Open Data is to create demand for Internet, hence, encourage the telecommunication company to increase the quality of telecommunication infrastructure. National Portal Indonesia contains useful information for local and also foreigners such as country information, tourism, and link to available e-Services. To increase trust of citizens for using e-Government service, ensuring the security of digital transactions has been taken into account in e-Government Development in Indonesia.

Indonesia Online Participation at http://lapor.go.id

Despite its lack of basic infrastructure, Indonesian government decided to strengthen government capacity in ICT by utilizing the emerging ICT. Some examples of current implementation are SiMaya for Cloud Computing Service, Bus tracking and IP CCTV for IoT implementation, and Public Report Analysis for the Big Data implementation. In addition to that, Indonesia government has decided to extend the Palapa Ring Project under the Indonesia Broadband Plan (IBP) 2015-2019. Two procurements have been announced and the bid winner was appointed in 2015. It is expected that in 2019, the telecommunication infrastructure will be improved significantly.
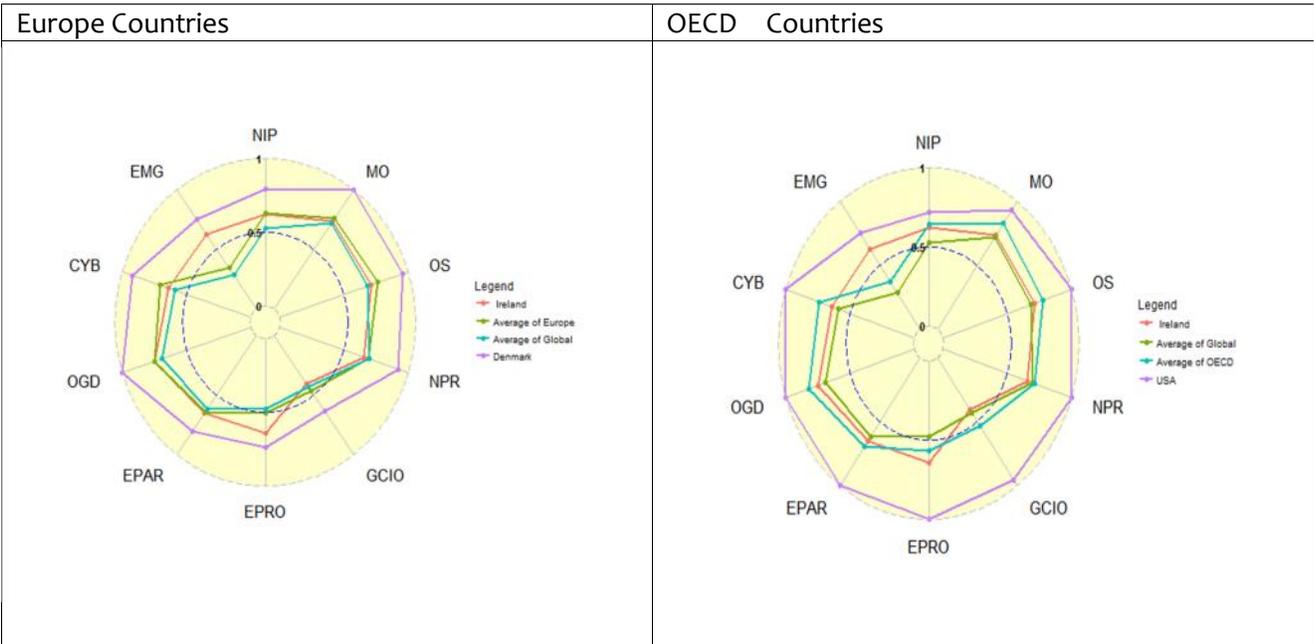
Ireland

1 General Information

Area: 70,273 km²
Population: 4,892,305
Government Type: republic, parliamentary democracy
GDP: $54,300

Historical Ranking (2005 – 2016)
Rank 20

2 Positioning in a global organization and a region
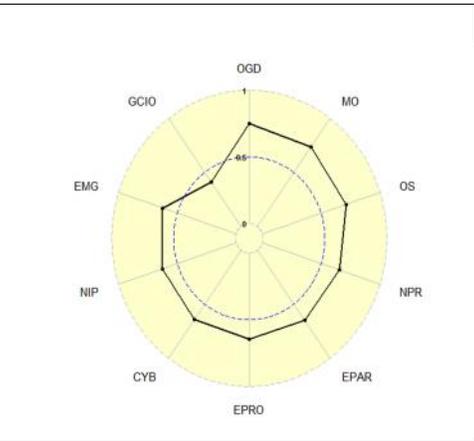
Europe Countries	OECD Countries

It is the first time for Ireland to be evaluated in Waseda e-Government ranking with a good position at 21. Compared to Europe countries, Ireland has got better performance on indicator of Management Optimization, E-Government Promotion, E-Participation and Emerging Technologies, especially the last one. Ireland also does well when compared with OECD countries.

3 E-Government Development

The latest e-Governmente-Government strategy in Ireland called "e-Governmente-Government 2012 – 2015" was published by COMD, a division within the Department of Public Expenditure & Reform, working with the Public Service CIO Council. The policy document is aimed to assist the programme for government and public service reform plan with the utilization of ICT technologies. Eight key projects including 44 specific actions are planned into the policy: Continue momentum with online services; Use new and emerging technologies and media; Ensure that e-Government is designed around real needs; Take steps to improve Take-Up; Ensure that public service data is available for Re-use; Digital mapping/Geographic information systems; Identity and authentication; Back-end integration. These actions show the priority of e-Governmente-Government policy in Ireland, with the commitment to deliver better services and promote collaboration between government and citizens, and reduce administrative burden for business as well. The task for monitoring ICT and e-Governmente-Government strategies implementation has been attributed to CMOD, who owns two cross-sectoral p groups: ICT frameworks steering group and Government networks programme board to take responsibility for strategical approaches to ICT development and overseeing the procurement details.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 79.7% of people in Ireland are Internet users according to the report released by ITU. 26.9% are fixed-broadband users and the wireless-broadband users are 81%.

4.2 Management Optimization [MO]

The Department of Public Expenditure and Reform has published national e-Government Strategy for 2012~2015 in co-work with the Public Service CIO Council to enhance public service delivery and better access to service channels for citizens and industries. For the interval governance structure, one division called CMOD (Centre for Management and Organization Development) in the Department of Public Expenditure and Reform is responsible for coordinating the development and implementation of e-Government policy and for central e-Government operation. Under the Public service CIO Council, it advises and requires report progress from different government agencies.

4.3 Online Service [OS]

Among five investigated online services, e-tax, and one-stop-service of Ireland are the better than the rest online services. They have provided the citizen the two way interaction with government, including e-payment, security, and automation. E-Health and E-Customs do not provide two-way interaction so far. The one-stop-service has listed the categories of each service in a brief links with simple name, which simplified the introduction and has saved time for citizens to search and access to the e-Services they want.

4.4 National Portal [NPR]

The National Portal (http://www.gov.ie/) is integrated with one-stop-service portal, which has stick to its succinct rule to keep information delivery simple and easy for users. If users want to check public services and entitlements, the citizen's information has provided information about every aspect of social life in Ireland interacting with government agencies including Social Welfare/ Education and Training/ Housing/ Employment and so on. However, for foreign users there could be more basic introduction to the nation.

4.5 Government CIO [GCIO]

In 2016, Ireland has appointed the third government CIO, Barry Lowry, the former head of IT in the Northern Ireland Civil Service. There has also established the Office of the Government Chief Information Officer (OGCIO) at the Department of Public Expenditure and Reform since 2013. In second degree government agency such as the Health Service Executive, the Office of Chief Information Officer (OCIO) has been launched to turn the eHealth Ireland Strategy into reality ensuring that technology supports healthcare efficiently and effectively throughout the whole system.

4.6 E-Government Promotion [EPRO]

The latest e-Government strategy 2010-2015 has a detailed website to introduce each aspect of the strategy itself within links on previous plans. Ireland has a very clear picture of the e-Government promotion structure, from the organizational preparedness on each sector such as Ministry/Government/Cabinet Committee on Public Service Reform, CMOD, Public Service CIO Council and different departments in government. In specific agency, CIO has played a role to supervise ICT policy implementation and internal reform by the ICT.

4.7 E-Participation [EPAR]

The remarkable one-stop-service in Ireland has enabled citizens to interact with government in a most simple and convenient way. By different categories, different situation and different purpose, it provides multiple channels for users to search, apply and contact the government agencies. In a feedback process, the portal has prepared a completed list for complaining on different departments and variable issues which citizens may face during their interaction with public sectors.

4.8 Open Government Data [OGD]

Ireland has launched Freedom of Information Action (FOI) in 2014, to promise that every citizen has legal rights on accessing official records held by Government Departments and all public bodies, having personal information held on them corrected or updated where such information is incomplete, incorrect or misleading and being given reasons for decisions taken by public bodies that affect them. The first daft Open Government Partnership (OGP) National Action Plan has also been published at the OGP Europe Regional Conference in 2014. To the open data website (https://data.gov.ie/data), there has 4322 datasets by 85 publishers in government agencies so far.

4.9 Cyber Security [CYB]

Ireland has made several regulations and Acts related to Cyber Security, such as the Consumer Protection (Consumer Information) Regulations 2012, Data Protection Act2003, and Electronic

Commerce Act 2000. To the strategical side, The National Cyber Security Strategy has been published in 2015 and the Data Protection Strategy2014-2016 was released earlier. At the meanwhile, organizational preparedness has been as the establishment of The National Cyber Security Centre(NCS) to operate tasks on network and information security. The NCSC encompasses the State's national/governmental Computer Security Incident Response Team (CSIRT-IE). CSIRT-IE is seeking international recognition with respected peers in the respective government and national CSIRT communities so that it can effectively undertake its work on situational awareness and incident response. CSIRT-IE is initially focusing on the State sector and acts as a national point of contact.

4.10 The use of Emerging ICT [EMG]

Government of Ireland has regarded the merging ICT as methods to reform public service, the key element of public service's ICT strategy. Cloud Computing Strategy has been made to support the reform, to engage with Cloud Computing and to undertake a comprehensive programme of Data Centre Consolidation. Considering Ireland's effort to promote open data, there should be more related legal framework and Data management engaged into the government's official departments.

5 Some Highlights

It is the first year for Ireland to enter Waseda e-Governmente-Government ranking, with 20th position among 65 countries. Scores on each indicator are balanced, and Ireland showed its strength on the indicator of "Online Service" and "Management Optimization", which also are the common strong points for Top 20 countries. The one stop service of Ireland (http://www.gov.ie/) tries to minimize the website to provide most of the information and links to government agencies on simple options. It is also available for users to search information by 4 ordinary needs as "apply/find/complain/pay" on the first-level page. However, more information could be added to the national portal for non-Irish people to get known about the nation, in additions to the tourism website for Ireland. With a good foundation of e-Governmente-Government plans and GCIO structures, Ireland may gain more progress on the e-Governmente-Government development in the future.
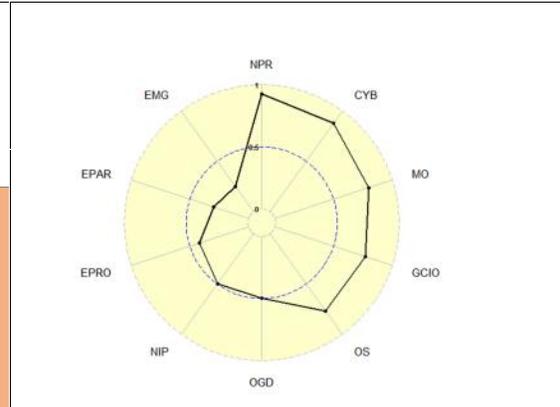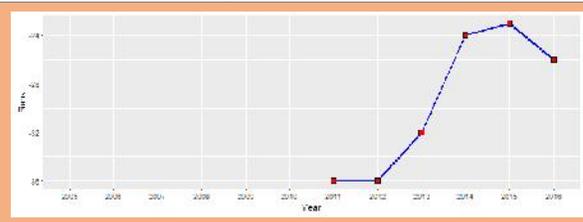
Israel

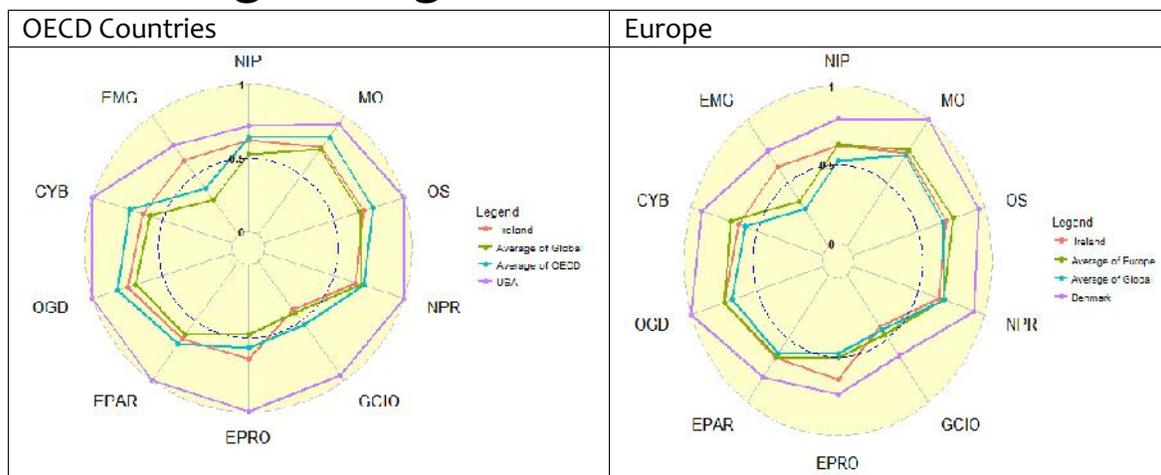## 1 General Information

Area: 20,770 km²
Population: 8,049,314
Government Type: Parliamentary Democracy
GDP: $34,300
Historical Ranking (2006-2016):

2 Positioning in a region

OECD Countries	Europe

3 E-Government Development

In recent days Israel has stepped forward in e-Governmente-Government services and joined the top 20 countries according to the United Nations. The strong effort and dedication in providing its citizens all information access and transparency and citizen participation in government has helped Israel advance to join top leaders in e-Governmente-Government. Started e-Governmente-Government projects as early as 1997, now Israel is a more advanced country in e-Governmente-Government development compare to others in Western Asia. In the next years, the Israel government intends to focus on personalization government portal for Israeli citizens (my.gov.il); deployment of Smart-ID card for all citizens; developing new cross-government applications; develop infrastructure for cellular e-Gov; deploying Digital Signature in all government forms and upgrade all government websites with web 2.0 tools.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

The State of Israel is a parliamentary republic in the Middle East, along the eastern shore of the Mediterranean Sea in Western Asia. The country covers an area of 20,770 square kilometers. It is bordered by Lebanon to the north, Syria to the north-east, Jordan to the east, Egypt to the south-west and the Mediterranean Sea to the west. It had a population of 7,821,850 in 2013 and the GDP per capital was about USD $36,200. Israel joined the OECD in 2010. As of 2013, 70.8% of Israeli citizens connected to the Internet. 25.7% of citizens are broadband subscribers.

4.2 Management Optimization [MO]

E-Government projects in Israel began as early as the late 90's with the governmental Internet committee, the Tehila and Shoham (governmental payment services), Merkava (ERP system to government offices) and Tamar (public key infrastructure).

In termss of e-Government, Israel is an advanced country within the region. E-Government in Israel is well matured and widely used in administration implemented using the five Layer model of e-Government. The overall e-Governmente-Government strategy places enhanced information access and integration, based on the Merkava concept, at the core. A strategic solution enabling the government as a whole to perfectly harness information and knowledge resources in order to achieve an order of magnitude improvements in effectiveness, efficiency and service delivery

4.3 Online Service [OS]

The E-signature Law, the Data Communication Law and Anti-spam Law are considered pieces of the basic legal framework for interface applications. The Israeli government is currently providing a comprehensive e-commerce services including e-tender, e-tax, and e-payment services at transactional level. E-voting system was tested in some areas but security issues and some flaws in the implementation process hindered the full take-up. Other e-Services allow users to download forms such as Consular Services, Civil Registration Services, and Social Security Services.

4.4 National Portal [NPR]

The Israel government portal http://www.gov.il/firstgov/ is part of the e-Government project; its goal is to improve and reinforce ties and communication between citizens and government institutions. The portal is the single gateway to all the governmental ministries and services on the Internet. The portal provides the entire range of services and information supplied by the government to citizens of the state Citizens can access information on government services in several ways: by target audience, topics and life events. Citizens can also use the portal's electronic identity management feature 'My Gov.' to filter content that interests them and to access the full range of online government services and make online payments.

The website presents information in five major categories: Ministries and Authorities (Information from the websites of Government Ministries), Guides (Information tailored to key target audiences such as tourists, students, immigrants, and investors), Subjects (Information regarding historic events of the state), Forms and Payments. It also has column with links to the gov.il forum, the tourism website and about Israel; and provides weather and exchange rate information for citizens.

Despite the availability of the website in Hebrew, English and Arabic; mobile services, SNS and blog features are only available on the Hebrew website which is also richer in contents than the other language websites. The website also updates information about governmental activities and new e-Governmente-Government initiatives.

4.5 Government CIO [GCIO]

Israeli public administration has appointed the first government CIO in 2012 after creating the CIO titled position under the Ministry of Finance. There was an initiative in the government to appoint CIOs in the government starting from 2012. The Ministry of Finance coordinates a sophisticated initiative for e-Governmente-Government, which integrates all ministries, and is establishing highly developed services for citizens. The E-Government Department under the Ministry of Finance is in charge of e-Governmente-Government implementation and coordination. However, there is no CIO related education in the Israel's current education system. On the other hand, there is significant number of CIOs and CIO positions within the private sector in the country.

4.6 E-Government Promotion [EPRO]

As far as specific e-Governmente-Government promotion measure is concerned, the Israel government has directed all government ministries, through the Accountant General (responsible for e-Governmente-Government practices), to include the www.gov.il portal logo and URL in any official publication (such as documents, envelopes, payment vouchers, etc.) for over a decade.

The Government of Israel has adopted and promoted the policy of open government, and has joined the International Open Government Partnership, which also promotes Open Government Policy. The goal of an open government is to empower the individual, the society and the state on the basis of three fundamental principles: Transparency through active reporting to the public, citizen participation and Accountability. Because e-Governmente-Government has become an integral part of public sector transformation nowadays.

4.7 E-Participation [EPAR]

The Government of Israel is committed to freedom of information, and to promoting transparency and accessibility to data and information produced in the public sector. Now Israel is one of the figurehead countries which promote online public involvement. Most of public information such as elected officials, legislation, national budget information, etc. of Israeli government is available online. In Israeli government's websites, sharing, tagging and SNS tools such as Facebook, Twitter, YouTube, Flicks, etc. are widely adopted. Both Prime Minister and President of Israel have their own websites which provide feedback functions to communicate with citizens.

4.8 Open Government Data [OGD]

Open Government Policy—as it has developed throughout the Western world in recent years—aims to harness new technologies to improve communication between the government and its citizens. It also aims to correctly utilize and exploit the information that is at the disposal of the government, in order to bring about social and economic benefits. This policy paper proposes a model for the successful implementation of Open Government Policy in Israel.

In advancing the principles of transparency, making information accessible to the public, and public participation, the primary advantage of the digital age is an ability to supervise the actions of government.

Another advantage is that an increased level of accessibility to data in different fields leads to public and economic benefits and encourages development and initiatives. In addition, it goes without saying that public participation is an excellent tool for actualizing the concept of the "wisdom of the crowd" (the collective perception of a group of people, who are not necessarily experts).

4.9 The use of Emerging ICT [EMG]

A special program was established to prioritize the cyber defense industry, in cooperation with the Ministry of Economy, which will invest approximately 22 million dollars in R&D between 2013 and 2015. Perhaps, the greatest asset though is Israel human capital. Due to the security threat, the government has a record number of young people who enter the fields of technology and cyber defense, every year, at the young age of 18, within the framework of their military service. They are young, dynamic and creative. In the field of cyber defense, the threat matrix is changing constantly and one must be incredibly flexible and creative.

5 Some Highlights

Israeli Prime Minister Binyamin Netanyahu designated the southern metropolitan area of Beer Sheva, as an international cyber center. All of governmental and military institutions which address the cyber threat will be transferred to city of Beer Sheva,. Israel also acceded to the Budapest Cybercrime Convention in 2013. The government will continue to support other cooperation mechanisms that contribute to harmonizing cyber defense tools. In Israel they believe that cyber is not just a threat, but rather an opportunity for creative thought and economic growth. As the reliance on the Internet and the virtual realm increases, the need for cyber defense will only grow.
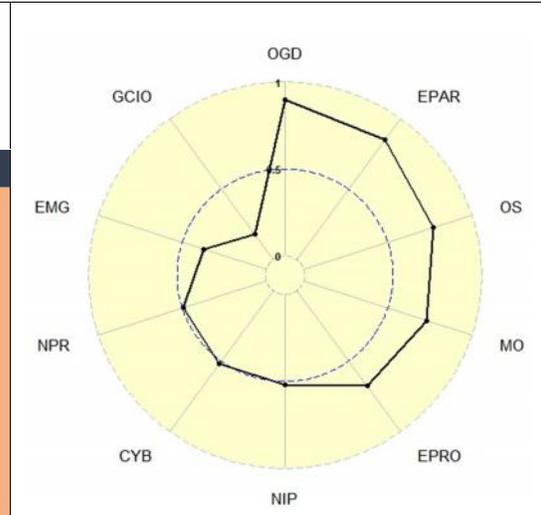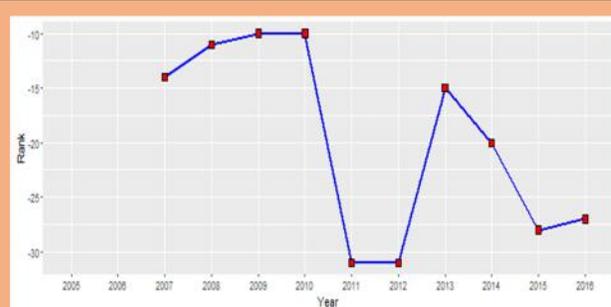
Italy

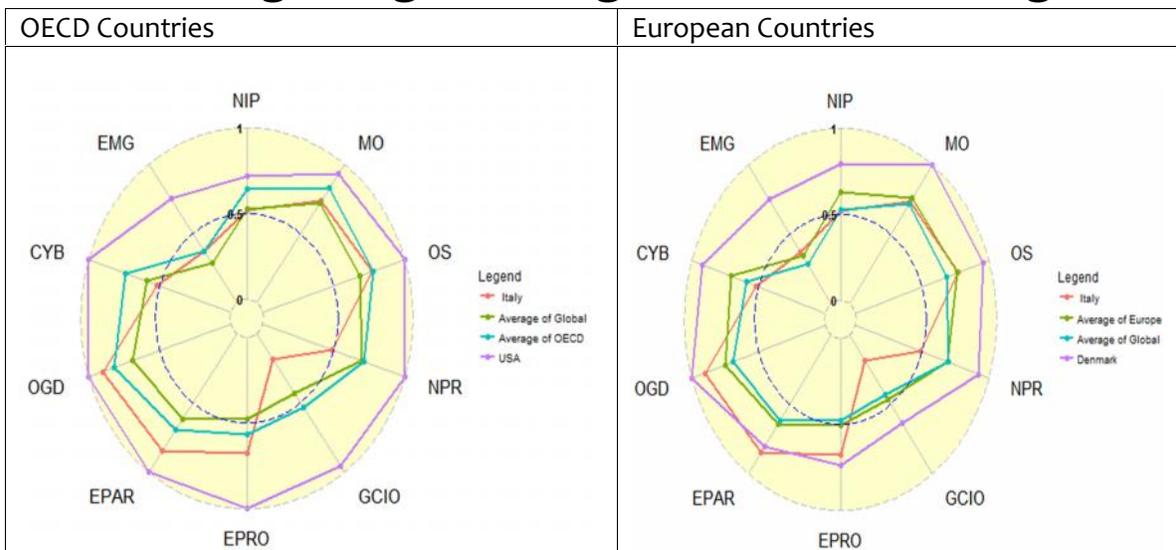## 1 General Information

Area: 301,340 km²
Population: 61,855,120
Government Type: Republic
GDP: $35,800

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

OECD Countries	European Countries

Among OECD Countries, all indicators except GCIO indicator is above or same with the average score of OECD members. GCIO indicator of Italy get the worst score in European countries and also in OECD. Amongst European countries, Italy is placed below Denmark. However, the e-Participation (EPAR) indicator of Italy is better than those of Denmark, the best country in Europe region.

3 E-Government Development

The Agency for Digital Italy (L'Agenzia per l'Italia Digitale: AGID) has been set up with the task of monitoring the implementation plans for ICT in public administrations in line with the Digital Agenda for Europe, thus creating the "Italian Digital Agenda" in line with the Digital Administration Code (Codice dell'Amministrazione Digitale, CAD) at the end of March 2014. And AGID also reminded public administrations that they are obliged by a 2014 law

Strategy targets	Provide 85 per cent of population with access to broadband connection services above 100Mbps
	Provide access to broadband connection services above 30Mbps to 100 per cent of population
	Provide access to broadband connection services of at least 100Mbps for public administration, local schools, health care facilities, industrial parks, high demographic density areas
Strategy	Net neutrality, open networks, equivalent and non-discriminatory access conditions, integrated wired and wireless network approach
	Lower economic barriers for infrastructures deployment
	Coordinated management of underground facilities through the establishment of a Cadaster of utility infrastructures under and above ground to monitor the roll-outs and to take full advantage of existing infrastructures
	The Plan has been divided into clusters, based on NGA market competition and availability
	Uniform national limits to European ones in the field of electro-magnetism

The Italian strategy for next generation access network

to offer electronic payment solutions. AGID is offering support, by organizing meetings with municipal and regional administrations across the country, explaining the benefits of e-Payment solutions, and by introducing possible solutions and solution providers. Offering e-Payment to citizens and companies is key to the growth of e-Government services, AGID writes.

In addition to legislative measures for general profiles and strategy in the field of digital agenda, the Council of Ministers has approved the Digital Growth Plan 2014-2020 and the UltraWideband Plan. Both plans have been defined by AGID and the Ministry of Economic Development under the coordination of the Prime Minister.

The national plan for ultra-wideband is synergistic to the Strategy for Growth Digital. The strategy has a dynamic character, to be able to adapt gradually to the scenarios in the reference period 2014-2020. It 'a strategy aimed at growing digital citizens and businesses, also using the levers public. Integrate what has been achieved in a subsidiary or under construction in both the public sector, both in the private and must be realized a complete synergy with other public strategies in place, is attributable to the national government is a regional responsibility, to put helpfully "to system "objectives, processes and results.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 62% of people in Switzerland were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 23.5% have fixed-broadband subscriptions, and wired broadband subscription has reach 70.9%.

4.2 Management Optimization [MO]

This "Italian Digital Agenda" guideline provides operational guidance for Italian public administrations towards the implementation process of the national strategy for improving public information assets. Among other topics, organizational and operational schemes are proposed, technical standards and best practices are highlighted and cost and licensing aspects are considered.

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five e-Tax, and e-Customs are the best performer among five online services.

In terms of complexity level, only e-Tax, and e-Customs have reach interaction level where the citizen can obtain the service without necessarily visit to the government office. Other services have the downloadable form and like to other service. In tern of enable citizens to securely access e-Services, the Italian Government has also developed the National Services Card (CNS). It is a smart card allowing for the secured identification of citizens online.

To measure the level of convenience, the third party application result has showed that e-Tax, and e-Customs and One-Stop Service portals are above the average considerably in terms of speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights.

Table 13 List of Online Services

Online Service	URL
e-Procurement	https://www.acquistinretepa.it/
e-Tax	https://telematici.agenziaentrate.gov.it/Main/index.jsp
e-Customs	https://assistenza.agenziadogane.it/assistenza/index.asp
e-Health	http://www.salute.gov.it/
One-Stop Service	http://www.agid.gov.it/

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. The "http://www.governo.it/" government portal provides a gateway for users to access government information easily, and "http://www.agid.gov.it/" is the Italia Digital Agenda which provides single-window access to information and government services to citizens and organizations/businesses. Moreover, http://www.impresainungiorno.gov.it/ is e-Government portal for business which has been offering useful information on a wide range of topics that are of interest to businesses. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is below average on both from PC and from Mobile Device. And also from the user experience aspect, this website is not much functionality.

4.5 Government CIO [GCIO]

There is no dedicated GCIO post. There are no specific laws or mandates for CIO positions in Italy. AGID under the Prime Minister's Office is the leading institution for Digital Italy and is responsible for the provision of technical support and consultancy for the Italian Public Administration and the Italian Government. And Director of AGID is partly addresses the GCIO position.

4.6 E-Government Promotion [EPRO]

The passage of the e-Government Code (Codice dell'Amministrazione Digitale) in 2006 marked a milestone in Italian e-Government efforts. Passage of such legislation heralded stronger emphasis on e-Government in Italy. This also provided the legal framework for succeeding e-Government initiatives both at the national and local level. And this situation is similar to the one in any developed countries where the IT Culture has been embraced in the society.
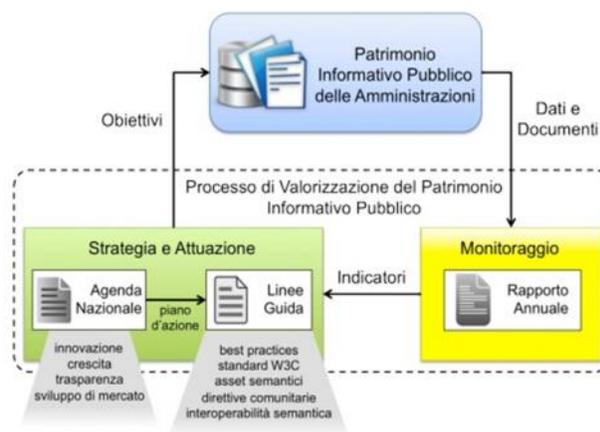
4.7 E-Participation [EPAR]

Having web forums to enable citizens to participate in e-discussions is one of the remarkable functions that central and local Italian government is seeking to deploy at length. And Polls delivered via the national portal allow citizens to express their views on topics raised by some administrators. Generally speaking, Italy has a certain level of understanding of e-participation in decision-making policies.

In addition, since June 2015 the beta of Italian Login "http://design.italia.it/" was initiated. The project Italian Login pursues the creation of an ecosystem of information and services, as provided by the plan of Digital Growth, the Government's strategy for innovation in the country. Italy Login also represents a first step towards the definition of a coherent identity for the central public administration.

4.8 Open Government Data [OGD]

AGID update annually the national guidelines for the enhancement of public information, as indicated by the Article 52 of the Government Code. It provides guidance and recommendations to which the PA is required to comply in releasing public data interoperable nationwide. The guidelines propose as below; and also suggest the cost aspects and licenses that the PA must consider the exposition of the data.

Process of public information enhancement

- a model for open data and metadata
- an operational / organizational model for the production and publication of open data
- technical standards and relevant best practices

The "http://www.dati.gov.it/" is e-Government portal for open data that is promoted by the Ministry for Public Administration and Innovation in order to enable the access to the data of all the Italian authorities, both at the national and local level. It contains links and descriptions for about 10,347 datasets produced by 76 governments including Geographical data and 695 Statistical data as one the end of May, 2016. The data available any citizen intending to use it to develop applications for analysis or study purposes, in a complete, quick and accessible to all format. In local level such Roma, also has open data http://www.opendata.provincia.roma.it/ however it is not much of data set.

4.9 Cyber Security [CYB]

In Italy, since 2013 following the adoption of the Prime Minister's "Decree Containing Strategies Guidelines for the National Cyber Protection and ICT Security", the Cybersecurity Working Group was established under the Committee for the Security of the Republic, and chaired by Department for Intelligence and Security (DIS) and developed the National Strategic Framework for Cyberspace Security 2013. In addition, the Ministry of the Interior established the National Anti-Cybercrime Center for the Protection of Critical Infrastructure (Centro Nazionale Anticrimine Informatico per la Protezione delle Infrastrutture Critiche - CNAIPIC) as a special unit within the Postal and Communication Police Service.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). The strategy for implementing Government Cloud has been approved by Italian Digital Agenda. Along with the implementation of Government Cloud, it started the second phase of the Consip tender for the supply to the PA central and local cloud computing services and were sent invitation letters to competitors who have pre-qualified, responding to tender. In addition, Italy's Revenue Agency used the computer system to compare taxpayers' income declarations with their expenditures, it works under concept of Big government meets big data.

5 Some Highlights

Among ten indicators in the current ranking, the Open Government, e-Participation and Online service are the top indicator in Italy. However, the weak point in Italy is about the use of emerging ICT for government and GCIO. In June 2015, AGID launched a new version of the National Open Data portal: dati.gov.it in order to promote the quality of the data published. The new portal ensures uniformity of the contents of the catalog, which now includes metadata that describe open data held by the public authorities involved. Moreover, it publishes only the metadata of data available in formats recognized as open and associated with open licenses compatible with the definition of open data. Moreover, AGID launched the "DATA4ALL", a platform which gathers the three thematic portals (SoldiPubblici, ItaliaSicura and OpenExpo). "DATA4ALL" provides visualization tools and pathways to make the big public administration information accessible and reusable assets to non-experts, together in a single virtual space open data of some important projects undertaken by the Italian Government.

Public System for Digital Identity Management (SPID) is a unique personal code that certifies the digital identity of citizens and businesses. SPID can be used to access and enjoy all the telematic

services of the PA which a unique identification code. The launch in April 2015 within the system SPID is one of the priorities set by the President of the Council of Ministers. In addition, the Italian electronic identity card grants access to secure e-Government services requiring electronic identification, and the possibility to perform related online transactions. Strictly for electronic use, they also have the National Services Card (NSC). Online interfaces are also provided for citizens to access to e-Procurement, e-Tax, and e-Customs, which have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.
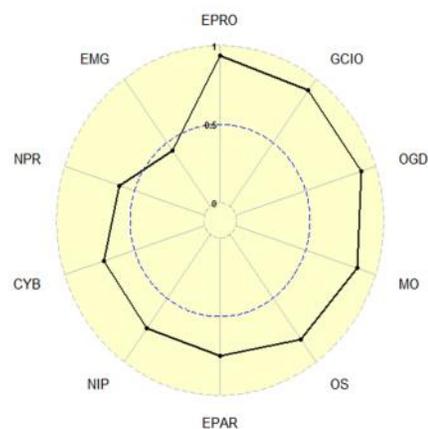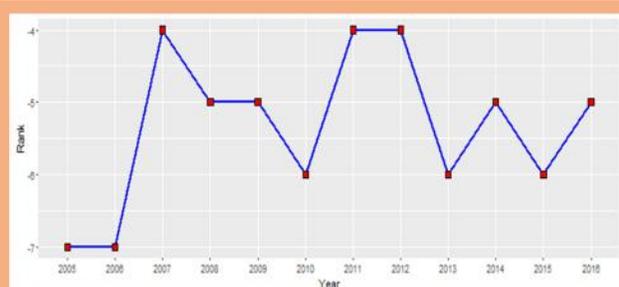
Japan

1   General Information

Area: 377,915km²

Population: 126,919,659

Government Type: a parliamentary government with a constitutional monarchy

GDP: $38,200

Historical Ranking (2005 – 2016)

2   Positioning in a global organization and a region
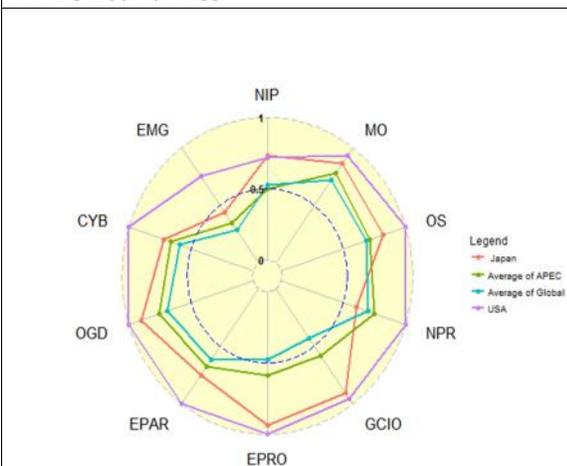
APEC Economies	OECD Countries
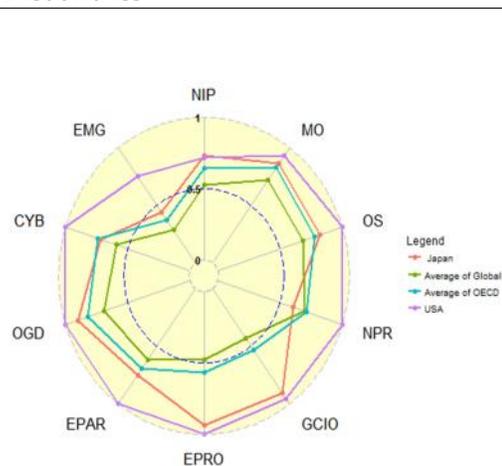
Japan has comparatively high performance on most of the indicators than average level of APEC and OECD members, except the indicator of National Portal. Compared to USA who ranked first in 2016, Japan has better or close scores of Network Preparedness and GCIO.

3 Government Development

E-Government strategies in Japan have gone through several stages along with the technical and social change, the latest e-Governmente-Government initiative remains the "declaration to be the world's most advanced IT nations" published in 2014. Japan founded a comprehensive system for decision and implement in e-Governmente-Government plan, the participating sectors include IT strategic headquarters, Government program management office, Government CIO, CIOs Council, etc. It is a compliment to Japan's meticulous e-Governmente-Government initiatives which cascaded nation's objectives into different plans, such as the promotion of online use of administrative procedures and optimization of work and systems, local e-Governmente-Governments and so on. Legible and distinguished goals from different initiatives possess their own policy evaluation, in order to confirm the best implement on each phase. Moreover, Japan has established GCIO system in each level of government to ensure the implement of ICT strategies into organizations and societies.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 90.6% of people in Japan have used Internet in their daily life. According to ITU's report, about 29.3% are fixed-broadband users and the wireless-broadband users are 121.4%. Internet penetration in Japan has reached a high level compared to other countries.

4.2 Management Optimization [MO]

Japan is one of the earliest countries to push the integrated government systems and has made lots of progress such as the GPKI (Government Public Key Infrastructure) and "Kasumigaseki one" system. As of 2011, most of the 87-optimization target areas are in the implementation phase. IT Headquarter started "The most advanced IT Nation" Strategy to implement e-Governmente-Government as the priority area productivity and efficiency since 2013.

4.3 Online Service [OS]

Most of the Online application systems such as e-Tax, e-Payment, and social security services provide transactional operations (covering all the service processes including requests, payments, decisions, and delivery). There are many various online services by e-Governmente-Government, but the e-Governmente-Government development in local level lack of usage. It may be related to the reality of aging society faced by Japan that most of the residences are aging people in local area who are not familiar to the e-Service systems. Therefore, the online service sites are less designed and regularly updated.

4.4 National Portal [NPR]

National Portal of Japan (http://www.japan.go.jp/index.html) is a new public site for introducing Japan to people, mainly for the non-citizens. It contains proper information about different aspects of Japan, the portal has provided the latest national news, demographic information, political initiatives, cultures, government agencies introduction and so on. It also has presented the official JapanGov APP to deliver users up-to-date information about Japan including photos and videos.

4.5 Government CIO [GCIO]

Each central ministry has a CIO who is appointed among senior staff within the ministry (mainly Director General of administration) and an assistant CIO who is an expert recruited externally. Federal CIO Council composed of Ministry CIOs has the authority to decide many rules on in-house ICT installation and online services. The percentage of CIO appointments at the prefecture level is 90% and 85% is at the city level in 2014.The government established a Government CIO as a core of all Ministry CIOs in November 2012. Mr. Endoh, EVP of Ricoh was appointed to the first government CIO and has worked very efficiently with Federal CIO council.

4.6 E-Government Promotion [EPRO]

There are four organizations behind promotion of e-Government in Japan. Namely: The e-Government Evaluation Committee; the Government Promotion and Management Office of IT Policy Office of Cabinet Secretariat, the Administrative Management Bureau of the Ministry of Internal Affairs and Communications; and the Program Management Offices (PMO). They are responsible for creating a new set of priority policies every year to identify crucial issues that must be solved during short-term time and also analyze its contribution to the long-term benefits. The national IT strategies and the frameworks of action plans are developed by the IT Strategic Headquarters. It has subordinate organs, which include the CIO Council consisting of all the CIOs and their assistants in each Ministry. MIC created the National e-Governmente-Government promotion council and has made various PR activities.

4.7 E-Participation [EPAR]

2016 is the first year for the Japanese Government adopting the Social Security and Tax number system (My number) This system needs e-participation by all Japanese citizens and companies to develop efficiency in administration and enhance public convenient. However, after a trial practice, the government has announced the system has to delay until July 2017 which is half a year later than the plan. How to encourage citizens to join the system is one of the big problems for government agencies now in Japan.

4.8 Open Government Data [OGD]

In October, 2013, Open data charter action plan was announced, and then the government has released using standard version1.0 for open data in 2014. Open data has become one of Central topics of IT policy in Japan. Until June of 2016, the data site (http://www.data.go.jp/) has over than 15,000s datasets presented. Users can search the information by publishing government agencies, groups, tags and formats.

4.9 Cyber Security [CYB]

Japan boasts the world's highest level of telecommunications infrastructure. The increased use and application of information and communication technology means, the Japanese government successively prepared and revised strategies, annual plans, sector-specific policies and other measures in pursuit of ensuring cyber security, and based on these strategies and measures, forged cooperation among industry, academia and government stakeholders in addressing these challenges. Japan is dedicated to utilize these extensive experience and knowledge in promoting international cooperation. Japan has adopted a range of information security measures with due consideration

given to the viewpoints of the nation and users, based on the "Information Security Strategy for Protecting the Nation" (May 2010) and its annual plan, "Information Security 2010" and "Information Security 2011". In June 2013 the Japan Revitalization Strategy and the Cyber security Strategy which were developed, and summarizes Japan's basic policy and its priority areas for international cooperation and mutual assistance in the field of cyber security, so that it can be presented as a package to the stakeholders both in Japan and overseas. Japan will promote initiatives for international cooperation and mutual assistance in cyber security based on this strategy under the common understanding shared among all domestic stakeholders including those from industries, academia and the government. The just renamed National Centre of Incident Readiness and Strategy for Cyber Security serves as the secretariat for Japanese governments' cyber-security strategy headquarters

4.10 The use of Emerging ICT [EMG]

Japan has moved fast at the emerging ICT application into public sectors. There are already some national plans such as Smart Cloud Strategy, Big Data in Government, etc. Cloud computing in governmental platform is at the ongoing phase. The ministry of Economy, Trade and Industry also has sponsored to public projects which have been selected to facilitate the IOT utilization. The next stage should be making the draft for legal framework on emerging technologies applications.

5 Some Highlights

As one of the advanced e-Governmente-Government nation, Japan keeps its leading impetus at the TOP 10 of ranking. As aforementioned situation, Japan government has built a sophisticated promotion system for e-Governmente-Government initiatives and precise GCIO regimes into every rank of government (Central and local government; different government agencies) to assure the implementation and evaluation process of e-Governmente-Government initiatives. It can be reported on high scores on "Government CIO" and "E-Government Promotion". Japan also continues to update its online service system as the objective of initiatives to simplify administrative procedures and working systems. However, National Portal seems to be the only weak point for e-Governmente-Government in Japan. (http://www.japan.go.jp/) Some basic information including demographic data and introduction to Japan political situation have been provided at the site, but it still needs much more necessary functions to serve visitor's needs rather than providing information only. In consideration of the coming Tokyo Olympic Games that massive visitors would choose national portal as reference, it is a chance and challenge at the same time for Japan government to reconsider that what is the appropriate way to provide information and deliver e-Service to Japanese and non-Japanese through Internet.

Kazakhstan

1 General Information

Area: 2,724,900 sq km
Population: 18,157,122
Government Type: Presidential Republic
GDP: $24,700
Historical Ranking (2006-20016)
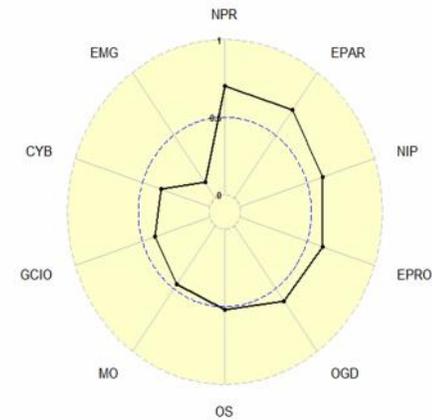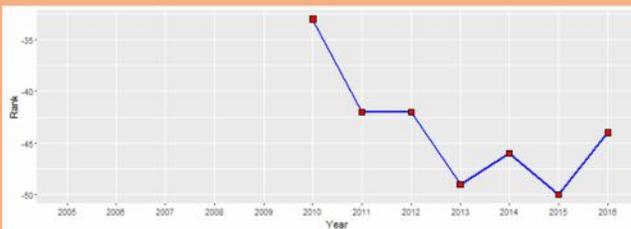
2 Positioning in a global organization and a region

ASIAN Countries
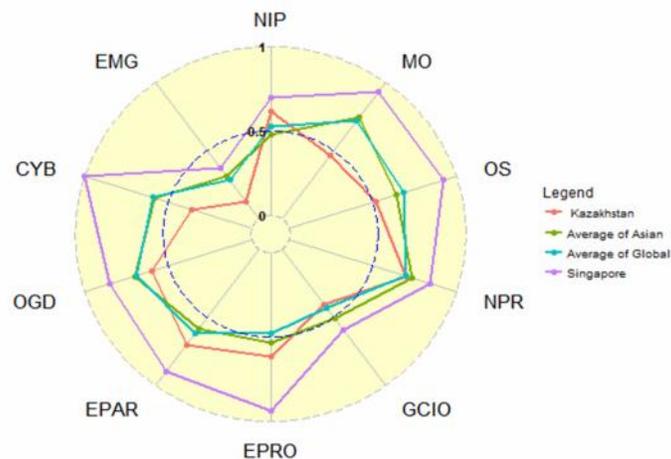
3 E-Government Development

In 1997 the Head of the state has addressed with the Message to the people of the country "Prosperity, safety and welfare improvement of all Kazakhs" which specified strategic priorities of

development of Kazakhstan till 2030. In 2009 completed realization of decade of Strategic plan of development of the Republic of Kazakhstan which main objectives are achieved. Key directions and strategic targets of next decade are specified by Strategic plan of development of Kazakhstan till 2020. Efforts of the state will be concentrated on five key directions: preparation for post-crisis development; accelerated diversification of the economy; investing in the future; services for citizens and ensuring international consent, security, stability of international relations. In 2011, the E-Government of Kazakhstan (www.egov.kz) provided 2,000 information services, 219 interactive and transaction service online, granted 917,000 e-digital signatures and 3.500 e-licenses.

4   By Indicators

4.1   Network Infrastructure Preparedness [NIP]

In 2015, Kazakhstan Internet users is about 9.7 million users with the penetration was55.5%. The Internet in Kazakhstan is growing rapidly. The mobile penetration is 180%; the country was also claiming an impressive figure of 58 Internet users per 100 people. Most importantly, by early 2016 mobile broadband services comprised around one third of the total mobile subscriber base as this service platform continued on a rapid growth path.

4.2   Management Optimization [MO]

The State Program "Information Kazakhstan – 2020" was approved by the President on January 8, 2013.The main purpose of the Program is creation of conditions for transition to the information society. The key objectives of the Program are: (i) Ensuring efficiency of the state administration system; (ii) Ensuring accessibility of information and communication infrastructure; (iii) Establishment of information environment necessary for social, economic and cultural development of society; and (iv) Development of the national information space.

4.3   Online Service [OS]

http://egov.kz/ is one-stop service, it is divided for citizens and businesses, The popular e-Services in Kazakhstan are payment for tax on vehicles, get the certificate of the registered legal entity, Registration of persons driving vehicles on the basis of power of attorney, except for the registration which is carried out by the Ministry of Agriculture and payment of the fee for traffic regulations violations.

www.goszakup.gov.kz is a central facility for all public sector contracting authorities to announce procurement opportunities and award notifications. It provides information about coming, accepted and current tenders and allows online submission of tenders. Some e-Services were introduced with full transaction, but almost of them are at the level of information provision and downloading forms and will be gradually enhanced to reach transactional level in the coming years.

4.4   National Portal [NPR]

The government one-stop-shop portal www.egov.kz was launched in 2006. The portal services are available in 3 languages: Kazakh, Russian and English. E-Government of Kazakhstan (www.egov.kz) provides 2,000 information services, 219 interactive and transaction service online. The portal provides an on-line counseling service, allowing citizens to address any government agency

concerning certain issues. Registered users may have access to a wider range of services including "Mail me" functions, common scheduling and e-mail accounts. The portal also provides information on the national e-Governmente-Government development program and its projects and allows access to the reports on e-Governmente-Government implementation results.

The portal also lacks accessibility features: it doesn't allow changing font size of the text and spacing between words, and no text vocalization is provided. More advanced content and functions such as multimedia shows, sharing, tagging, podcasts are still to be introduced but SNS feature are also introduced.

4.5 Government CIO [GCIO]

There is no official designated Government CIO. However, there are a de-facto two government organizations that share the responsibilities of the CIO: National ICT Holding Zerde and JSC National Information Technologies

4.6 E-Government Promotion [EPRO]

Kazakhstan government has put a lot of effort in reducing digital divide among the population and government employees. Public Internet access points were opened all over the country in order to connect citizens to the web. Classrooms for providing computer literacy were opened in several regions to promote capacity development of public sector employees. To facilitate continues development of e-Governmente-Government in the country the government of Kazakhstan organizes annual international conferences called "e-Government initiatives". In addition special national competitions are announced on an annual basis with nominations for the best web-site in the official language, best public e-Service at the central and regional levels, best public managers promoting e-Governmente-Government, best mass media coverage of e-Governmente-Government project etc. Awareness surveys and opinion polls are posted on the one-stop shop portal to capture user feedback and to improve the quality of provided e-Services.

4.7 E-Participation [EPAR]

http://e.gov.kz/ includes features that increase citizen engagement. The site has a formal online consultation section, online web conference between government officials and citizens, where the government receives feedback from its citizens on government policies and services. A schedule of citizen reception by the heads of State Bodies is also available on the website. All of the cabinet members have their own blogs in http://www.blogs.e.gov.kz/, the official government blog platform, where citizens can comment, ask questions, or send suggestions.

4.8 Open Government Data [OGD]

www.data.gov.kz is open data portal and introduced in 2013. It contains 763 types of official information helpful to citizens and businesses are posted. Accessing the government agencies' data sets allows the programmers' developing a variety of applications and directories. Information posted on the portal is classified by such areas as transport, education, statistics, culture, health, second-tier banks, KazPost.

4.9 Cyber Security [CYB]

Cybersecurity in Kazakhstan is overseen by the Committee on National Security and the Ministry of Internal Affairs. Both bodies are responsible for legal, regulatory and enforcement activities in the area of cybersecurity (including prevention and counter-measures). These bodies work closely with telecom infrastructure providers, including fixed and mobile telecoms

4.10 The use of Emerging ICT [EMG]

The Government of Kazakhstan is in the process of creating Government Cloud Infrastructure that will allow providing cloud-based services to Government bodies and citizens. The initiative is called G-cloud. Plans for IoT implementations will be reflected in the new Digital Kazakhstan strategy, especially in the Smart Cities section. The government is running a pilot Big Data project within NITEC aimed at analysis of social networks.

5 Some Highlights

There is no official designated Government CIO. However, there are a de-facto two government organizations that share the responsibilities of the CIO: National ICT Holding Zerde and JSC National Information Technologies.

The Presidential Administration and Office of the Prime Minister receive regular reports on implementation and status of e-Governmente-Government initiatives submitted by the National ICT Holding Zerde and National Information Technologies. However, since these are the agencies responsible for implementation as well, this evaluation can be biased.

Kenya

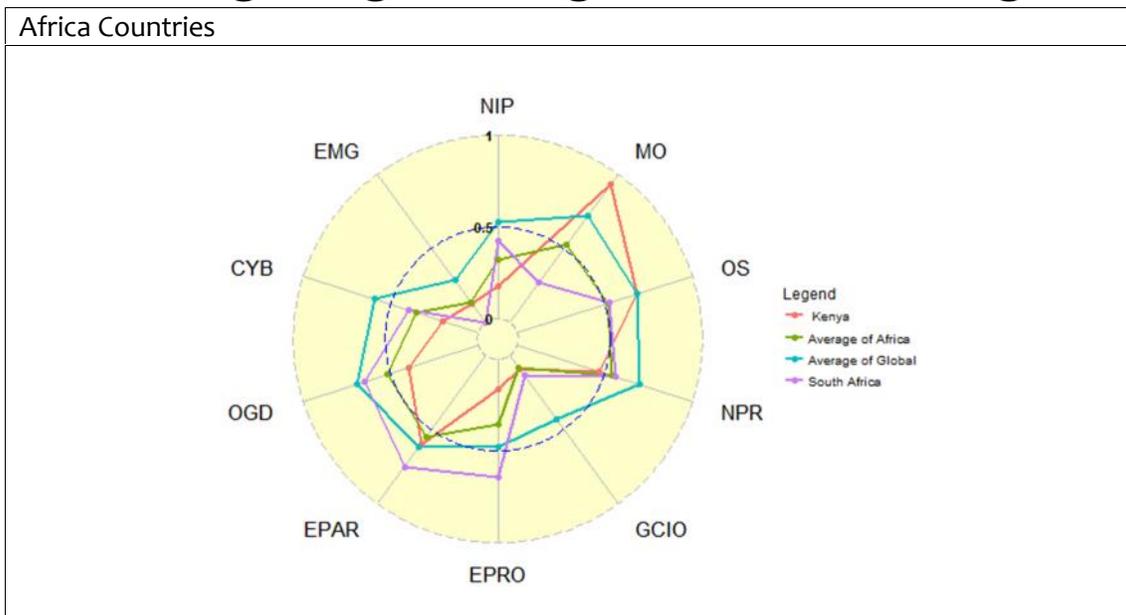## 1 General Information
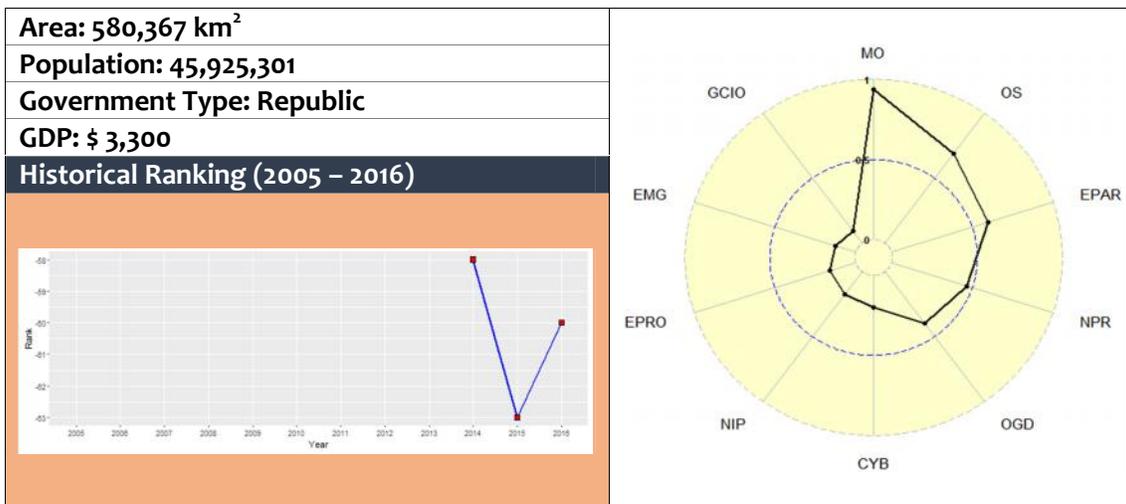
Area: 580,367 km²
Population: 45,925,301
Government Type: Republic
GDP: $ 3,300
Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

Africa Countries

Among Africa Countries, only Management Optimization (MO) and e-Participation (EPAR) indicators are above with the average score of Africa region. However, the e-Participation (EPAR) indicator of Kenya is better than those of South Africa, the best country in Africa region.

3 E-Government Development

The Government of Kenya established the e-Government Programme in June 2004. It has since committed itself towards achieving an effective and operational e-Government to facilitate more efficient delivery of information

National ICT Master Plan 2014 – 2017, Strategic Pillars

and services to the citizens, promote productivity among public servants, encourage participation of citizens in government, and empower all Kenyans.

The Kenya National ICT Master Plan 2014 - 2017 was launched on April 2014. This Master Plan has three foundations and three pillars. The foundations are the critical things that need to happen in order to lay a basis of Kenya transitioning to a Knowledge Society and positioning the country as a regional ICT hub while the pillars are meant to facilitate the achievement of socio-economic growth and Vision 2030 targets. The master plan will help to create a political, legal and regulatory environment; provide e-Governmente-Government services that are simple to use and convenient for citizens and businesses; increase the productivity, efficiency and effectiveness of critical economic sectors; stimulate the setup and growth of ICT-related businesses to enhance employment creation; enable and scale up ICT innovation; and develop a dynamic and robust ICT sector that will enhance socio-economic growth.

This Master Plan proposes that Kenya strategically develop and implement public data hubs based on a unique digital ID built on a secure infrastructure for efficient and effective citizen centric services, enhance IT-enabled democratic governance, and create of data markets from the public data and information to spur innovative and commercial services and products. Moreover, On December 2013, the Kenya and South Korean governments have announced a partnership to develop an e-Governmente-Government master plan in Kenya, looking to develop ICT to stimulate socio-economic development in the country. In addition, the Kenya e-Governmente-Government master plan was developed by South Korea's National IT Promotional Agency (NIPA) and the Kenya ICT Authority under the Ministry of Information Communication and Technology (MoICT), and is anchored in the constitution of Kenya (2010), Vision 2030 and the Kenya ICT Master plan 2013.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 43.3% of people in Estonia were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 0.2% have fixed-broadband subscriptions, and wired broadband subscription has reached 9.1%.

4.2 Management Optimization [MO]

On April 2014, Kenya has launched the Kenya National ICT Master Plan 2014 - 2017. This Master Plan has three foundations and three pillars. The first pillar of this Master Plan is E-Government services, which aims at ensuring provision of e-Government information and services as key to improving productivity, efficiency, effectiveness and governance in all key sectors. The second pillar is ICT as a Driver of Industry, which aims at transforming key Vision 2030 2nd MTP economic sectors to significantly enhance productivity, global competitiveness and growth; and the third pillar is Developing ICT Businesses that can produce and or provide exportable quality products and services that are comparable to the best in the world.

4.3 Online Service [OS]

The score for Online Service is based on five investigating online services, i.e., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five e-Tax has the highest score, compare to other online services. The electronic procurement and payment system was launched in August 2014. This e-Procurement system is an automated business process which includes procurement planning, management of suppliers, requisitions, quotations, contracts and receipts will be shifted to a more effective and cost efficient online transaction. In addition, the Kenya Revenue Authority (KRA) provides KRA Online service and iTax Online e-Services as an e-tax service.

In terms of complexity level, most of Online Service in Kenya has reached the two ways interaction in which user can download and summit application from through the portal. In addition, only e-Tax and One Stop Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

For measuring the level of convenience, the third party application result has shown that all portals are below the average considerably in terms of speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights.

Table 14 List of Online Services

Online Service	URL
e-Procurement	http://www.ppoa.go.ke/
e-Tax	https://itax.kra.go.ke/KRA-Portal/
e-Customs	http://www.revenue.go.ke/index.php/customs-services/about-customs
e-Health	http://www.ehealth.or.ke/
One-Stop Service	https://www.ecitizen.go.ke/

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. The Kenyan government is taking steps to digitize content and provide services online. Although there is still significant work to be done in this area, the Kenyan e-Governmente-

Government portal "http://presidency.go.ke/" offers basic government information to citizens. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is below average both from PC and from Mobile Device. And addition, the portal does not provide the user with some functionalities such as searching, site map, and an inquiry form.

4.5 Government CIO [GCIO]

There are no specific laws or mandates for CIO positions in Kenya. However, the Information and Communication Technology Authority is a State Corporation under MoICT. The Kenya ICT Board, Directorate of e-Government and Government Information Technology Services (GITS) have been merged into this Kenya ICT Authority in August 2013.

4.6 E-Government Promotion [EPRO]

The achievement of e-Government in Kenya has been one of the main priorities of the Government of Kenya towards the realization of national development goals and objectives for Wealth and Employment Creation, as stipulated in the Kenya Vision 2030. The basic framework for e-Government is comprised of a relatively manageable set of Kenya Information and Communications (Amendment 2013) Act and National ICT Master Plan. However, there is no evidence that make clear about E-Government Promotion in Kenya from support aspects.

4.7 E-Participation [EPAR]

According to the United Nations E-Participation Index, Kenya is a leading country in Africa (ranked second after Morocco) and 33th in the world for e-participation. This is a major improvement from 2008, in which they placed 135th. This indicates that the government's ICT initiatives have succeeded in making the population more connected, and providing a platform that appeals to users. For instance, parliament member has their website and provides the citizens with some information. However, President and Deputy President of the Republic of Kenya are using other social media channel to communicate with citizen.

4.8 Open Government Data [OGD]

Kenya launched the Open Data portal "https://opendata.go.ke/" since 2011. Kenya is the first developing country to have an open government data portal, the first in sub-Saharan Africa and second on the continent after Morocco. There are currently over 850 datasets hosted on the site. According to the site, there have been over 150 million page views. There are now over a hundred requests from the public for new datasets, and there is a clear demand for more data to be made available.

4.9 Cyber Security [CYB]

The Kenya Information and Communications Act, 1998, mandates the Communications Authority of Kenya (CA) to develop a national cyber security management framework through the establishment of a national Computer Incident Response Team (CIRT). The Communications Authority of Kenya setup the National Kenya Computer Incident Response Team Coordination Center (National KE-CIRT/CC) whose mandate is to coordinate responses and manage cyber security incidents nationally and to collaborate with relevant actors locally, regionally and internationally.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). The government of Kenya start to discuss about the plan to implement Cloud Computing and Big Data for Public However, the evidence shows that it is not officially launched. Other emerging technologies for government agencies are still nullity in Kenya.

5 Some Highlights

Kenya has the impressive point on Management Optimization, Online Service, and E-Participation. The Kenya Vision 2030 is the national long-term development policy that aims to transform Kenya into a newly industrializing, middle-income country providing a high quality of life to all its citizens by 2030 in a clean and secure environment. The Vision comprises of three key pillars: Economic; Social; and Political. Kenya government National ICT Master Plan 2014 - 2017, National Cybersecurity Strategy 2014 and National Broadband Strategy were launched to support Kenya Vision 2030. Huduma Kenya is a program by the Government of Kenya that aims to transform Public Service Delivery by providing citizens access to various public services and information from One Stop Shop citizen service centers called Huduma centers and through integrated technology platforms. Currently https://www.ecitizen.go.ke/ is a one-stop shop service to citizens. And about E-Participation, this indicates that the government's ICT initiatives have succeeded in making the population more connected, and providing a platform that appeals to users.

Government CIO, the use of emerging technology and e-Government Promotion are the weak point of Kenya. There are no specific laws or mandates for CIO positions in Kenya. For Cloud Computing and big data, Kenya government started to corporate with academic and private such as IBM is doing together with the Nairobi City Council is they've asked us for help to manage their fleet of garbage trucks better.
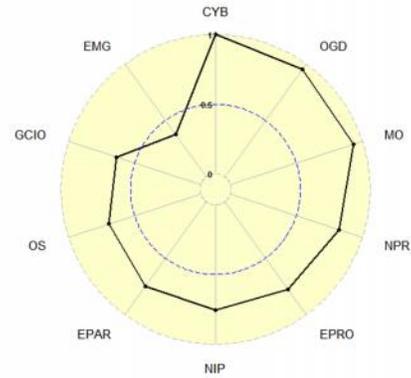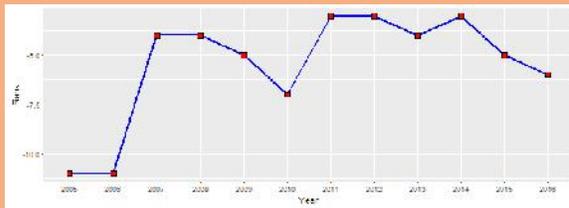
South Korea

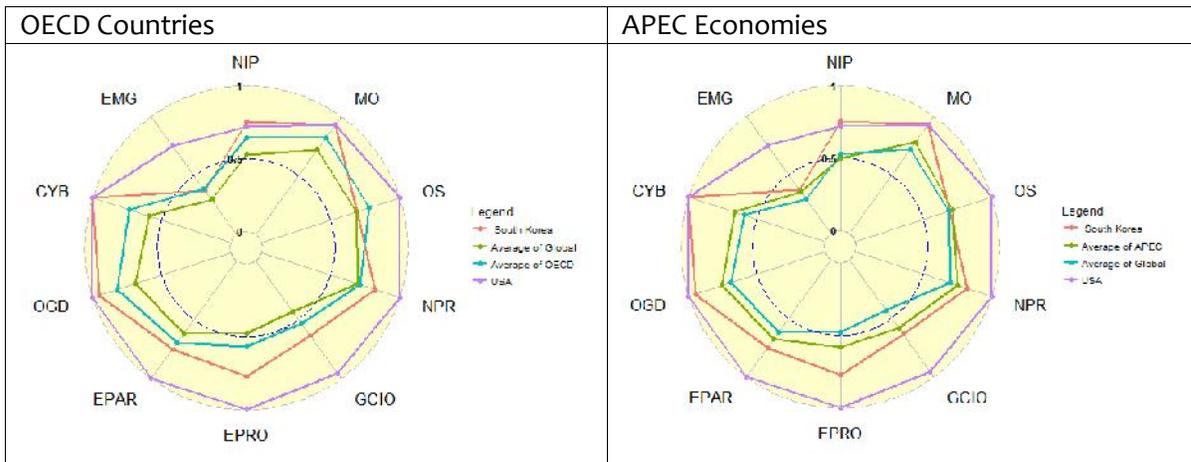## 1 General Information

Area: 99,720 km²
Population: 49,115,196
Government Type: republic
GDP: $36,700
Historical Ranking (2005 – 2016)

2 Positioning in a region

OECD Countries	APEC Economies

Among OECD countries, the Korean government shows a great progress in e-Governmente-Government development, with all indicators except Online Services ranking better than the OECD's average. In APEC group, the Korean's government performance is even better, with all indicators are surpassed the group's mean.

3 E-Government Development

The history of improvement on Korea's e-Government could be divided into three periods; the infrastructure development (1987-2002), the full-fledged implementation (2003-2007), and the further advancement (2008-now).

Based on the development of e-Government which it has been achieved from 1978, Korea Government has been expanding the integration of e-Government towards the Smart e-Government promoting the usage of public service and active participation in anytime and anywhere. Since 2010, Korea has emerged as the world leader in ICT and e-Governmente-Government.

4 Indicators

4.1 Network Infrastructure Preparedness [NIP]

The total of Internet users in South Korea accounts for nearly 88% of the population, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). Among them, more than 108% people have a wireless broadband connection, while the figure for fixed-broadband subscriptions is only 38.8%.

4.2 Management Optimization [MO]

Figure 6: The Korean Government 3.0

Since 2013, the Park Geun-Hye's Government embraces Government 3.0 as a new paradigm which pursuits two major targets: delivering customized public services and generating new jobs. In order to turn these targets into realistic, the new paradigm aims to transform the government into a more service-oriented, competent, and transparent government. The On-nara BPS is a new business process management system that has improved the efficiency and transparency of administration process by handling, recording and managing in a standardized way all the business procedures of the government online. Approximately 362.000 government officers in 154 local and central governments are currently connecting to the system. In addition, all information systems operated by individual government agency are integrated and managed by the Government Integrated Data Center. Currently, there are 1200 systems of 43 government departments connecting to GIDC. GIDC helps to ensure security mechanisms against cyber-attacks and make all connected systems being prepared for natural disasters.

Information sharing among government organizations is fostering under Government 3.0. Examples can be seen in My Car Information App where vehicles' records (insurance, maintenance and accident) are provided for common usage.

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience.

In terms of complexity level, most of Online Service in Korea has reach a transactional level in which user can totally conduct their businesses online. Korea Online E-procurement System, or KONEPS, won the United Nations Public Service Award (PSA), and was selected by OECD as one of the best cases for improving transparency, and won the 'Global IT Excellence Award' from World Congress on Information Technology (WCIT) in 2006[24]. The entire procurement procedures are processed via KONEPS's subsystems: e-bidding, e-contracting, e-ordering from online shopping mall and e-payment. With the presence of Home Tax initiative, all tax businesses including filing, billing, and payment are processed online and information is retrieved anytime by taxpayer. Taxpayers or their tax agents can request and receive 18 civil affairs certificates. In terms of civil services, Minwon (http://www.minwon.go.kr/) is the one-stop portal where users can find services they need by searching through around 5,300 services available and get detailed information.

To measure the level of convenience, the third party application result has showed that all portal is above the average in terms of speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights.

Table 15 List of Online Services

Online Service	URL
e-Procurement	www.g2b.go.kr
e-Tax	www.hometax.go.kr
e-Customs	www.portal.customs.go.kr
e-Health	
One-Stop Service	http://www.minwon.go.kr/

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of South Korea (www.korea.go.kr) contains proper information for local citizens and foreigners. Information about the country, government structure and latest government's activities are also available. In terms of technical aspects, the result of Google PageSpeed™ Insight showed that the portal performs at average speed and operates well with both PC and Mobile devices. The portal is also equipped with several basic functionalities search capability, site map, and Social Network integration.

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[24] https://www.cairn.info/revue-gestion-et-management-public-2015-2-page-107.htm#no2

4.5   Government CIO [GCIO]

Currently, the country's e-Governmente-Government lead agency is the Ministry of Security and Public Administration (MOSPA).

CIO was introduced in each ministry of the government since 1998. The Fundamental Law on National Informatization and the Presidential Directive states the appointment of CIO in national and bureau level. According to The Presidential Directive No.157, the position of CIO in each ministry and governmental agency is mandatory.

The main roles of CIO are planning ICT projects, allocating ICT budget, and improving regulations related with e-Governmente-Government project. The eligible personnel must meet the following qualifications; strong expertise in the corresponding agency's actual performance, wide perspective and professional knowledge on ICT, and strong will to initiate innovations in administration through informatization.

4.6   E-Government Promotion [EPRO]

By pursuing Government 3.0, President Park shows her ambition and interests in utilizing ICT to transform government. The vision and strategy of Government 3.0 are received a broad consensus of government officers. The strong willingness and commitment from the top-level leaderships is one of success factor to the e-Governmente-Government development of South Korea.

Another fundamental factor that has been contributed to the success of e-Governmente-Government adoption in Korea is the presence of solid IT policy and regulation framework. Some examples are Framework Act on Informatization Promotion (FAIP), 1996; Electronic Government Act, 2001; Open Data Act; Information Disclosure Act; and so on. Alongside this, the sustained investment for e-Governmente-Government (around 1% of national budget every year) guarantees Korea Government has sufficient resource for implementing its strategies and action plans. Funds for e-Governmente-Government come from various sources such as the Informatization Promotion Fund; the Telecommunication Promotion Fund or the Central Fund for e-Governmente-Government. And finally, the presence of institutions as coordinating bodies in public sector such as National Computing and Information Agency; National Information Society Agency; and Data Strategy Board; Gov. 3.0 Advisory Group; Gov. 3.0 officers in every ministry ensure the success of the new e-Governmente-Government paradigm.

4.7   E-Government Participation [EPAR]

Another target of Government 3.0 is about connecting with citizens and encouraging them to engage in public affairs. Government enables this via online voting, online consultant and other large-scale public projects.

'e-People' website for online participation of citizens was selected as one of the top 10 services for online politics in 2006 World e-Government Forum. This portal facilitates citizens' participation in policy-making by processing people s complaints and suggestions via a single window. This is a single window application enables citizen participating in policy making process by receiving and handling their suggestions and complaints.

The official Facebook (www.facebook.com/govkorea) and Twitter (twitter.com/govkorea) is also available. Furthermore, elected officials and politicians often have their own website or SNS account to notify their activities and communicate with citizens

4.8 Open Government Data [OGD]

Government 3.0 pursues transparency of government. Open government in termss of data and information means the transition from supply-driven transparency (reactive, responsive disclosure of public information) to demand-driven transparency (proactive sharing). According to President Park, Government 3.0 places emphasize on "make information sharing more equitable and transparent between the central government, local governments, government agencies and the public." Aligning with this vision, Korea has published the National Action Plan on Open Government Partnership 2014 - 2016[25].

Citizens can access public information and data at data.go.kr. Currently, central-local governments, and public agencies open 5,007 DBs (2013). By 2016, 12,654 DBs of total 21,087 DBs (60%) are expected to be open to public[26].

In 2014, among OECD nations, Korea achieved the first position in OURdata (Open, Useful, Reusable Government Data) Index[27].

4.9 Cyber Security [CYB] (4/10)

The National Cyber Security Master Plan was released in 2011, since then, it has been viewed as the foundation to guide the nation's cyber defense strategy. Korea also has a solid legislation framework on cyber security such as: The Information and Communication Infrastructure Protection Act 2001 (critical infrastructure protection); Act on Protection of Personal Information Maintained by Public Agencies (1994); Electronic Transaction Basic Act (February 1999, into force on 1 July 1999); and so on.

Both KrCERT/CC and KN-CERT are considered as computer emergency response teams in Korea Government. The Korea Internet and Security Agency is responsible for network and information security. In addition, the National Cyber Security Center (NCSC) is the central point of government for identifying, preventing and responding to cyber-attacks and threats in Korea. The NCSC, in collaboration with the private sector and the military sector, will improve warning systems and response time to security incidents and protect critical national infrastructures in Korea. For raising awareness on cyber security, the Korea Information Security Agency is responsible for online training and broadcasting about the responsible use of the Internet among users.

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[25]   http://www.opengovpartnership.org/sites/default/files/140624_OGP_Action_Plan_Republic_of_Korea_-%EC%88%98%EC%A0%95%EB%B3%B8__%EC%B6%94%EA%B0%80%EC%88%98%EC%A0%95%EB%B3%B8__edited.pdf

[26]   http://asean.women.or.kr/wp-content/uploads/2015/03/Lecture-1-GOVERNMENT3.0E-GOVERNMENT-IN-KOREA_Kim-Sangjin.pdf

[27]   http://www.oecd-ilibrary.org/docserver/download/4215081e.pdf?expires=1464490214&id=id&accname=guest&checksum=3CAF282CDF92585BBB19823BC7FEE134

4.10 The use of Emerging ICT [EMG] (3.5/8)

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT).

In 2013, the first center for big data analytics was established which provides an adequate, secure large-scale data analytics infrastructure for future potential big data projects. Big data is currently integrating in Government Integrated Data Center (GIDC) too. Its big data log analysis system nSIMS, developed after 18 months of efforts, monitors 100,000 dangerous IPs in countries like North Korea, Romania, and the U.S. in real time while detecting signs of system failure.

The government's G-Cloud Project is expanding. A total of 260 e-Governmente-Government systems have adopted G-Cloud by 2014, and the number is scheduled to be increased to 740, which is equivalent to 60 percent of the entire systems, by 2017[28].

In 2014, the Ministry The government has adopted the field of "Internet of Things" as a national strategic project, announcing the Internet of Things master plan to achieve a leading country of hyper-connected digital revolution last May[29]

5 Some Highlights

By implementing initiatives for optimizing business process of public sectors such as Government-wide Enterprise Architecture (GEA), On-nara BPS and Government Information Sharing, South Korean government has reached a high level of efficiency and transparency of administration process. This is awarded by a nearly perfect score on Management Optimization indicator this year.

Another strength of South Korea is the comprehensive cyber security framework, indicating by full score in this dimension. With a supportive cyber regulation environment and well-established security agencies, the cyber security framework is strengthened, giving the government the capability to identify, prevent and respond to cyber-threats.

One of the targets of Government 3.0 is Service-oriented Government. Future policies are required to be designed as service and follows 4-step process: Discover, Define, Develop, and Deliver.

Aiming toward "Smart nation", Korea is leading the world in digitalizing every aspects of life.

On 3rd March 2015, Korea passed the world's first cloud-specific law, with the stated aim of driving the adoption of cloud computing in Korea. The Ministry of Science, ICT & Future Planning announced the "K-ICT Cloud Computing Development Plan" during the November 2015 cabinet meeting with other related agencies and the Government 3.0 Committee30. On April 2016, the Ministry established a cloud computing support center in Daegu City so public institutions can make better use of the tools provided by entities in the private sector.
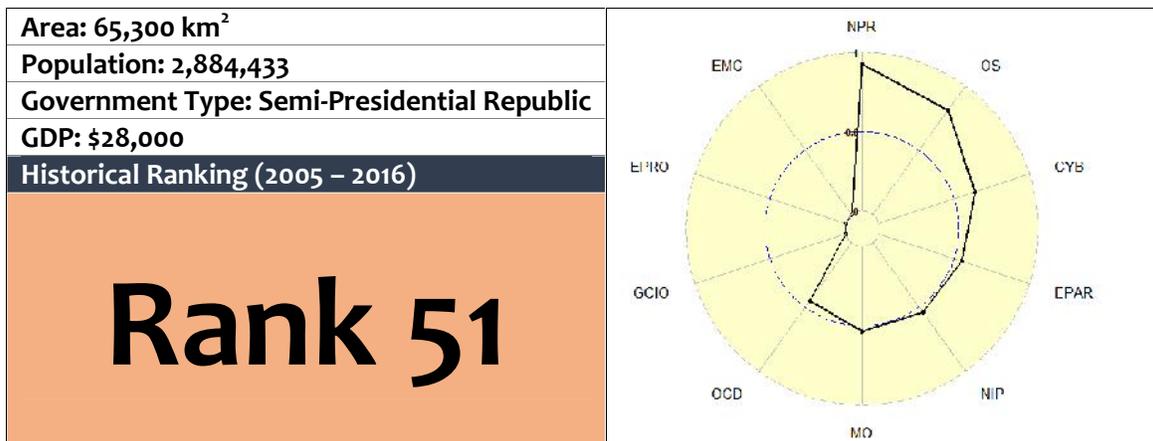
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[28]   http://businesskorea.co.kr/english/news/ict/8871-national-it-systems-143-e-Governmente-Government-systems-adopt-cloud-computing-year
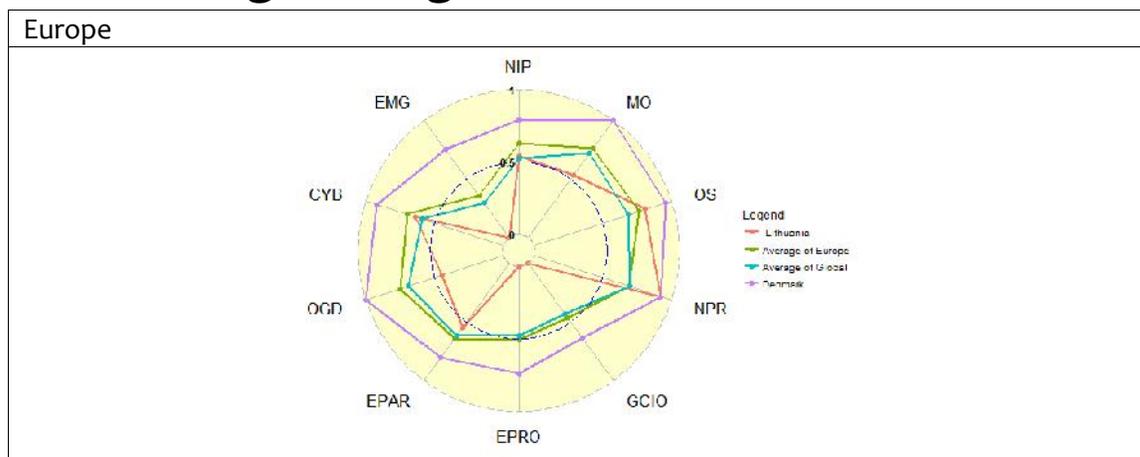
[29] http://www.kiot.or.kr/uploadFiles/board/KOREA-IoT%20Master%20Plan.pdf

[30] http://english.msip.go.kr/english/msipContents/contentsView.do?cateId=msse44&artId=1289190

Lithuania

1   General Information

Area: 65,300 km²
Population: 2,884,433
Government Type: Semi-Presidential Republic
GDP: $28,000
Historical Ranking (2005 – 2016)
Rank 51

2   Positioning in a region

Europe

3   E-Government Development

Lithuania is a new country to the ranking. The official government web portal can be located at www.lrv.lt, and they also have additional web portals with information and news about the country in English. The country's official web presence is polished and professional, but, as it is a country with a very low population, its online offerings are relatively limited. For example, while Lithuania is a member of the Open Government Partnership, it is difficult to find detailed, downloadable open data sets from an official source. There are ongoing efforts to remedy this situation by promoting open data and a start-up culture, but the extent of these programs are limited, or entwined with cooperation from other countries in the region.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

In Lithuania, approximately 66% of households have access to the Internet. This is about 15% less than the EU average, but the number has been going up, particularly in recent years (it rose from 60% to 66% from 2012 to 2014). Furthermore, nearly 100% of businesses are connected to the Internet, and about 70% of the population uses the Internet once a week or more. Broadband connections lag the EU average at 65%, and only 19% of individuals have ordered a product online within the past three months, less than half of the EU average. These numbers suggest that while NIP is improving in Lithuania, it still has some room to grow relative to other nations in the region.

4.2 Management Optimization [MO]

The Lithuanian government is more than halfway through implementation of the Lithuanian Information Society Development Programme (2011-2019). This is a multi-pronged program, but there are two overarching goals. The first goal is to improve the skills and IT literacy of the Lithuanian people. This is to be accomplished by providing training (online and in-person), and funding IT careers in both rural and urban areas. The second goal is to continue developing and enhancing a robust and user-friendly series of government services available on the World Wide Web.

4.3 Online Service [OS]

Lithuania offers a diverse array of services available to citizens and businesses on the Internet. They offer an online procurement portal for government agencies to make purchases efficiently. They also offer a host of services for citizens, including e-Tax, an online social security and unemployment benefits system, license and certificate applications, notification of change of address, etc. Lithuania is not leading the way forward in termss of innovative online services, but it certainly is not far behind its counterparts in Europe.

4.4 National Portal [NPR]

Lithuania's national portal, the e-Governmente-Government Gateway, was launched in 2004. It offers a single source of information, services, and communication between citizens and government. The portal offers information to both citizens and foreigners in several languages. There is also a Login feature so that citizens can customize their experience on the portal. The portal contains links to all of the necessary features for citizens with a simple, organized, user-friendly style.

4.5 Government CIO [GCIO]

The closest role to a GCIO in Lithuania is the Advisor of the e-Governmente-Government Policy Division. This position is currently held by Dr. Vytautas Krasauskas. He reports to the Minister of the Interior, which is currently Tomas Žilinskas. They are responsible for all e-Government strategy, implementation, and development.

4.6 E-Government Promotion [EPRO]

The Lithuanian government's newest strategy to promote a connected, information-based society is the Ministry of Transport and Communication's 2014 decision to allocate funds to improve IT services

in the nation. These funds will serve to promote the nation's e-Services by enhancing awareness and technical literacy among the population.

4.7 E-Participation [EPAR]

The Lithuanian government promotes online participation largely through its national portal, which provides links to blogs and social media accounts for agencies and individual government officers. These measures are meeting increased success as a larger proportion of the population is now using the Internet regularly and feeling more comfortable interacting with others online..

4.8 Open Government Data [OGD]

As early as 1996, Lithuania had a law requiring the government to disclose information to the public. That law was strengthened in 2000, and is still in force today. Individual agencies within the Lithuanian government do publish datasets to the public. For instance, data sets regarding the federal budget, legislation, census information, election results, and more are available, but they are not presented together in a single portal. This is a significant obstacle to citizens' ability to find the information they need without undue effort, and steps toward a more robust OGD portal should be taken.

4.9 The use of Emerging ICT [EMG]

Recently, Lithuania developed the Secure State Data Communication Network (SSDCN), which allows sensitive data and communication to be transmitted securely. Furthermore, Lithuania aspires to be a regional leader in the Internet of Things, or IoT. The government has made efforts to attract state-of-the-art tech companies that are researching new consumer electronics that rely on IoT technology.

5 Some Highlights

The Lithuania government offers a public procurement site at www.cpo.lt. This site provides users (in this case, mostly governmental institutions) with an easy way to order and receive goods and materials that they need from more than 450 different suppliers. This site eliminates a significant amount of inefficiency and lowers costs for procurement.

There is also an online customs website available in several languages at www.cust.lt. This site mostly provides information regarding the customs process, but it also provides some helpful tools to help businesses and individuals predict the customs process before they import or export goods. The site is well-organized and very user-friendly.

The Lithuanian government continues to place e-Government development as a high priority. Despite the country's relatively small size and population, it has established a useful and user-friendly online presence for itself, which only shows signs of improving in the days ahead.
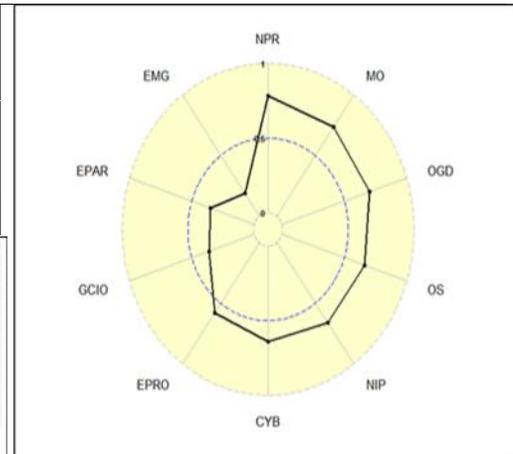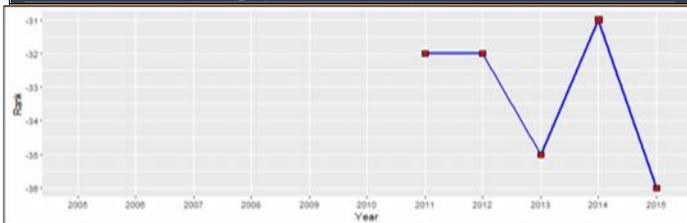
Macao

1 General Information

Area: 28.2 km²

Population: 592,731

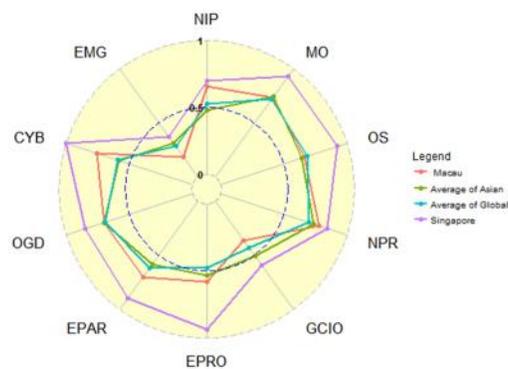**Government Type:** limited democracy

GDP: $88,700

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

Asian countries

3 E-Government Development

Macao SAR has published the latest e-Governmente-Government strategy called "Macao SAR Electronic Governance General Plan 2015-2019" in 2015, drafted by Public Administration and Civil Service Bureau (SAFP). The new strategy is to make response to the overall governance plan of Macao in which the development orientation has been set up as "One Centre" and "One Platform". According to the government's information, The EGOV General Plan was approved by the Chief Executive and The Secretariat for Administration and Justice is responsible for the overall

coordination of the plan. Members from all five secretary offices and SAFP composed the coordination committee of Public Administration Reform to supervise the implementation of e-Governmente-Government plan. SAFP serves as the GCIO of Macao, meanwhile each government agency owns a working team in which the agency leader, IT head and personnel of its IT and related business units have been included to guarantee the internal management and collaboration among agencies.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

According to the most recent ITU report, 96% of people in Macao were Internet users, approximately 62.6% have fixed-broadband subscriptions, and wired broadband subscription has reached 96.2%.

4.2 Management Optimization [MO]

Aiming to raise the maturity of e-Governmente-Government, Macau Government promotes the E-Macao program and changes the main objectives with times. The objectives of the e-Macao program in 2012 include: 1. Support the Macao e-Government Development Program and Macao Public Administration Roadmap; 2. Facilitate the adoption of government-wide standards to guide the planning, implementation and management of technology-oriented projects in government; 3. Build human capacity in government agencies through the provision of training, mentoring and development of skills to meet project requirements; 4. Promote Macao as one of regional leaders in research and practice on Electronic Government and technology in government in general.

4.3 Online Service [OS]

The E-Macao is the project aiming to build a foundation for electronic government in Macau through readiness assessment, software research and development, and capacity building for the government workforce. The project will provide advice on how specific project deliverables can be exploited or scaled for production environment, and provide a program phase-completion report to reflect on the successes and lessons learnt over the three-year period of the e-Macao Program. Now this project has been completed. We can find different forms of interaction in the websites of department of government department. The E-Services in Macau are information downloads form, e-payment systems to e-tax systems, from; labor related services to e-health system are all done by two-way interactions. The national portal provides inquiries and calculation functions and facilitates the users to know the given proposed programs, current events and situation any time in the country.

4.4 National Portal [NPR]

The Macau SAR Government Portal (www.gov.mo) is provided in simplified Chinese, traditional Chinese, English and Portuguese. It offers government news, city information and e-Services and has areas for citizens, tourists and merchants. It is also a useful gateway to the public sector, with links to almost all government agencies and departments. The government portal is supported by the software applications to allow users to enjoy a variety of services and complementing other services, such as subscribing your favorite information, providing Smart ID card and the electronic certification, to carry and deliver to the public highly secure and reliable services, on the government portal, there

are catalogues of job matching, social benefits, vehicles, public libraries, which are mainly providing documents and searching, applying and paying. Through the deployment of these software applications, the government expects to streamline its internal processes, ultimately to improve its overall efficiency. However, it was projected to improve in termss of details like setting up an accessible version for mobile user and disabilities.

4.5 Government CIO [GCIO]

The CIO development programs are processing. The CIO position in Macau is IT director, which was appointed at National government agencies and bureau level. There is no law about CIO and no MS or PHD course that is related to CIO training offered in Macau. But the CIO Leadership Forum held in Macau every year is worthy of all attention. Although this forum does not just focus on GCIO, its topics are meaningfully like new challenges faced by CIOs, governance & compliance and risk in face of cloud.

4.6 E-Government Promotion [EPRO]

The Macao SAR Government is in charge of e-promotion in Macau. The E-Macao program was proposed and jointly developed between MSARG, UNU-IIST and local institutions initially involving University of Macao (UM) and "Instituto de Engenharia de Sistemas e Computadores de Macau" (INESC-Macau) and later, Macao University of Science and Technology (MUST) and Macao Polytechnic Institute (MPI). The Science and Technology Development Fund held by Macao Government, provides financial assistance for education, research and projects that are related to science and technology policy objectives. At the same time, through multiform conferences, forums, trainings, publications, the government tries to improve the e-Governmente-Government promotion.

4.7 E-Participation [EPAR]

In Macau, the Government portal www.gov.mo is one-stop shop services. In this portal all services are provide to citizens and business, when we open the homepage, we can see online newsletter, web bulletin boards, click the government information. We can find the government structure, contacts of government departments and officials (including e-mail address) and the information of the main officials. Comprehensive information is provided. The chief executive of Macau government has his own website, where schedule of the chief executive, news, feedback form are on it. Although he did not respond individually, but in the feedback form, you can get his reply. In addition, government is completing the e-identity scheme, which is integrated ofe-certificate, ID card and e-pass. As pointed in the policy address 2013, all departments will introduce more electronic public services for people to get convenient service.

4.8 Open Government Data [OGD]

Disclosure of government information is important "sunshine government" weapon construction contemporary developed countries, because on the one hand it guarantees citizens' right to know, so that the public and businesses equal access to government information and know, change in government and business, information is not between individuals symmetrical conditions for transparent administration laid the foundation community. Currently, Macao residents still on the "sunshine government" building there are more doubts. And even, the occurrence of this year's

"May 25" against "officials from the bill up" event, the public officials raised objections "fatten" slogan. But unfortunately, it seems that in recent years the policy report no relevant reference.

4.9 Cyber Security [CYB]

Macau Computer Emergency Response Team Coordination Centre (MOCERT) founded in February 2010, the center of innovation and technology management from Macau, Macau is committed to providing information processing computer security incidents, raising public awareness and recognition of information security, computer security incidents and to provide for the public and Macau enterprise solutions and consulting services proposal. At the same time the center and local agencies, and with global security organization Forum of Incident Response and Security Teams (FIRST) and the Asia Pacific Computer Emergency Response Teams (APCERT) members work closely together to exchange information and keep in touch. It aims at promoting a healthier and more secure Internet environment in Macau.
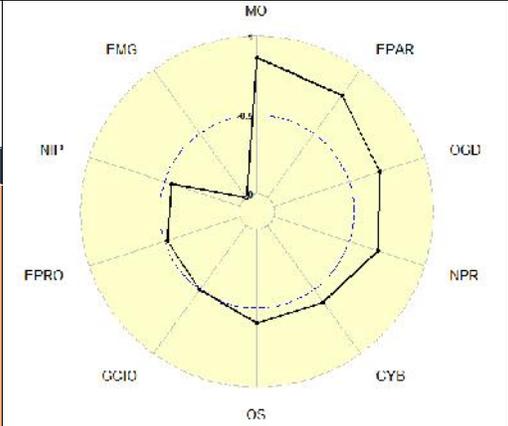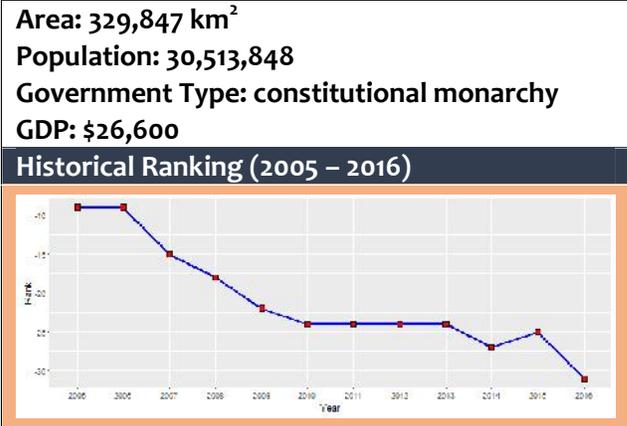
4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). The evidences show that Macau has are government data center to provide related data services to public. But there is rare information about regulations around emerging technologies, even though the developing plans for IOT and Cloud Computing are written in their e-Governmente-Government general plan.
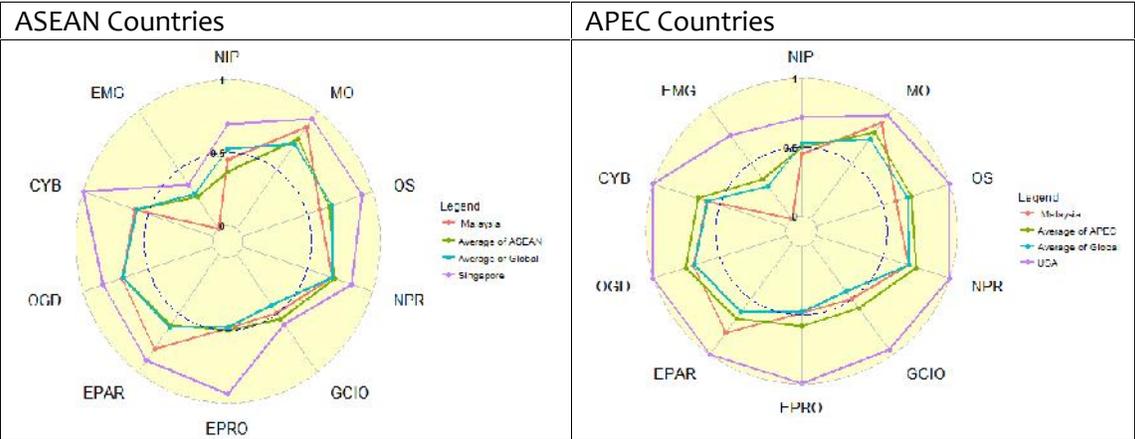
5 Some Highlights

Macao has performing well on "Management Optimization" and "Online Service". The Macao SAR government has strived to simplify the administrative procedures and optimize public services through continuous e-Governmente-Government plan in different phase. Administrative effectiveness and efficiency, governance reform have always been the critical tasks for e-Governmente-Government in Macao. The Macau SAR Government Portal (www.gov.mo) has provided basic e-Service for all kinds of needs of citizens, non-citizens and business. Its simplified catalogs and columns keep the interaction between government and individuals plain and fast. The mobile version also has been set up to be user-friendly for people's new habit. However, Macao should get more scores on "Government CIO" "E-participation" and "The usage of emerging technologies". On account of the fact that many nations are still in the initial stage on last indicator, it could be considered as a good chance for any developing areas to bridge the gap by adopting new technologies into e-Governmente-Government area with comprehensive legal framework and infrastructure preparedness. To Macao, in addition to the new indicator, completing the government CIO functions is still an important issue.

Malaysia

1   General Information

Area: 329,847 km² **Population: 30,513,848** **Government Type: constitutional monarchy** **GDP: $26,600**
Historical Ranking (2005 – 2016)

2   Positioning in a region

ASEAN Countries	APEC Countries

Among ASEAN countries, Malaysia has high scores on e-participation, cyber security and management optimization. These scores surpassed the world and ASEAN's average and close to the Singapore's – the e-Governmente-Government leader in ASEAN region.

In APEC countries, Malaysia only exceeds the group average on management optimization and e-participation. Other indicators are below the mean of APEC and global.

3   E-Government Development

E-Government has long been an interest of Malaysia government since 1996 with the establishment of the Multimedia Super Corridor (1996). A transformation vision toward 2020 including 12 national key economic areas (NKEA), of which e-Governmente-Government is one of essential entry point

project was announced aiming to "increasing the accessibility, speed and transparency of government services".

Since e-Government is high on the agenda of Malaysia government, it has received strong financial, institutional and legal supports. Lots of efforts have been carried out by the Government in order to promote for e-Governmente-Government development.

4 Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 84.6% Australia's population were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). Among them, wired broadband subscribers accounted for around 25.8% while more than 100% of total population have a wireless broadband connection.

4.2 Management Optimization [MO]

The Malaysian Public Sector ICT Strategic Plan (2011-2015) is the latest national e-Governmente-Government strategy which draws strategic direction on the implementation if Information and Communications Technology (ICT) in the Malaysian public sectors.

The strategy emphasizes on delivering innovative, efficient and quality citizen and business-centric services by leveraging on the pervasive use of ICT. The ultimate aim is to achieve a Citizen-Centric and Whole of Government public service. 5 programs and 6 policy targets have been identified in the strategy

A secured, dedicated, centrally managed Government consolidated ICT network infrastructure for Government agencies named "1Gov*Net" has been implemented with the target to transform ICT network infrastructure via consolidation to optimize resources and value for money for strengthening Government service delivery system. To date, 10.600 government premises are linked to 1Gov*Net. Besides, a government cloud called "1GovCloud" has implemented by The Malaysian Administrative Modernisation and Management Planning Unit (Mampu) in order to create a private, secure and dedicated platform for government agencies.

Project Monitoring System creates a collaboration framework for better management and development of e-Governmente-Government projects across agencies. There is also a Human Resource Management Information System (HRMIS) implemented in Malaysian Federal Government which provides a single interface to perform human resource effectively. In addition, the Malaysian Government also employed the Generic Office Environment (GOE) with the purpose to enable efficient communication, allowing collaboration across government officers. The government also put in place the use of an enterprise architecture framework called "1GovEA" in order to create an effective strategic alignment between backend business and ICT usage in government organizations.

4.3 Online Service [OS]

The score for Online Service comprises of five sub-dimensions: e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience.

In general, most of public services in Sweden are provided digitally. However, not all of them reached the transactional complexity level.

To measure the level of convenience, the third party application Google PageSpeed™ Insight[31] has showed that all services have a good access speed.

Table 16 List of Online Services

Online Service	URL
e-Procurement	http://www.eperolehan.gov.my/
e-Tax	
e-Customs	http://www.customs.gov.my/en/uc
e-Health	
One-Stop Service	eservices.com.my

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. Government.se is the government portal of Sweden. It presents a wide range of information resources about government structure, government agencies, legal documents and daily news regarding to government's operations. Information are delivered in 16 different languages.

In technical aspect, the result of Google PageSpeed™ Insight showed that the website operates well both from PC and from Mobile Device. The portal also provides several contacting methods via various Social Networks such as Facebook, Twitter, YouTube, Flicker as well as there is a feature allowing user to receive update mail notification.

4.5 Government CIO [GCIO]

The role of government CIO is defined on MAMPU website[32]

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[31] https://developers.google.com/speed/pagespeed/insights.

A self-assessment competency for CIOs has been developed in CIO Handbook published by MAMPU, in order to provide an opportunity for CIOs to identify any gaps for self-improvement while performing their role as CIO. CIO-equivalent positions are also found in ministerial agencies[33] via the Public Sector CIO Information Systems. The office of the Malaysian Government CIO has always been in the forefront of equipping and acculturating CIOs in the latest technologies and ICT tools for Public Service delivery through workshops and CIO summits.

4.6 E-Government Promotion [EPRO]

The Malaysia Administrative Modernization and Management Planning Unit (MAMPU) is promoting the use of e-Governmente-Government.

MAMPU also carries out e-Governmente-Government promotion programs such as conferences, exhibitions, seminars throughout the country. As for assessment mechanisms, the Electronic Government Steering Committee and Government IT and Internet Committee are the two over-sight bodies, evaluating the e-Governmente-Government implementation at national level. The Electronic Government Activities Act of 2007 provides the legal framework for e-Governmente-Government implementation in Malaysia. Under the law, Malaysian Public Sector ICT Strategic Plan is still on going.

4.7 E-Government Participation [EPAR]

The national portal www.malaysia.gov.my is beginning to evolve from just merely providing e-information to providing e-consultation services as well. It is also the government one-stop-shop for interacting with citizens. The portal provides information on government such as policies, government procedures, the national budget and legislation. The website has some facility for encouraging citizen feedback and conducts simple online surveys.

As the e Services can support participation in processes involved in government and e-participation is hence closely related to e-Governmente-Government and by providing e-Services such as MY ID, My SMS, MY Health, My procurement, My Ideas, and increasing the benefits of citizen Malaysian government want increase e-participation. In addition, SMS is utilized as an ultimate channel to provide user access to government services. An electronic touchscreen is installed at every service counter in order to receive user feedback for the service provided.

4.8 Open Government Data [OGD]

The official open data portal of Malaysia government is located at data.gov.my which recently involves 32 organizations in 10 sectors as providers with totally 1121 datasets provided to date. The data were published mostly in XLSX and CSV format. Only in 2 states Freedom of Information is enacted (Selangor and Penang).

4.9 Cyber Security [CYB]

By 2013, total of 10.636 security incidents were detected by MyCERT, involving all kinds of cyber security threats such as fraud, intrusion, spam, malicious code, and so on.

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[32] http://www.mampu.gov.my/web/en/gcio

[33]

The Malaysian Government has strengthened the role of CyberSecurity Malaysia by Order of the Ministers of Federal Government Vol.53, No.13, dated June 22, 2009 by identifying CyberSecurity Malaysia as national info security coordination center that provides ICT security specialist services and continuously monitors threats to the national security.

In termss of cyber laws, Malaysia has enacted the Digital Signature Act of 1997; Computer Crimes Act of 1997; Telemedicine Act of 1997, e-Commerce Act of 2006, Electronic Government Activities Act of 2007 and the latest Personal Data Protection Act by 2010.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT).

MY E.G. Services Berhad ("MYEG") is a concessionaire for Malaysian Electronic-Government ("E-Government") MSC Flagship Application. Over the past 5 years MYEG has invested in and is currently deploying our next generation technologies based on The Internet of Things ("IoT") solutions. We believe that the deployment of IoT coupled with big data analytics will bring significant improvements to our overall quality of life. Our environment will increasingly anticipate our needs as opposed to responding to our actions. MYEG implements cutting edge IoT solutions that is being deployed on a nationwide scale for the first time anywhere in the world.

A government cloud called "1GovCloud" has implemented by The Malaysian Administrative Modernisation and Management Planning Unit (Mampu) in order to create a private, secure and dedicated platform for government agencies

5   Some Highlights

 Management Optimization is always the strong point of Malaysian government with major initiatives have been implemented: the government ICT network "1Gov*Net"; the enterprise architecture framework "1GovEA"; government shared services such as Digital Document Management System, Service Intelligence (SI), Government Risk and Compliance Scorecard (myGRiC); and so on.
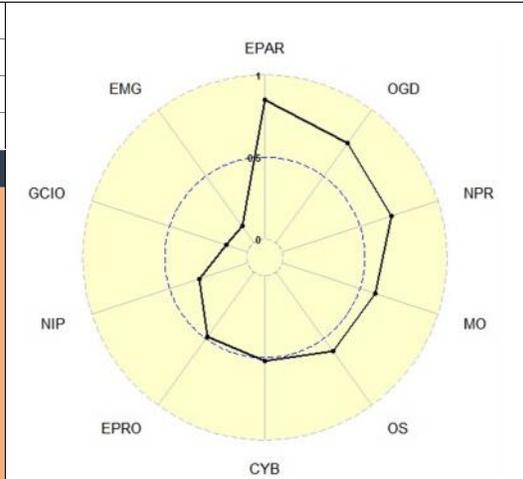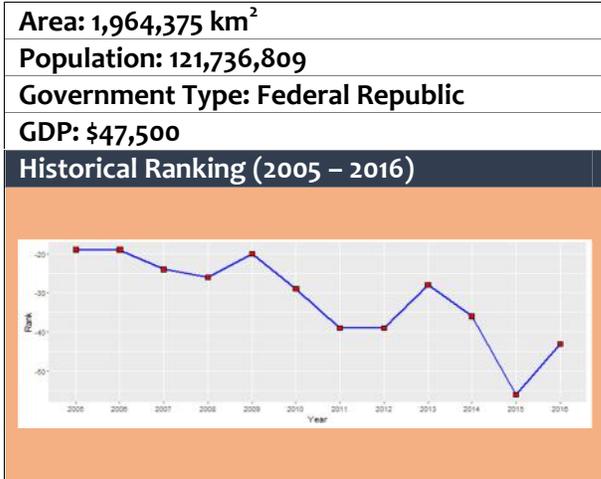
Regarding online services, this year, Malaysia government is on its way to restructuring several major services including customs service. An initiative so-called uCustoms was introduced as "a fully integrated, end-to-end, and customs modernization solution that delivers single window for goods clearance", is expecting to complete no sooner than 2017.

The national portal as well as the one-stop-shop services - malaysia.gov.my - seems to be inaccessible outside of Malaysia, which prevented the evaluation process, resulted in a low score for Malaysia in national portal and online service dimensions.
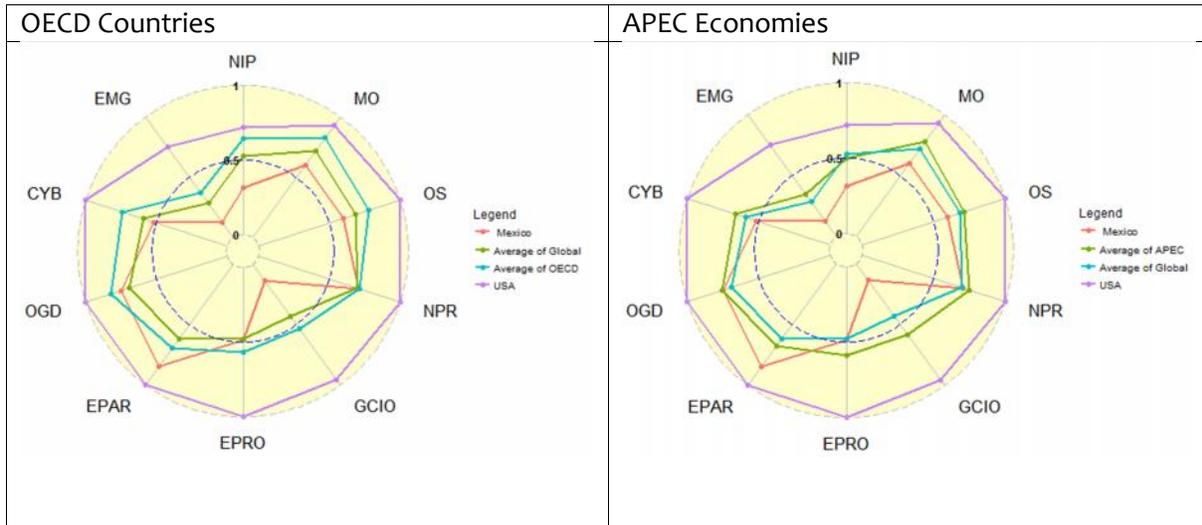
Malaysia government is also putting great efforts to meet minimum points required to join by Open Government Partnership. To meet those requirements, several challenges are recommended to focus on: the right to information, asset and conflict interest disclosures and citizen engagement.

Mexico

1 General Information

Area: 1,964,375 km²
Population: 121,736,809
Government Type: Federal Republic
GDP: $47,500
Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

OECD Countries	APEC Economies

All indicators except the use of e-Participation (EPAR) indicator is below the average score of OECD and APEC members.

3   E-Government Development

The Mexican government was already making widespread use of ICT by the end of 1990s. There was no overarching e-Government strategy for the federal government until 2001. In Mexico, the Institute for Statistics, Geography, and Informatics (INEGI) was in charge of the federal government's IT policy. In 2001, the President's Office for Government Innovation officially introduced e-Government as an initiative to digitalize and modernize government. E-Mexico was a related initiative focusing on connectivity and electronic access. e-Government became one of the six pillars of the Good Government Agenda in late-2002, thus consolidating it as a central strategy of the Mexican Government.

Mexico has a long-standing commitment to using ICT to support public sector reforms and foster good governance by improving transparency, quality and efficiency of government. The Mexican government also adopted an initiative called e-Mexico National System that aims to increase the connectivity between all levels of government, the IT industry, and academic institutions until 2025. Through this plan they would like to provide contents to the citizens, for instance: e-health, e-learning, e-education and e-Governmente-Government. In October 2013, Mexico launched its National Digital Strategy to promote the use of Information and Communications Technology. The National Digital Strategy, "Digital Mexico," is the digital action plan the Government will implement over the next few years to encourage the adoption and development of Information and ICT

National Digital Strategy, digitization impacts

and insert Mexico into the Information and Knowledge Society.

The Strategy sets out the challenges Mexico faces in the digital context and the way it will cope with them through five major objectives: 1) Government Transformation, 2) Digital Economy, 3) Quality Education, 4) Universal, Effective Health, and 5) Public Safety. The primary goal of the strategy was to achieve a "Digital Mexico" in which technology facilitates economic development and improves the quality of citizens' lives. Based on policies for a digital government, Mexico seeks to build a new relationship between the government and citizens.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 44.4% of people in Estonia were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 11.6% have fixed-broadband subscriptions, and wired broadband subscription has reached 37.5%.

4.2 Management Optimization [MO]

The Mexican government also adopted an initiative called e-Mexico National System that aims to increase the connectivity between all levels of government, the IT industry, and academic institutions until 2025. In October 2013, National Digital Strategy, "Digital Mexico", is based on clear definitions, enabling those involved to strive to achieve the objectives set forth therein, which are aligned with the major goals of the National Development Plan 2013-2018 that guide the government's efforts.

4.3 Online Service [OS]

The score for Online Service is based on five investigating online services, i.e., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and their URL Address. All of those services were investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Cyber security and e-commerce laws were found at national and sub-national level but some of them are pending. Compared with other countries in Central America, Mexico had very good e-Services. e-Tax is the highest score, compare to other online services.

In terms of complexity level, most of Online Service in Mexico has dynamic sites available. It allows downloading of forms and submitting them back to government agencies. In addition to that, only e-Tax has implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

For measuring the level of convenience, the third party application result has shown that e-Service portals expect e-Health are above the average considerably in terms of speed. These mean they are using only the static information. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights.

Table 17 List of Online Services

Online Service	URL
e-Procurement	http://web.compranet.gob.mx/
e-Tax	https://www.siat.sat.gob.mx/PTSC/
e-Customs	http://www.aduanas.gob.mx/e5cinco/Ingreso.aspx
e-Health	http://www.esalud.gob.mx/
One-Stop Service	http://www.gob.mx/

4.4   National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. The national portal "http://www.gob.mx/" is a part of the Mexican Government Portal and gives citizens a single entry to e-Governmente-Government services online. The Citizen Portal uses a customer relationship management strategy to better present its content according to users' needs. The portal uses a technological platform that enables interoperability and standardization across different government offices. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is above average both from PC and from Mobile Device. However, the portal does not provide the user with some functionality such as other language and it is still beta version.

4.5   Government CIO [GCIO]

Regarding the Government CIO in Mexico, the CIO is appointed only nationally. The Director of the e-Government and IT Policy Unite at the Ministry of Public Administration hold the equivalent post of GCIO. There is no information about any CIO association or organization. There is not a CIO training course found in Mexico.

4.6   E-Government Promotion [EPRO]

In Mexico, the law on e-Government was adopted at the national level but not at the sub-national level. The e-Government master plan and policies exist only at the national level. There are no government activities such as organized conferences or citizen training. There are no think-tanks or funds for developing e-Government in Mexico.

4.7   E-Participation [EPAR]

The national portal http://www.gob.mx/ is a one-stop-shop service for all citizens. Mexican Government has launched the e-Participation portal "http://www.gob.mx/participa", which is a platform for citizen participation that allows, through diverse mechanisms such as forums, surveys and exercises of co-edition to create better public policy proposals for the development of the country.

4.8   Open Government Data [OGD]

Mexico has recently launched the Open Data portal "http://datos.gob.mx/" that National Open Data Policy creates and implements a national policy for the publication and use of open data that is clear, provides legal certainty, uses open and interoperable standards, and is guided by the principle of maximum publicity.

4.9   Cyber Security [CYB]

In 2001, the Steering Committee of the Forum of Incident Response and Security Teams (FIRST) officially granted (DGSCA-UNAM) the approval to operate as a national CERT. The Coordination of Information Security (CSI) / UNAM-CERT of the Directorate General of Computing and Information Technology and Communication, UNAM is a meeting point which can turn the computing community for information, advice and services security; and to exchange experiences and points of view, thereby establishing appropriate security policies, reducing the number and severity of security problems and spreading the culture of computer security.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Mexico has attempted to implement Cloud Computing for Public Sector such as Mexico's Tax Administration System (SAT). However, the evidence shows that it is not officially launched. Other emerging technologies for government agencies are still nullity in Mexico.

5 Some Highlights

Mexico has the impressive point on e-Participation, Open Government Data, and National Portal. Mexico has high score on e-Participation that is the result of the digital government item in the Good Government Agenda, and is also part of the e-Mexico. The citizen participation portal, "http://www.gob.mx/consulta/" is a proposal by the Government of the Republic to promote citizen participation through digital means, as a way to improve public policies, making them more effective and achieve greater impact on the daily lives of people.

Mexico's commitment to open government includes expanding access to government services online, and digital democratic tools to make government actions and government spending more transparent by making them available online. Mexico launched a National Digital Strategy on 2013, coordinated by presidential advisor Alejandra Lagunes, with the goal of placing Mexico first among Latin American nations on the Organization for Economic Co-operation and Development (OECD) Digital Engagement Index. In Mexico, the Open Government Partnership has become a space for dialogue and exchange of ideas that allows the government, in collaboration with civil society, to take on commitments linked to the four principles of Open Government with the potential to transform people's quality of life.

Mexico still has the weakness. The use of emerging technology and Government CIO are the weak point of Mexico. As for the emerging technology, one of Mexico's governmental agencies transitioned to Microsoft's cloud computing services with the aim to improve its services to Mexican taxpayers. There is no evidence that make clear about Government CIO, even if There is a law creating the position of the CIO in the government and a document defining the role and function of the CIO in Mexico. Moreover, Mexico has low score on Cybercrime Countermeasures, and there also is not any evidence about cyber security strategy or action.
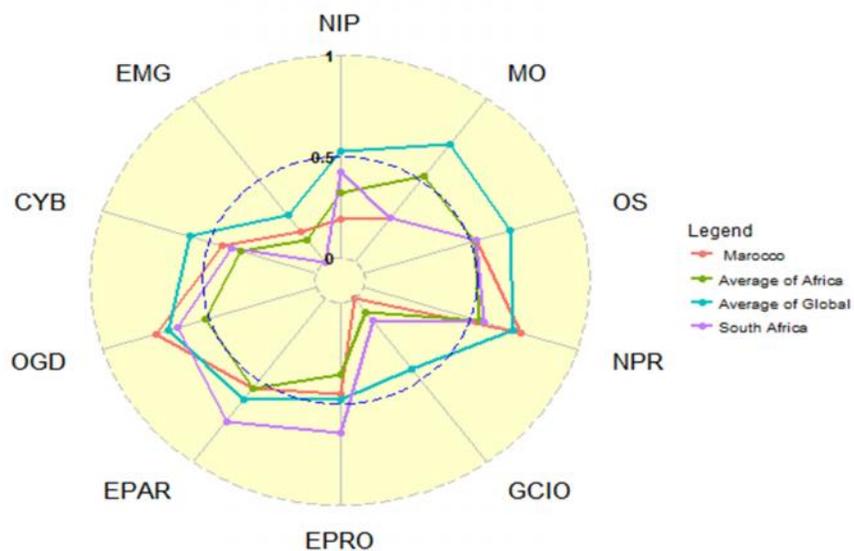
Morocco

1 General Information

Area: 446,550 sq km
Population: 33,322,699
Government Type: Parliamentary constitutional monarchy
GDP: $8,300
Historical Ranking (2006-20016)
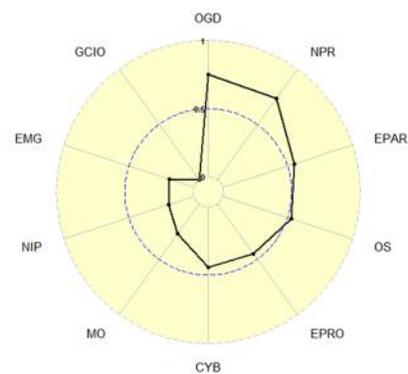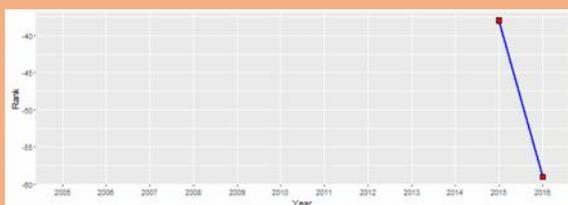
2 Positioning in a global organization and a region

AFRICA Countries

3 E-Government Development

In 2008, the Moroccan government introduced the National Strategy for Information Society and Digital Economic 2009-2013, known as "Digital Morocco 2013" or "Morocco Numeric". The strategic plan "Digital Morocco 2013" is meant to make from information technology a cornerstone of the economy, a source of added value for other economic sectors and public administration, and an engine for human development, in view of positioning Morocco as a regional technology hub. The strategy focuses on four main priorities: expanding citizen access to broadband with an emphasis on knowledge; user-oriented e-Governmente-Government and public service provision; promoting computerization across small and medium enterprises to increase productivity; supporting local actors to develop IT markets and build greater potential for sector exports. These priorities are supported by two measures: the development of human capital and promotion of cyber-confidence.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

As of 2015, Morocco has over 20 million Internet users with the penetration is about 60.6%. In Morocco, public sector expenditures represent a significant share of the state budget. Also, this area is it expected to achieve significant efficiencies through the implementation of e-Governmente-Government services through a streamlined and automated processing of information.   The aim is to use the e-Government projects to modernize and Local Administration in the service of citizens and businesses. It is the use of information technology and communications to reconfigure processes in depth, making them effective and efficient, completely geared to serve citizens and business.

4.2 Management Optimization [MO]

The latter requires the establishment of a Computer Emergence Response Team (ma-CERT) at a national level, as well as the launch of an Information Systems Security Committee within the National Council of Information Technology and Digital Economy. Digital Morocco 2013 also envisages public awareness campaigns for the general public aimed at increasing confidence in modern technologies.

During processes of evaluation, we found that in Morocco, there is a few number of e-Government services, transactional portals, and e-transformation effect. In 2015, they did not have any strategy for the development on ICT and e-Government.

4.3 Online Service [OS]

http://www.service-public.ma/ is one-stop services for public sectors. This is static website and contains the link to ministries and other government website. It's an institutional web site without online public services integration and contains the same content picked from other government web site. This portal offers the description of procedure for more than 70 public's services and divided to detail catalogs, such as citizens, enterprises, and professionals,

4.4 National Portal [NPR]

The national portal (www.egov.ma) includes main information for e-Governmente-Government programs, projects and operates e-Service information, it has a link to separate e-Service portal (http://www.service-public.ma/) this is the set of services offered by the Moroccan administration. The national portal aims first and foremost, to improve the relation between the administration and its users.

4.5 Government CIO [GCIO]

There is no information for government CIO.

4.6 E-Government Promotion [EPRO]

The Steering Department of the e-Government program (DPGOV) is attached to the CIGOV. This structure consists of internal and external expertise that will be responsible of assisting the CIGOV and SPGOV in the implementation of the e-Governmente-Government program. The activities of the DPGOV are divided into four major functions (1) Strategic management, (2) Steering, (3) Assistance, and (4) Promotion: design of a communication/marketing for the program and also synchronization with the others SPGOV.

4.7 E-Participation [EPAR]

The Moroccan government has launched several e-participation initiatives including: (1) Fikra: The Suggestion Box for the improvement of the Administration. It was launched on February 25, 2011 offers a discussion forum to get more feedback from citizens and enable them to express their views. They can submit ideas, vote for ideas and comment. The Government also created 3 forums for sharing ideas are available (i) Forum "Your ideas for new eGov services"; (ii) Forum "Your ideas for simplifying administrative tasks"; and (iii) Forum "Your ideas for improving the Administration". (2) Comment drafts of laws and decrees, and (3) Questionnaire and suggestion box on the websites.

4.8 Open Government Data [OGD]

In June, 2014 The Directorate of Digital Economy launched officially online for the new version of the Moroccan portal of Open Government Data (http://data.gov.ma/fr). The new portal, which regrouped around sixty files shared by different departments, it was realized based on the open source software CKAN whose development is coordinated by the Open Knowledge Foundation, which remains a powerful data management system with its tools that simplify editing, sharing, research and use of data.

4.9 Cyber Security [CYB]

Morocco is currently in the process of implementing a National Cybersecurity Management System (NCSecMS), which consists of four components: (1) The National Cybersecurity Framework; (2) Maturity Model; (3) Roles & Responsibilities, and (3) The Implementation Guide.

4.10 The use of Emerging ICT [EMG]

No evidence found that Moroccan government is use of emerging ICT to promote e-Government activities, such as applying IoT, Big data and Cloud computing in government activities.
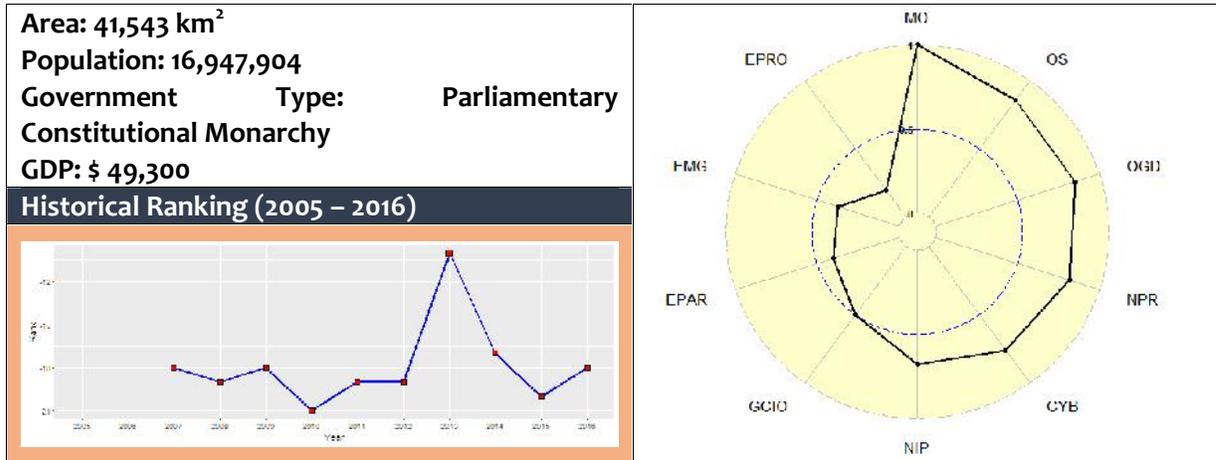
5 Some Highlights

Compared to last year of ranking, due to there is no new e-Government strategy therefore, Morocco's rank this year is low in most of sub-indicators. In 2014, Moroccan government issued a portal of Open government data, the new portal, which regrouped around sixty files shared by different departments, it was realized based on the open source software CKAN whose development is coordinated by the Open Knowledge Foundation, which remains a powerful data management system with its tools that simplify editing, sharing, research and use of data.

Morocco is currently in the process of implementing a National Cybersecurity Management System (NCSecMS), which consists of four components; The National Cybersecurity Framework, Maturity Model, Roles & Responsibilities, and The Implementation Guide.
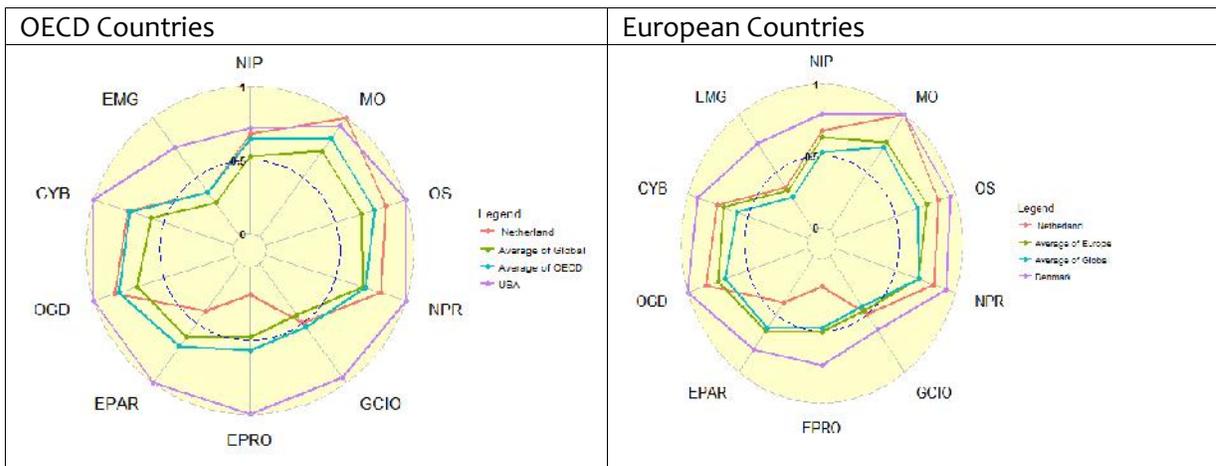
Same last year, Moroccan government has neither CIO positions in center government nor local government. They have some services for citizens and businesses, but still lack of information and there is no online transaction. Morocco is still struggling to improve their e-Governmente-Government using the existing technology. New technology is still far the implementation in Morocco.

Netherlands

1 General Information

Area: 41,543 km²
Population: 16,947,904
Government Type: Parliamentary Constitutional Monarchy
GDP: $ 49,300

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

OECD Countries	European Countries

Among OECD Countries, Netherlands has a better score than the average score of OECD in Management Optimization, Online Service, and National Portal. However, as shown on the above picture, Netherlands is very low on the e-Government Promotion. A contradictive situation between e-Government Promotion and the Online Service including Management Optimization, has indicated that most citizens know how to use e-Government service. As a consequence, Netherland decided to reduce e-Government Promotion program.

These achievements also reflect the position in European region in which Netherlands is approaching Singapore, the best country in the region, in the Management Optimization.

3 E-Government Development

in 2014, the Dutch government announced the Digital 2017,the new e-Governmente-Government strategy that will bring e-Governmente-Government to the next horizon. In the so-called Vision Letter on Digital Government 2017 Mr Plasterk, minister of the Interior and Kingdom Relations, sets out how the government intends to improve the services available to the public. The Digital 2017 is a part of Compact Central Government Implementation Program.

Source: Netherland Overheid Referentie Architectuur at

To strengthen the integration and collaboration among government intitutions, Netherlands designed the government enterprise architecture namely "Netherland Overheid Referentie Architectuur (NORA). NORA is the standard for integrating the information system among government agencies.

Using Digital 2017, Netherland is shifting its e-Governmente-Government to the digital government. This movement is similar to other countries which has reached the mature e-Governmente-Government. Using the different metaphor, the substance of such wave is to achieve a condition of "the government service is digital by default".

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 93.2% of people in Netherlands were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 41% have fixed-broadband subscriptions, and wired broadband subscription has reach 69.1%.

4.2 Management Optimization [MO]

In early 2010, Netherlands has established government-wide service vision in which the target should be met in 2020. As part of it, Netherlands issued The Digital 2017 to ensure that all parties - government, citizens and business - work together to achieve the ultimate objective for 2017. Government equipped The Digital 2017 with a more detailed information that covers the schedule, responsibilities of all parties, and measurable targets.

To streamline the data exchange among government agencies, Netherlands has appointed Digi Network. Using DigiNetwork, government and private company have connectivity to all the connected government agencies through a single link. In addition to DigiNetwork, Netherlands has an interoperability framework for data exchange among government agencies. The name of the framework is NORA. In all, Netherlands has fully achieving the maximum score in Management

Optimization domain. Contribution from operationalization of DigiNetwork and NORA is very significant in this area.

4.3   Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e-One-Stop Service and e-Health have the lowest score, compare to other three online services.

In terms of complexity level, except the e-Customs, all of Online Service in Netherlands have reached a transactional in which user can start the transaction from applying to receiving the service through the portal. In addition to that, all Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services. Since the e-Customs is still in a one-way interaction, such security measures are not found in it.

To measure the level of convenience, the third party application result has showed that three portals are above the average considerably in terms of speed. E-Health is the only portal that scored below average, thus, considerably slow to access. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 18 List of Online Services

Online Service	URL
e-Procurement	http://www.tenderned.nl/
e-Tax	http://www.belastingdienst.nl
e-Customs	http://www.belastingdienst.nl/
e-Health	https://www.nictiz.nl/over-nictiz/english
One-Stop Service	https://overheid.nl

4.4   National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of Netherlands (www.government.nl) contains proper information for local citizens and foreigners. Information about Netherlands is available on the portal. User can find information about culture and heritage, demographic, and government. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is above average both from PC and from Mobile Device. However, the portal does not provide the user with demography information, link to the e-Services, and an inquiry form.

4.5   Government CIO [GCIO]

Netherlands has clearly defined the appointment of GCIO in all level of department. However, there is no formal document that clearly stated the mandate, role, and responsibility of GCIO. There is no evidence that GCIO in Netherlands has a regular forum to share experiences.

4.6 E-Government Promotion [EPRO]

There is no significant evidence to indicate that Netherlands government conduct any initiatives to promote the use of e-Government Service. This situation is similar to the one in any developed countries where the IT Culture has been embraced in the society.

4.7 E-Participation [EPAR]

Culture and society in Netherlands has been created as a high tech society. These factors have driven Netherlands to the next horizon of e-Government. Citizens and government can take the benefit of ICT in their daily life. However, there is no application where the citizen can directly communicate to the government. The absence of e-participation portal significantly impacts the score of this indicator.

4.8 Open Government Data [OGD]

In 1991, Netherlands has launched Government Information (Public Access) Act to participate in the Freedom of Information Act movement around the world. To strengthen the implementation of these act, Netherlands has established Open Data Portal (https://data.overheid.nl/) to provide public with accessible government information. To keep the information update, Netherlands government uses Data Catalog Vocabulary (DCAT) Standard. This standard is also supported by European Union (EU).

4.9 Cyber Security [CYB]

Netherlands has ratified several laws related to cybersecurity. Some of them are as follow:

- Telecommunications Act (2004)
- Personal Data Protection Act (2000)
- Electronic Signature Act (2003)
- E-Commerce Act (2004)
- Cyber Security Strategy
- Guideline for Information Disclosure
- Cyber Security Assessment

In addition to these laws, Netherlands has strengthened organization capacity for cybercrime countermeasure by setting up Dutch Cyber Security Council (CSR). CSR consists if government representative, business enterprises, and scientific institutions.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Netherlands has attempted to implemented Cloud Computing for Public Sector. However, the evidence show that it is not officially launched. Other emerging technologies for government agencies are still nullity in Netherlands.
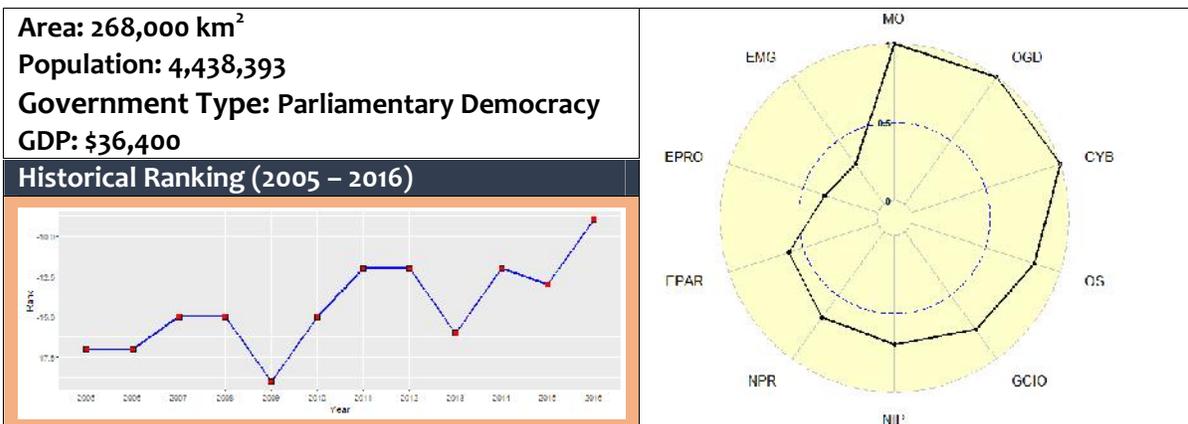
5 Some Highlights

Among ten indicators in the current ranking, the Management Optimization is the best among other indicators in e-Government Netherlands. This achievement signifies the importance of NORA for improving the quality of government business process. Similar to other European countries, Netherlands is shifting its e-Governmente-Government to the next level in which they try to make all public service will be digital by default. As has been noted, the better the Management Optimization, the less complex for completing the ultimate goal of Digital 2017.
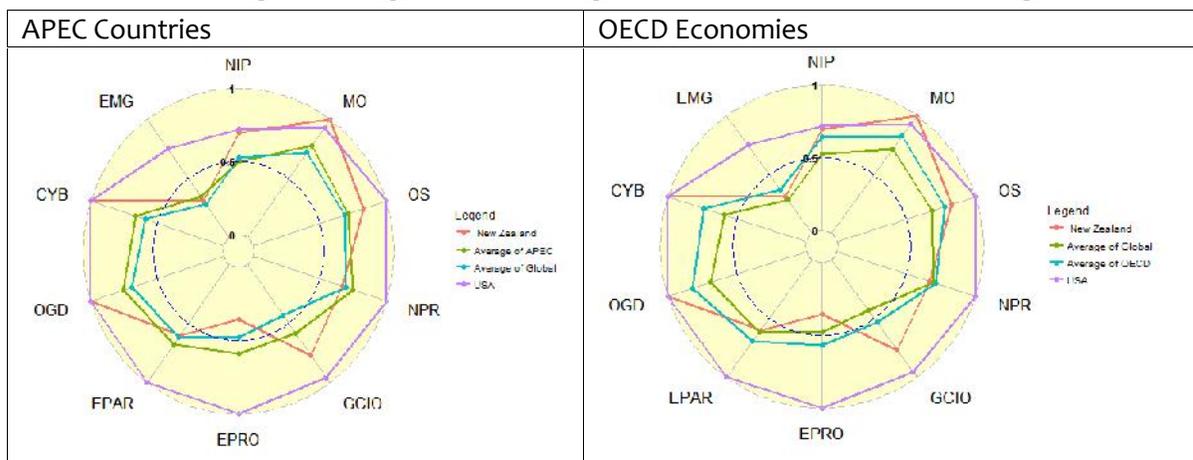
The weak point in Netherlands is about e-Government Promotion and the use of emerging ICT. One argument is that the lack of e-Governmente-Government promotion activities occurred because Netherlands does not need such programs anymore. Their citizen is aware already of e-Governmente-Government service and knows how to use it. However, by the increasing use of emerging ICT, Netherlands still has a chance to get the higher score in e-Government Promotion. The promotion activities will follow the progress of developing the Digital Services by default since it needs some introductions to the citizens about this matter.

New Zealand

1 General Information

Area: 268,000 km^2
Population: 4,438,393
Government Type: Parliamentary Democracy
GDP: $36,400

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

APEC Countries	OECD Economies

Among APEC Countries, except on the e-Government Promotion, New Zealand is excellent on all indicators. As shown on the above picture, New Zealand is exceptional in the basic infrastructure, Cybersecurity, Open Government, and GCIO. For Management Optimization, New Zealand is considered more advance than United States, the number one country in the current ranking. However, despite the high performance on these indicators, New Zealand has the low score on e-Government Promotion. The situation is even lower than the average of APEC countries and global average.

These achievements also reflect the position in OECD region in which New Zealand is considerably approaching United States in the Open Data and the Cybersecurity.

3 E-Government Development

New Zealand has continued the e-Governmente-Government to the next level in which the public services will be available in digital by default. In 2013, the new e-Governmente-Government strategic plan has been launched with the title "Government ICT Strategy and Action Plan to 2017". The strategy comprises four integrated domains which are covered by system assurance component. New Zealand adopt centralization for their e-Government development. The development is centrally led by a Government Chief Information Officer (GCIO). New Zealand, together with South Korea, New Zealand, Israel, and United Kingdom, has established Digital 5 (D5) Forum for supporting among member to improve their e-Governmente-Government.

GCIO has the central role in developing e-Government. GCIO holds the highest authority to lead the action and the collaboration with chief in other agency for delivering the optimum result. GCIO in New Zealand comprises several teams that represent specific expertise and functions covering managerial and technical aspects.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 85.5% of people in New Zealand were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 30.5% have fixed-broadband subscriptions, and wired broadband subscription has reach 92.7%.

4.2 Management Optimization [MO]

In June 2013, Cabinet of New Zealand has approved Government ICT Strategy and Action Plan to 2017. It is the revised version of Government ICT Strategy 2015 due to the dynamic ICT environment. The new plan is aimed to achieve the government's aim of an ICT-enabled transformation of public services to New Zealanders.

The new Government ICT Strategy is led by a partnership framework which involved key stakeholders across government agencies. Current e-Government Strategy New Zealand covers almost all aspects for optimizing back-end process such as the necessity of Governance and Leadership, Assurance Framework, Programs and Initiatives, and ICT System Assurance. In all, New Zealand has fully achieving the maximum score in Management Optimization domain.

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity,

Level of Security, and Level of Convenience. Among these five Online Service, e-One-Stop Service and e-Health have the lowest score, compare to other three online services.

In terms of complexity level, most of Online Service in New Zealand has reach a transactional in which user can start the transaction from applying to receiving the service through the portal. In addition to that, all Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

To measure the level of convenience, the third party application result has showed that three portals are above the average considerably in terms of speed. E-Procurement is the only portal that scored below average in terms of page speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 19 List of Online Services

Online Service	URL
e-Procurement	https://www.gets.govt.nz
e-Tax	http://www.ird.govt.nz/
e-Customs	http://www.customs.govt.nz http://www.ird.govt.nz/forms-guides/keyword/
e-Health	http://healthitboard.health.govt.nz/about-us/ehealth-vision
One-Stop Service	http://newzealand.govt.nz/ https://www.realme.govt.nz/what-it-is/

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of New Zealand (https://www.govt.nz/) contains proper information for local citizens and foreigners. Information about New Zealand is available on the portal. User can find information about culture and heritage, demographic, and government. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is above average both from PC and from Mobile Device. However, the portal does not provide the user with some functionalities such as news and social network integration.

4.5 Government CIO [GCIO]

New Zealand government has clearly defined the need of ICT leadership on e-Government. The e-Government Strategy stated the role, the mandate, and the position of CIO in central and local authority. The e-Government Action Plan was arranged by CIO from across agencies under a partnership framework. The Partnership Framework is initiated by GCIO. Despite the strong role of CIO in New Zealand, there is no GCIO development program found in New Zealand during the period of this research.

4.6 E-Government Promotion [EPRO]

The Government ICT Action Plan covers all aspects of developing ICT in government. In addition to technical aspect, managerial and awareness are mentioned on the document. The programs, initiatives, and funding for increasing the awareness on Digital Government have taken place. However, none of the activities related to e-Government Promotion has been found during this research.

4.7 E-Participation [EPAR]

Culture and society in New Zealand has been created as a high tech society. These factors have driven New Zealand to the next horizon of e-Government. Citizens and government can take the benefit of ICT in their daily life. For instance, parliament member has their own website and provide the citizens with the channel to communicate.

Despite of all aforementioned achievements, the absence of e-participation portal reduces the achievement of New Zealand in this indicator.

4.8 Open Government Data [OGD]

In 1982, New Zealand has launched Official Information Act to participate in the Freedom of Information Act movement around the world. To strengthen the implementation of these act, New Zealand has established Open Data Portal (https://data.govt.nz) to provide public with government information. To keep the information update, New Zealand government uses Data one.govt (Open Network Environment) as a platform for data submission.

4.9 Cyber Security [CYB]

New Zealand has ratified several laws and regulation related to cybersecurity. Some of them are as follow:

- Crimes Act 1961, Section 249
- Unsolicited Electronic Messages Act 2007
- Privacy Act 1993
- Electronic Transaction Act 2002
- Trust and Security Guidelines
- Privacy Maturity Assessment Framework
- Cyber Security Strategy

In addition to these laws, New Zealand has established Government Communication Security Bureau (GCSB) for providing information assurance and cyber security to the New Zealand Government and critical infrastructure organizations, foreign intelligence to government decision-makers, and cooperation and assistance to other New Zealand government agencies. Besides that, an IT Community New Zealand initiated the foundation of New Zealand Internet Task Force to improve cyber security posture of New Zealand.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). New Zealand has

attempted to implemented Cloud Computing for Public Sector. New Zealand Government has released the guidance and requirement for applying cloud computing technology in government agency. Other emerging technologies such as IoT and Big Data for government agencies are still in an initial stage in New Zealand.

5 Some Highlights

New Zealand has the impressive point on Management Optimization, Open Government Data, and Cyber Security. With the centralized style, New Zealand has reached the high level of e-Government development. The high score in Management Optimization reflects the high degree of connectivity and interoperability of government information system. In this area, New Zealand is attempting to the pursue the next step of public service under the theme "Services are digital by default". The effort to achieve the digital by default is equipped with the proper equipment on Open Government Data which ensures all stakeholder can take the benefit of government data. To increase the trust level on e-Government service, New Zealand also has a remarkable Cyber Security infrastructures.

In contrast to those three indicators. New Zealand still has the weakness. The use of emerging technology and e-Government Promotion are the weak point of New Zealand. As for the emerging technology, it is the new indicator for this year survey. New Zealand is commencing the use of Cloud Computing for delivering public services. Many countries are still in the initial stage on the use emerging ICT. Furthermore, another weakness point of New Zealand is on the e-Government Promotion. It is hard to find any pieces of evidence related to e-Governmente-Government promotion strategy and activities. One argument is that the lack of e-Governmente-Government promotion activities occurred because the New Zealand does not need such programs anymore. Their citizen is aware already of e-Governmente-Government service and knows how to use it.

By the increasing use of emerging ICT, New Zealand still has a chance to get the higher score in e-Government Promotion. The promotion activities will follow the progress of developing the Digital Services by default since it needs some introductions to the citizens about this matter.
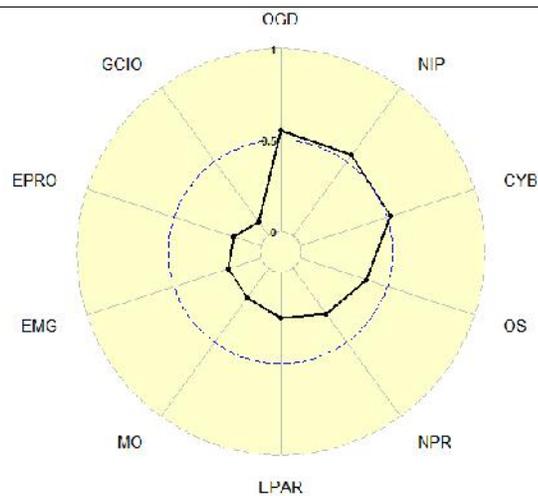
Nigeria

1 General Information

Area: 923,768 km²
Population: 181,562,056
Government Type: Federal Presidential Republic
GDP: $6,400
Historical Ranking (2006-2016):
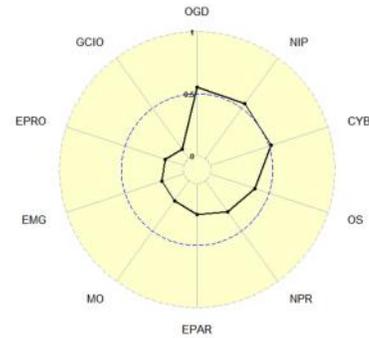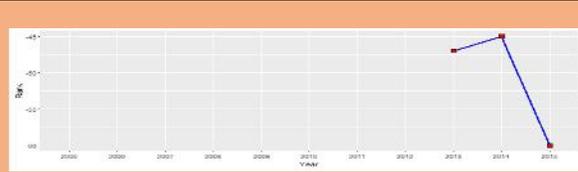
2 Positioning in a region

Africa

3 E-Government Development

The national portal, http://www.nigeria.gov.ng is beginning to evolve from just merely providing e-information to providing e-consultation services as well. It is also the government one-stop-shop for interacting with citizens. Some Web 2.0 tools are being used to allow more interaction between government and citizen. For instance, citizen can contact with government officials through feedback forms or email addresses available at some government websites, plus the government has added some social media integration (Twitter and Facebook) to the main portal.

The government established NCC (Nigeria Communication Commission) under guideline of ministry of Communication and Technology to help reach out, and protect the consumer and Internet user

can access it at http://consumer.ncc.gov.ng/. It is more of a citizen advocacy site compared with the national portal. Here, consumers and businesses are encouraged to send their complaints. They have access to podcasts, opinion polls, and Facebook pages as well.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

The International Telecommunication Union (ITU) estimates that in 2013, 38% of Nigerians used the Internet. About 10% of the population has access to wireless broadband, but the ITU claims that virtually nobody in the country (0.0%) had wired broadband access in 2013.

4.2 Management Optimization [MO]

As of 2014, Nigeria is ranked 141st in the world according to the United Nations' E-Government Development Index. The Nigeria government has various initiatives of government strategy that include: the National/State Economic Empowerment Strategies (NEEDS/SEEDS), the Vision 2020, the National e-Government Strategy (NeGST) and a well-formulated National IT policy. The National Information Technology Development Agency (NITDA) was charged with the responsibility of co-ordination the Nigeria project in collaboration with National e-Government Strategies Limited (NeGSt). The Government of President Olusegun Obasanjo approved this policy in March 2001. The Nigerian Federal Ministry of Information and Communications says that its priority is to provide citizens with credible and timely information on government activities and programs and initiatives to create a technological environment for Nigeria's social and economic development, but little has been done in termss of management optimization although various initiatives have been rolled out.

4.3 Online Service [OS]

In Nigeria there are legislative initiatives, already, aimed towards providing a favorable environment for the development of e-commerce in Nigeria witnessed principally, for example, by the draft Nigerian Electronic Transactions Bill which is still making its way slowly through the legislative process. On the other hand, the Nigerian Cyber-crimes Act was recently voted into law. The draft Electronic Transactions bill addresses matters such as the formation and validity of electronic contracts as well as the form and validity of electronic signatures while the draft Cyber-crimes Act tackles some types of criminal activity by or through computers and information systems.

4.4 National Portal [NPR]

The Nigerian e-Government portal is http://www.nigeria.gov.ng but the portal has some limitations. The interface is not user-friendly for all consumers and the portal provides mostly static information about news, the government, army and police activities and only link to government departments. There are no e-Services integrated into portal as well as no information about the social media in portal to encourage the Nigerian citizens to interact with their government. These limitations are understandable, though, in light of the limited availability of fixed broadband connections in the country.

4.5 Government CIO [GCIO]

There are no specific laws or mandates for CIO positions in Nigeria. The head of the National e-Governmente-Government Strategies (NeGST) may be the closest position in the Nigerian government. However, the NeGST website does not provide details on its leadership or organizational structure. There are no CIO associations in Nigeria and not CIO training course are offered by any university or training center.

4.6 E-Government Promotion [EPRO]

The Nigerian Government has many plans and strategies for developing e-Government as well as providing e-Services to citizen. In 2007, the central government, as part of its public service reforms, announced the intended use of electronic payments for all public sector transactions. This electronic payment system is now currently in use, and continues to improve. These include salaries of employees and payment for procurements and contracts. Also in 2007, the government of Nigeria established a public corporation known as Galaxy Backbone to provide its technological platform for e-Governmente-Government, and is working on a comprehensive broadband policy and vision document which will provide broadband definition, performance indicators, incentives for investment, macroeconomic targets, deployment guidelines and citizens charter. The Government has articulated a clear vision for e-Government, driven by the Ministers of Information and Communications and Science and technology. However, e-Governmente-Government is more fragmented and allocated through many different government organizations so it is not accessible on the same portal like many other countries.

4.7 E-Participation [EPAR]

The national portal, http://www.nigeria.gov.ng is beginning to evolve from just merely providing e-information to providing e-consultation services as well. It is also the government one-stop-shop for interacting with citizens. Some Web 2.0 tools are being used to allow more interaction between government and citizen. For instance, citizen can contact with government officials through feedback forms or email addresses available at some government websites, plus the government has added some social media integration (Twitter and Facebook) to the main portal.

Furthermore, the government established NCC (Nigeria Communication Commission) under guideline of ministry of Communication and Technology to help reach out, and protect the consumer and Internet user can access it at http://consumer.ncc.gov.ng/. It is more of a citizen advocacy site compared with the national portal. Here, consumers and businesses are encouraged to send their complaints. They have access to Podcasts, opinion polls, and Facebook pages as well.

4.8 Open Government Data [OGD]

On September 12, 2013, the first open data portal was launched in Edo State. Edo State is also the first sub-national government body in Nigeria and Africa to launch an Open Data Portal. Currently, the most up-to-date and effective open data portal for Nigeria is operated by the African Development Bank Group, and this only provides limited and narrowly-focused amounts of data. There is much room for improvement in this area.

4.9 The use of Emerging ICT [EMG]

There is no doubt that e-crime is an image problem for Nigeria. The recent passage of the new Cyber Crimes bill in the Nigerian Senate may be a step in the right direction. The bill is still awaiting passage in the Nigerian House of Representatives. There continues to be serious controversy over the bill, including whether it contains loopholes that will actually increase domestic corruption. However, it is clear that a tougher and more effective approach on cyber-crime and cyber security is necessary in Nigeria.

5 Some Highlights

The recent passage of the new Cyber Crimes bill in the Nigerian Senate may be a step in the right direction. The bill is still awaiting passage in the Nigerian House of Representatives. There continues to be serious controversy over the bill, including whether it contains loopholes that will actually increase domestic corruption. However, it is clear that a tougher and more effective approach on cyber-crime and cyber security is necessary in Nigeria

Nigeria still needs to improve further on its ICT services and telecommunication systems. Mobile Internet holds some promise for increasing access to marginalized sectors of the population and there has been exponential growth in mobile subscriptions. All Nigerian states now have some form of mobile coverage, however, there are still millions of Nigerians with limited or no access to ICT services due to lack of network infrastructure.

Moreover, there some new tech trends in the ICT field that Nigeria is trying to emulate to improve its telecommunication services. The Ministry of Communications Technology is collaborating with its agencies NCC and NITDA to create and strengthen software and improve broadband infrastructure development.

Also worthy of mention is the continuing trend of mobile banking, where subscribers can send and receive money using their mobile phones. This has been successful due to private sector initiatives to reach out to citizens in rural areas who did not have access to banks.
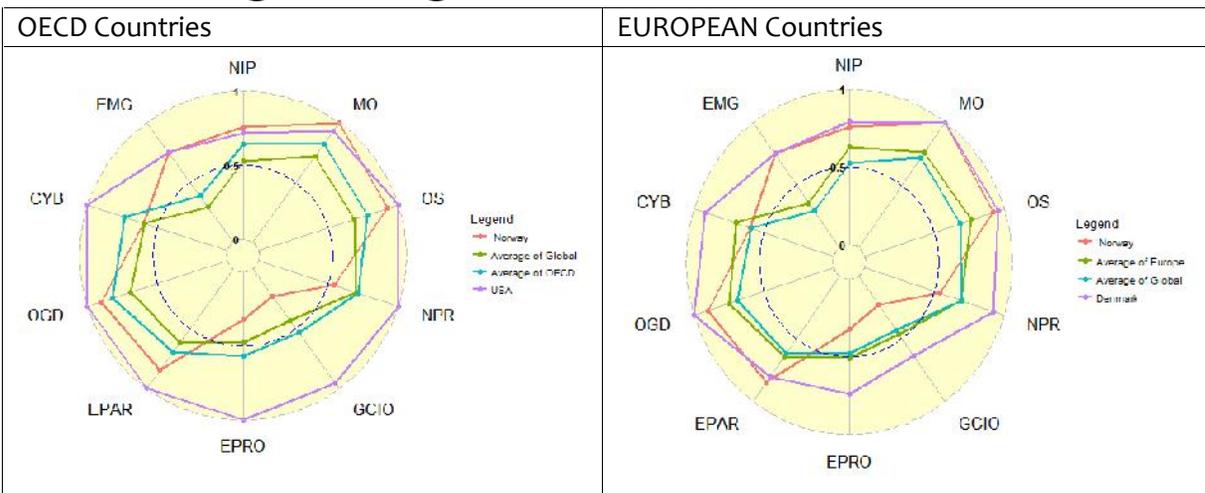
Norway

1   General Information

Area: 323,802 km²
Population: 5,207,689
Government Type: constitutional monarchy
GDP: $68,400

Historical Ranking (2005 – 2016)

2   Positioning in a region

OECD Countries	EUROPEAN Countries
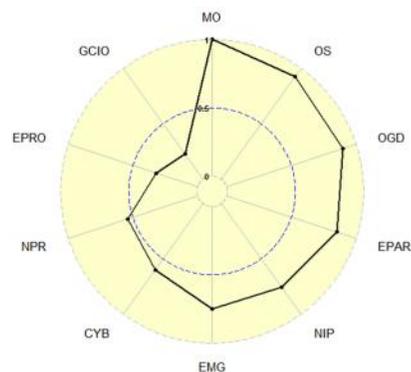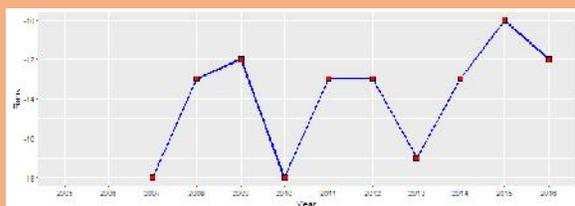
Among OECD countries, Norway shows a great performance in e-Governmente-Government progress, indicated by almost indicators have surpassed the OECD average, except Government CIO, cyber security and national portal. This phenomenon was also witnessed when comparing Norway with European Countries. In the comparison with the USA, Norway had similar scores in Management Optimization, Online Services, Network Infrastructure and Emerging Technology, while scored lower in the rest.

3   E-Government Development

Being one of the countries with advanced ICT infrastructure, digitalization will continue being the top priority in Norwegian Government's agenda for many years to come.

Norway has a huge advantage in online service development when in 2015 Q4, 97 per cent of the population aged over 12 had Internet access at home, at school or work, or elsewhere. More than 90 percent of citizens use the Internet daily (Eurostat 2014), ranks highest in Euro and the rest of the world. Norwegians also have high expectation regarding public sectors and many of them are ready for electronic interaction with government.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

The total of Internet users in Norway accounts for more than 96% of the population, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). Among them, about 93% people has a wireless broadband connection, while the figure for fixed-broadband subscriptions is only 38.1%.

4.2 Management Optimization [MO]

Norwegian Government has published the latest digital agenda for Norway in 2015, in which prioritized five areas: focusing on user centric; efficient use of ICT for strengthen innovation and productivity; strengthening digital competence and inclusion; effective digitization of the public sector; and data protection and information security[34]. Difi and Ministry of Local Government & Modernisation continues being strengthened as coordinating bodies in the public sector and the Norwegian Association of Local and Regional Authorities will be in charge for facilitating e-Governmente-Government development at local government level. The government also established the Digitization Council in 2016 to help government agencies succeed with their digitization projects.

There is a national enterprise architecture (NEA) developed by Norway International Experience Norwegian Government which consists of technical, conceptual, organizational and procedural standards. The architecture was translated into domain and organizational architectures at the local level.

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience.

In terms of complexity level, most of Online Service in Norway has reach a transactional level in which user can totally conduct their businesses online. In November 2015, a new authorization initiative called the ID Gateway (ID-porten) for "Mobile BankID" was launched, supporting Norwegian citizens to access over 600 public digital services via Altinn.no one-stop-service portal. Doffin is a new national procurement portal launched in 2014, enables public institutions in Norway to publish tender information. However, in prior to register as member, users are required to send all

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[34] https://www.regjeringen.no/contentassets/07b212c03fee4d0a94234b101c5b8ef0/en-gb/pdfs/digital_agenda_for_norway_in_brief.pdf

necessary papers and application documents to Doffin for manually approval. Regarding e-Health, Helsenorge.no is the Health and Care Services' portal providing guidance to the health services and self-service solutions available in the health sector. All online services had security measures such as SSL, Site Authentication, and Password Protection fully implemented.

To measure the level of convenience, the third party application result has showed that all portal is above the average in terms of speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights.

Table 20 List of Online Services

Online Service	URL
e-Procurement	doffin.no
e-Tax	http://www.skatteetaten.no
e-Customs	http://www.skatteetaten.no/
e-Health	https://helsenorge.no/
One-Stop Service	Altinn.no

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of Norway (http://www.norge.no/) contains proper information for local citizens and foreigners. Information about the country and latest events is also available by linking to another portal for visitors. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is above average both from PC and Mobile devices. The portal is also equipped with several basic functionalities search capability, site map, and Social Network integration.

4.5 Government CIO [GCIO]

4.6 E-Government Promotion [EPRO]

There are numbers of strategies and documents related to e-Governmente-Government and ICT development found within national and local government level, for examples, the Norway Digital Agenda (published annually), Difi' strategy 2012-2015, and so on.

Regarding to ICT budget, from the data of the Norwegian Government Agency for Financial Management, an estimate of ICT procurements in the public sector in 2014 is put at NOK 16.6 billion. Thanks to the consistent and substantial funding on ICT, the use of digital services in government agencies and municipalities is increasing dramatically: use of public services online increased by 235 per cent between 2010 and 2015 (based on number of logins through the e-ID Gateway[35]). Hundreds of services can be accessible via e-ID login solution and this number is still growing.

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[35] https://www.regjeringen.no/contentassets/07b212c03fee4d0a94234b101c5b8ef0/en-gb/pdfs/digital_agenda_for_norway_in_brief.pdf

In order to reduce the size and complexity of digitalization projects, the Government has issued the Principles of digitization projects which consists of five fundamental rules: start with needs, think big – start small, choose the right partner, ensure appropriate skilled leader, and iterate outcomes.

4.7 E-Government Participation [EPAR]

Since its launch in 2003, Altinn portal has played a significant role in the growth of the awareness of citizens about electronic forms and services. Over 200 million digital forms and messages have been transmitted via Altinn so far.

In the efforts to increase the interaction with citizens, Norwegian Government has put into place the use of Digital Mailbox, an initiative allows government agencies to send messages directly to citizens. Public administration bodies are mandated to implement the digital mailbox by the first quarter of 2016.

Digidel (http://digidel.no/) is another initiative launched in 2016 where courses and training programmes in computer literacy are provided. Some example courses are Tax Administration's tax return online service course or Difi's "Learn to login to public utilities with BankID"[36] course.

4.8 Open Government Data [OGD]

Norway has been ranked as the 3rd most advances country in Open Government according to the World Justice Project Open Government Index 2015.

In termss of legislation framework covering open government, Norwegian regulations which were based on the EU's PSI Directive from 2003, enforce public agencies to make information accessible for reuse[37]. Norwegian government also promulgated supportive law and policy documents such as: Public Administration Act, Freedom of Information Act (2006), Personal Data Act (2000), and so on to facilitate the open data.

4.9 Cyber Security [CYB]

The annually conducted survey of Norwegian Business and Industry Security Council in 2012 highlighted that only one in three public and private enterprises has preparation plans for crisis and that the cost of cyber incidents was ignored by one in three enterprises.

The latest cyber security strategy was published in 2012.

The Norwegian National Security Authority (NSM) is considered as a cross-sectoral professional and supervisory authority within the protective security services in Norway, is also responsible for matters of cybersecurity[38]. NorCERT (Norwegian Computer Emergency Response Team), a department operates under NSM, is responsible for detects cyber incidents in Norway. To promote research, training and education on cyber security, Norway established the Center for Cyber and Information Security in 2014, with the major mission is to increase the national capacity to cope with security challenges in digital space.

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[36] http://digidel.no/2016/04/13/difi-viser-vei-med-nytt-opplaeringsprogram/
[37] https://www.regjeringen.no/contentassets/4339bb2154bd4b829f1d147bb2b26da8/en-gb/pdfs/stm201220130023000engpdfs.pdf
[38] https://www.itu.int/en/ITU-D/Cybersecurity/Documents/Country_Profiles/Norway.pdf

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Brunei has started to implemented Cloud Computing for running One Government Private Cloud (OGPC). OGPC offers Infrastructure-as-a-Service (IaaS) for government agencies. E-Government National Center maintains this Cloud Computing Services. Other emerging technologies are still immature and no evidence to prove that Brunei implemented Big Data and IoT.

5   Some Highlights

Being aware of the high demand of citizen in communicating with public sectors via online way, Norwegian Government has put many efforts into building a strong and efficient public sector for better public services delivery. Major initiatives such as Altinn portal, Standard Portal (http://www.standard.difi.no/index.html), Public e-ID solution – MinID, and the latest one - Mobile BankID, launched on November 2015 - help the country securing its position in top 5 of Online Service delivery.

In June 2015, Nordic countries including Demark, Finland, Norway and Sweden have decided to cooperate on their open government strategy and implementation by sharing their national OGP working and together promote open data[39]. This cooperation and other efforts of the government in promoting for open government help Norway to score 9 out of 10 in Open Government dimension.
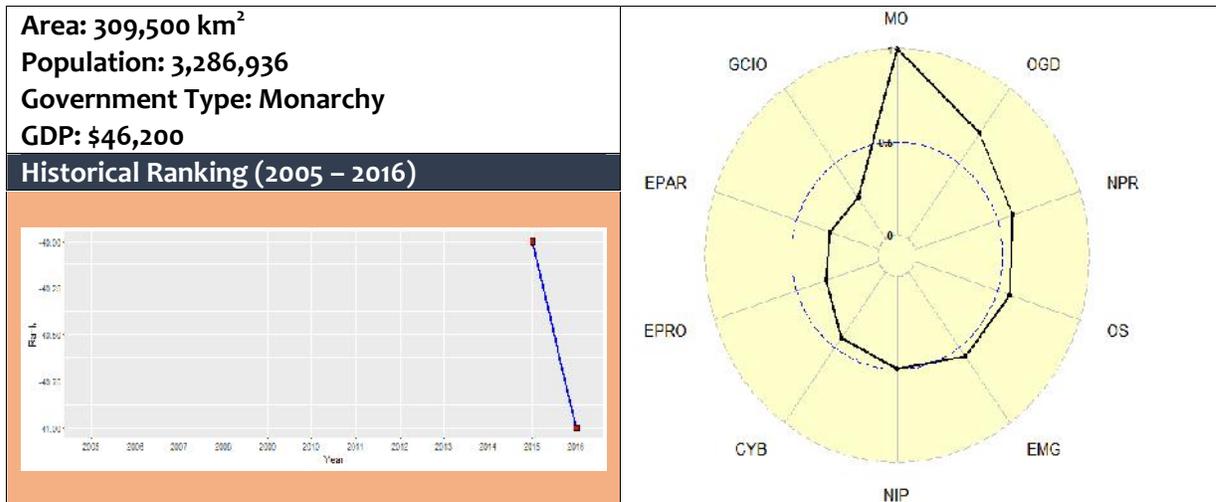
Ensuring a secure online environment continues becoming the main concern of Norwegian Government when both public and private Norwegian companies were targeted in 45,000 cases of computer hacking, theft and fraud last year, according to a recent survey among 886 companies. With a relatively low position in Cyber Security this year, there are still much works to do for Norwegian goverment.

With new challenges being arose such as aging society and refugees, extensive adaptions need to be entailed. These changes in demographic could increase the proportion of the population who have little or no knowledge on using digital applications, thus deepening the digital divide.
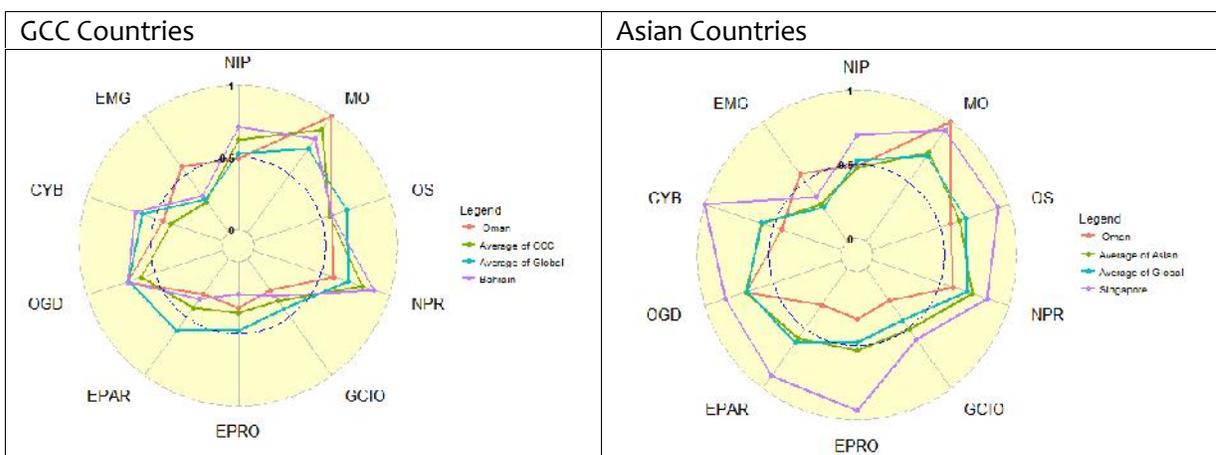
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[39]   https://joinup.ec.europa.eu/sites/default/files/ckeditor_files/files/e-Government%20in%20Norway%20-%20February%202016%20-%2013_0_v1_00.pdf

Oman

1 General Information

Area: 309,500 km^2
Population: 3,286,936
Government Type: Monarchy
GDP: $46,200

Historical Ranking (2005 – 2016)

2 Positioning in a region

GCC Countries	Asian Countries

Among GCC Countries, Oman has a better score than the average score of GCC in Open Management Optimization. As shown on the above picture, Oman is considerably low compare to the average of GCC on basic infrastructure, National Portal and GCIO. However, despite the lack basic infrastructure, Oman has been trying to take the benefit of emerging ICT such as Cloud Computing, Big Data, and IoT. Some progress in the area of emerging ICT has led Oman to get a better position than the average of GCC Countries.

These achievements also reflect the position in Asian region in which Oman is considerably approaching Singapore in the Management Optimization and the use of emerging ICT.

3 E-Government Development

Oman has started the e-Governmente-Government development since 2003 by endorsing the Digital

Figure 7 Information Technology Authority

Oman Strategy. As a monarchy, Sultanate Oman centralize the e-Government development. The role of Sultan is very dominant. By His Majesty's order, Sultanate Oman established the Information Technology Agency (ITA) in 2006. ITA is considered as a single organization that responsible for the execution of Digital Oman Strategy. In order to speed up e-Governmente-Government development and its adoption to the whole government offices and citizens, Sultan Oman launched annual Excellent e-Government Award.
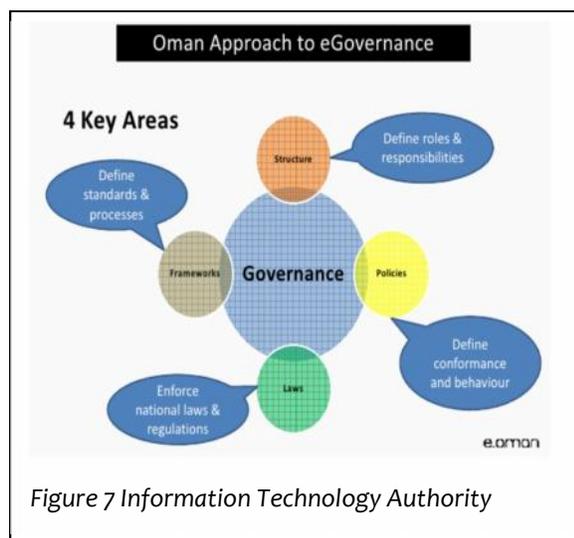
This year is the second year of Oman as a participating country in the ranking. As a result, there is no appropriate information of the progress of e-Government development in Oman. However, based on United Nation e-Government Index 2014, Oman places the 48th position, which is improved from rank 127th [40] in a decade earlier.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 70.2% of people in Netherlands were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 4.5% have fixed-broadband subscriptions, and wired broadband subscription has reach 73.7%.

4.2 Management Optimization [MO]

As an effort to bring the government to the next level, Oman has launched the Digital Oman Strategy. Referring to this strategy, each government agency has to specify its own e-Government target. The target should be aligned with National Targets. The Digital Oman Strategy is broken down into several initiatives and roadmap for completion. Measurable objectives are in place.

Centralizing the ICT solution is the choice of Oman Government in which they decided to build Oman Government Network. Oman government adopted enterprises architecture practices by introducing Oman e-Government Architecture Framework (OeGAF). As a result of centralization initiatives, Oman has developed National Payment Gateway where all governments are able to proceed efficient electronic transactions and simplify the processing of payment transactions for electronic services within the country.

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[40] http://unpan3.un.org/egovkb/en-us/Data/Country-Information/id/127

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, only e-Health has reach a high level of complexity while the others are still one-way interaction.

In terms of complexity level, except the e-Health, all of Online Service in Oman still in a one-way interaction in which user can only get information about government service and download some documents required for the services. In this scenario, visiting the government office physically is necessity. Given that, all Online Service have not implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

To measure the level of convenience, the third party application result has showed that three portals are below the average considerably in terms of speed. Except e-Procurement and e-Tax, all online service in Oman got scored below average significantly, thus, considerably fast to access. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 21 List of Online Services

Online Service	URL
e-Procurement	https://etendering.tenderboard.gov.om
e-Tax	http://www.taxoman.gov.om
e-Customs	https://www.customs.gov.om/portal/ar/esw/
e-Health	https://www.moh.gov.om
One-Stop Service	https://www.oman.om

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of Oman (http://www.oman.bh) contains proper information for local citizens and foreigners. Information about Oman is available on the portal. User can find information about culture and heritage, demographic, and government. In technical aspect, the result of Google PageSpeed™ Insight showed that the portal has severe issues on performance since the score is significantly below average both from PC and from Mobile Device.

4.5 Government CIO [GCIO]

Oman has established Information Technology Authority as a GCIO Office. Head of this authority take the responsibility similar to the GCIO. GCIO is important to deliver a strong sponsorship through strong leadership. In contrary to the presence of GCIO at national level, the presence of any formal document that clearly stated the mandate, the responsibility, and the position of GCIO in local government is hardly found.

4.6 E-Government Promotion [EPRO]

Digital Oman Strategy has put several initiatives including raising citizen awareness on e-Government services. However, there is no significant evidence to indicate that Oman government conduct any initiatives to promote the use of e-Government Service. This situation is similar to the one in any developed countries where the IT Culture has been embraced in the society. Moreover, Oman is not considered as a developed country. Without any efforts to increase the citizen awareness on e-Government, the huge investment in developing e-Government in Oman could become meaningless where citizens do not use the e-Services simply because they do not know how to use it and they do not know that the e-Service does exist.

4.7 E-Participation [EPAR]

Low score in this indicator is a kind of stereotype in a monarchy system; Sultanate is considered as a type of Monarchy. In Oman, it is rather difficult to find government officer's websites. Parliament member does not have official website to gather opinions from citizens. Despite the lack of aforementioned items, Oman has developed e-Participation Portal that can be accessed through www.oman.om. The presence of this program help Oman to get the score for this indicator.

4.8 Open Government Data [OGD]

Despite the absence of Freedom of Information Act, Kingdom of Oman considers that public has right to obtain information from government side. As part of Digital Oman Strategy, Sultanate of Oman has appointed Information Technology Authority (ITA) to manage Oman Open Data Portal at http://www.oman.om/wps/portal/index/opendata. Considering the risk of irrelevant and not-up-to-date, regular submission of government information for the Open Data Portal is conducted through a single point of entry system as required by ITA.

4.9 Cyber Security [CYB]

Oman has ratified several laws related to cybersecurity. Some of them are as follow:

- Royal Decree No 12/2011 on Cyber Law
- Royal Decree No 12/2011 on Cyber Law Chapter Seven
- Royal Decree No 12/2011 on Cyber Law Chapter Two
- Authentication Procedure
- Royal Decree 69/2008 on eTransaction Law; Article (14)

In addition to these laws, Oman has established Center of Information Security. It is the agency whose responsibility is to implement a national cybersecurity strategy, policy and roadmap of e-Oman. In addition to that, Oman has created Oman CERT for monitoring and solving Internet Security problems.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Oman has attempted to implemented Cloud Computing for Public Sector under Oman Government Cloud. The Cloud service is proved by ITA. Infrastructure-as-a-Service is offered to minimize the investment spent by

government agency. In addition to that, Oman has initiated the development of Big Data technology. The Big Data is still at initial stage; Introduction Stage.

5 Some Highlights

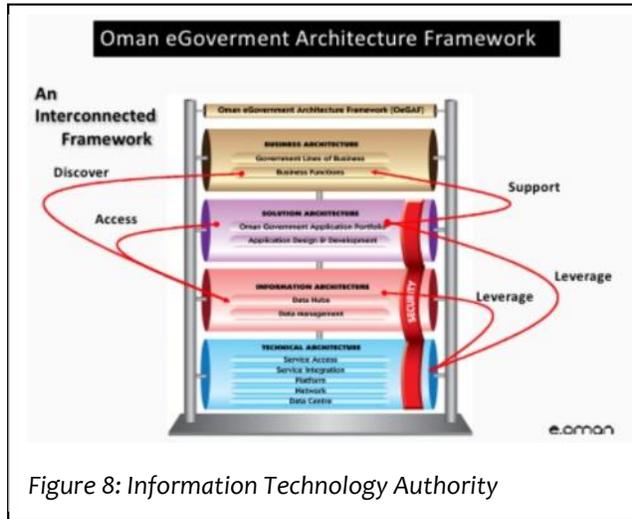Oman has the impressive point on Management Optimization. They have a comprehensive strategy and framework for strengthening the back-office. By adopting the best Enterprise Architecture Practices, Oman has established the Oman e-Government Architecture Framework (OeGAF). OeGAF consists of four main architectures[41]; Business Architecture, Solution Architecture, Information Architecture, and Technology Architecture. OeGAF ensure the interoperability among government information system.

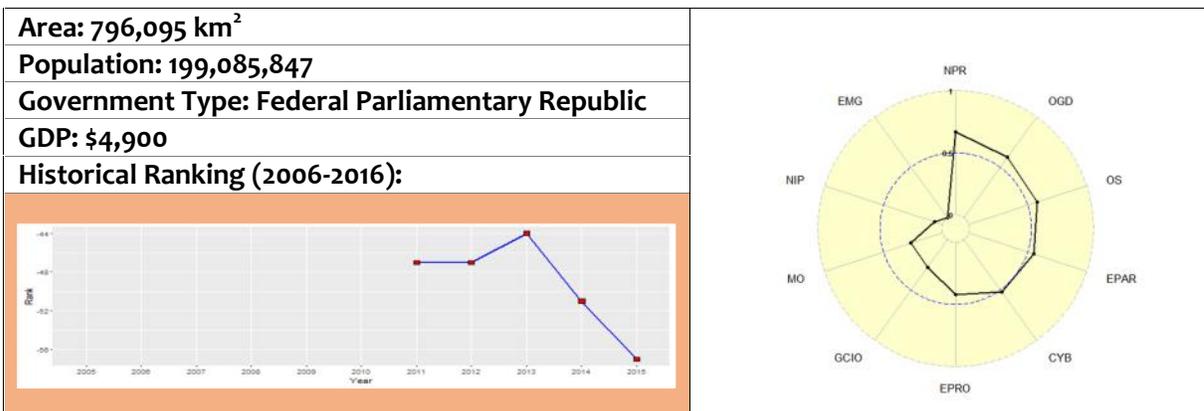*Figure 8: Information Technology Authority*

There is still a plenty of room for improvement e-Government development. Online service, e-Participation, and the Emerging ICT are among the low score of Oman e-Government ranking. However, by the strong foundation of Back Office Infrastructure, Sultanate Oman has an advantage to speed up the e-Government Development. In addition to that, Oman is one of the high GDP country that is believed as a factor for successful e-Government Development.
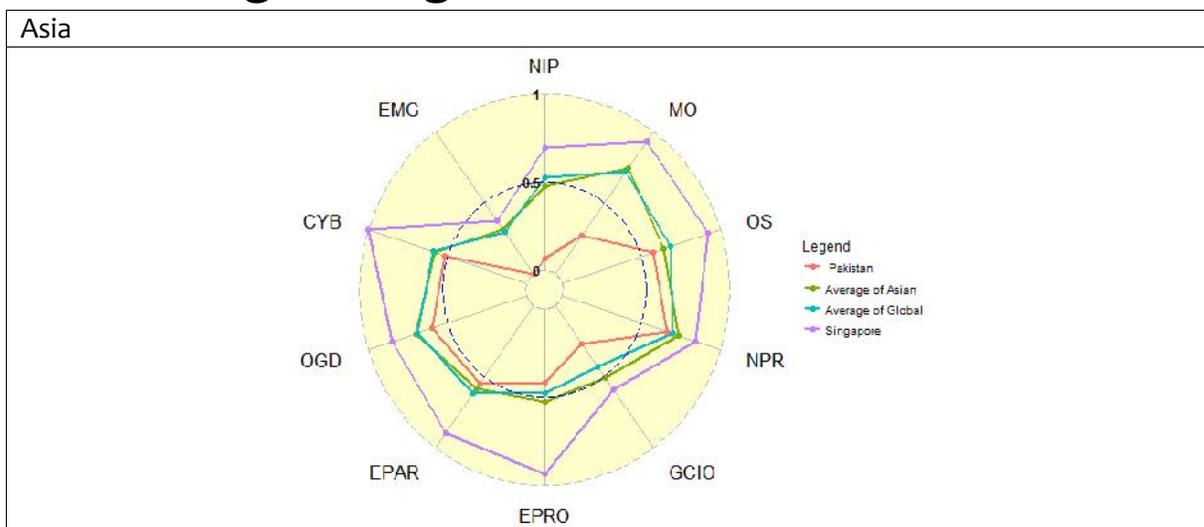
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[41] http://www.slideshare.net/e-Government/tutorial-2-omar-salim

Pakistan

1 General Information

Area: 796,095 km^2
Population: 199,085,847
Government Type: Federal Parliamentary Republic
GDP: $4,900
Historical Ranking (2006-2016):

2 Positioning in a region

Asia

3 E-Government Development

With over 118 million mobile subscribers in 2014, Pakistan has the highest mobile penetration rate in the South Asian region, up from only about 300,000 in 2000; more than 90 percent of Pakistanis live within areas that have cell phone coverage and more than half of all Pakistanis have access to a cell phone; fiber systems are being constructed throughout the country to aid in network growth; fixed line availability has risen only marginally over the same period and there are still difficulties getting fixed-line service to rural areas.

Pakistan telephone subscribers (main line) is around.722 million (2011), 30th in the world and Telephone-Mobile subscribers is around 111 million (2011), 9th in the world, Country code is 92;

Pakistani Internet host is around 365,813 (57th) as of 2012 as well country Internet country code is (.pk) Pakistanis collectively sent over 151 billion text messages during the year 2009. Nokia has cited Pakistan to be producing the third highest SMS traffic in the world in 2010.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Pakistan ranks as the 20th (2009) country in the world for Internet usage with 29.128 million users as of Dec, 2011, 15.9% penetration and 7.227 million Facebook users that shows 3.8 penetration rate as of Oct, 2012.

Pakistan most popular sites are major international ones, such as Google.pk, Yahoo, YouTube and Facebook and as of March 2012 Pakistan broadband users cross over 1.7 million. Pakistan has close to 50,590,000 personal computer users. Over the years the percentage of households using personal computers in Pakistan has grown substantially and around 350,000 new computer users added every year in Pakistan.

4.2 Management Optimization [MO]

Pakistan is one of the emerging countries in the world which is trying to make a difference in his way and implementing e-Governmente-Government in at an enormous rate as well as Pakistani government believe that Information technology is a vital tool in order to accelerated economic growth, efficient governance and human resource development.

Pakistan E-Government objectives are focused on high priority areas for improving the internal operations and management. Most objectives are intended to help Interior better execute administrative and supporting functions that exist across the entities. These functions, while in many cases part of the "back office", play critical roles in accomplishing the missions for which Interior is responsible. They are also crosscutting and have impacts across the Department and all mission---related activities. The usage of ICT in Pakistan is improving day by day in internal processes and the government's computerization efforts and the level of ICT integration is very good since last couple of years. Standardization of service procedures and information systems in order to achieve internal effectiveness and efficiency of governmental operations can be constrained by many reasons.

4.3 Online Service [OS]

The Proactive Data Publishing Service initiative would inventory high-value information currently available for download; fosters the public's use of this information to increase public knowledge; promote public scrutiny of agency services by citizens, journalists, the media and relevant stakeholders; identify high value information not yet available and establish a reasonable timeline for online publication in open formats.

Data.gov.pk's extendible platform will proactively publish government data online in multiple easy to use formats, create and institutionalize a culture of transparency, improve the quality of government information and create an enabling policy framework for open government.

4.4 National Portal [NPR]

The national portal of Pakistan (pakistan.gov.pk) is a gateway to improve the communication experience between the government and the public as well as provides a 'single window access' to information and government services which can be accessed by citizens and organizations/ business sector. The national portal of Pakistan has the basic interface for all government website and to contact government electronically. The Pakistani Government's Web portal presents a wide range of information resources and online services from various government sources, accessible from a single point. Pakistan Government's Web portal is a gateway to improve the communication experience between the government and the public. Moreover, it provides information that helps the public to better understand government structure. The well-organized portal serves as a platform that assists the public to find desired information. Moreover, it provides information that helps the public to better understand government ministerial structure, parliament and Senate. The well-organized portal serves as a platform that assists the public to find desired information. To improve users' browsing easy access facility, the portal also allows user link with sub-government portal (provincial government such as khyberpakhtunkhwa.gov.pk, punjab.gov.pk (that allow each individual user to visit the each portal as they desire. The portal is available in official language (English).

4.5 Government CIO [GCIO]

The E-Government Program in Pakistan is an initiative of Ministry of Information Technology (Ministry of Science & Technology) under the National IT Policy 2000 approved by the Federal Cabinet in August 2000. Extensive research has been undertaken in preparation of this program. This included covering all ministries of the Federal Government with regard to their requirements over a period. Recently office of government CIO issue Information Security Policy under the authority of the Government Chief Information Officer on October 2012.

The Pakistan C National directorate of e-Government was established within the Ministry of Information Technology to provide leadership and oversight for IT spending throughout the Federal Government. In addition, each Federal agency has its own directorate of e-Government.

4.6 E-Government Promotion [EPRO]

The Government of Pakistan has promulgated the Electronic Transaction Ordinance (ETO) and working towards developing e-Governmente-Government services. Many organization and website offer services such as e-Governmente-Government.gov.pk and. e-gov.pk.

The digital interactions between a Pakistan's government departments, citizens, businesses, employees and other governments improved from couple of years And this clearly appear from the efforts to develop and promote electronic Government services. The promotion of the use of the Internet and other information technologies to increase opportunities for citizen to participate with the Pakistan Government and promoting interagency collaboration providing electronic Government services, where these collaborations would improve the service provided to its citizens by integrating related functions and the use of internal electronic Government processes.

4.7 E-Participation [EPAR]

Electronic Democracy is one of important area that Pakistan government is working now and this is the solution Pakistanis are waiting for to solve inherent civil problems of Pakistan. There are many

projects for improvement e-participation and e-democracy. One of them is E-Democracy in Pakistan project. In the description of the project it is emphasized that "the aim is to offer the citizens an opportunity to get electronic access to relevant information related to administrative decisions concerning the open land in the district.

These initiatives by government agencies to allow stakeholders to contribute their opinion, either privately or publicly, on specific issues as well as it enable ICT to support individuals come together to form communities, to progress shared agendas and to shape and empower such communities. The website http://www.ecp.gov.pk/ provides the information on election in Pakistan.

4.8 Open Government Data [OGD]

This dimension measures the extent of the access of the general population to information and knowledge. This includes the presence of policies relating to freedom of information, access to publicly funded research (open content), availability of government data in a reusable format (open data) and the ability of citizens to access information relevant to their needs.

The Government of Punjab, Pakistan, has recently approved the Right to Information Act 2010 that enables public sharing of government data. As the act approaches the final stages of enactment, it has become imperative to develop an online platform that enables public sharing of government data with citizens and relevant stakeholders. Given the upcoming 2013 elections, soaring foreign and domestic investments in development projects, demands for increased accountability for public expenditure and transparent budgets, the Pakistani citizens' interest in accessing open government data has skyrocketed.

4.9 The use of Emerging ICT [EMG]

The e-Governmente-Government strategy plan now provides e-Services for almost all field and departments within the Pakistani government such as Pakistan Police: E-services, Supreme Court of Pakistan: Check Your Case Status online, Pakistan Research Repository: Digital Archives of PhD, Pakistan Railways: E-Services, Pakistan Post: E-service, Pakistan Medical and Dental Council: Check Registration of Doctors, Pakistan International Airlines: E-Air, Pakistan Electric Power Company: Electricity Bill SMS alerts and E-billing, Higher Education Commission: E-Services and High Court: E-services, So through all these E-services citizens can get on time and time and money efficient data anytime anywhere.

5   Some Highlights

Today's cyber threats are becoming increasingly more targeted and sophisticated with criminal networks operating across the world, coordinating complex attacks against targets in a matter of minutes. Due to the complexity of the cyber-threat landscape, cybercrime investigations are profoundly different in nature to traditional crime, requiring high-level technical expertise and large-scale cross-jurisdictional investigations. It is essential that law enforcement prioritize resources, build cross-jurisdictional and cross sectorial collaboration in addition to developing the technical expertise, tools and infrastructure required to effectively combat threats and eventually enhance digital security. In response, Pakistan Information Security Association (PISA) has been working for the last many years to highlight this much needed topic of Multi-Stakeholder coordination for combating Cyber Crimes. PISA will seek to implement an alliance with multi-stakeholders, including government
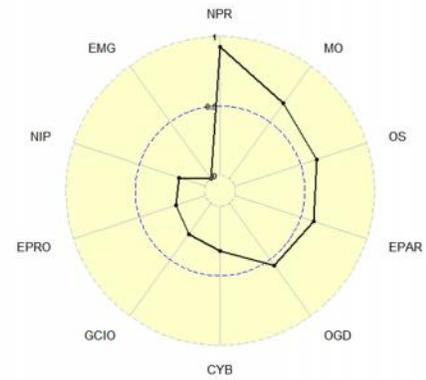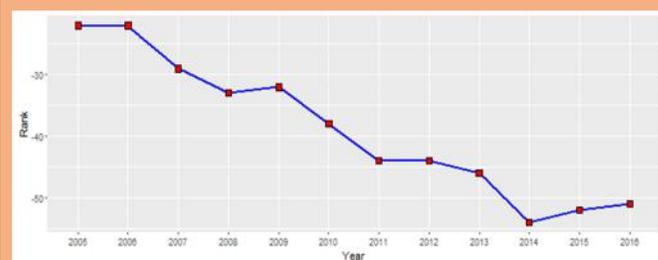
organizations, academia, law enforcement agencies and Internet security specialists from the private and public sector, to leverage their respective expertise and resources for fighting cybercrimes.
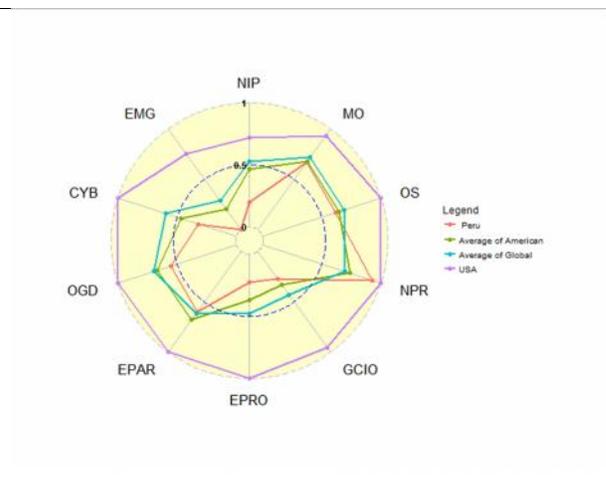
Peru

1 General Information

Area: 1,285,216 km²

Population: 30,444,999
Government Type: presidential republic
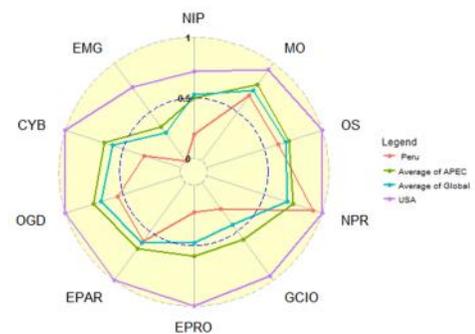**GDP: $12,300**

Historical Ranking (2005 – 2016)

2 Positioning in a region

AMERICA Countries	APEC Countries

Among American countries, Peru shows slow progress on e-Governmente-Government performance. Of the 10 indicators, only National Portal has higher score than the world and regional average point.

Similar thing happens in APEC where Peru surpasses the group average only on the national portal. Other scores are under the group's mean.

3   E-Government Development

E-Government in South Africa are considered as a high priority area for improving the internal operations and management. However, e-Government level in South Africa is still at the infancy phase. Most objectives are intended to help the Interior better executing administrative and supporting functions that exist across the government bodies. The e-Governmente-Government strategy is drafted by the Center for Public Service Innovation (CPSI) in associate with the Department of Public Service and Administration and the State Information Technology Agency.

4   Indicators

4.1   Network Infrastructure Preparedness [NIP]

Approximately 50% South African's population were Internet users in 2014, according to the latest report on Measuring the Information Society from International Telecommunication Union (ITU). Among them, wired broadband subscribers accounted for around 32% while more than 46.7% of total population have a wireless broadband connection.

4.2   Management Optimization [MO]

The Peru's e-Government master plan project has been initiated and implemented based on Peruvian government's sustained commitment to the project and experience-based support of Korean government. The Peru's e-Government master plan project was to analysis of Peru's informatization status, and establishment of vision and strategy of e-Government. The Peruvian government also issued the Digital Agenda 2.042 in 2011 which establish a framework for government on developing the use of IT.

E-Government in the Peruvian public sectors still has much room for improvement. This is due to the lack of necessary infrastructure to be implemented throughout the country, such as fiber optical network.

4.3   Online Service [OS]

The score for Online Service comprises of five sub-dimensions: e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience.

There are total around 748 services provided digitally. Most of them are at the two-way interactive level. The SEACE website, www.seace.gob.pe, managed by the OSCE, was created in 2004 providing electronic system for public procurement. Interested suppliers can register on the National Register of Suppliers, which is maintained on SEACE, and receive electronic notice of procurement information. Regarding e-health, a Telehealth Framework Law was issued via LAW No. 30421 by Ministry of Health on April 2016.

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[42] http://www.codesi.gob.pe/docs/AgendaDigital20_28octubre_2011.pdf

To measure the level of convenience, the third party application Google PageSpeed™ Insight43 has showed that all services have a good access speed.

Table 22 List of Online Services

Online Service	URL
e-Procurement	www.seace.gob.pe
e-Tax	http://www.sunat.gob.pe/
e-Customs	http://www.sunat.gob.pe/
e-Health	N/A
One-Stop Service	http://www.serviciosalciudadano.gob.pe/

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. peru.gob.pe is the government portal of Peru. It presents a wide range of information resources about country demographic, national programs, government structure, government agencies, legal documents and daily news regarding to government's operations. Information are delivered in Spanish only.

In technical aspect, the result of Google PageSpeed™ Insight showed that the website operates well in PC but represents some layout issues on mobile devices. The analysis also indicated several technical problems which may slow down the portal's loading speed. Social network features are supported.

4.5 Government CIO [GCIO]

The legal framework related to electronic government does not consider the CIO position. The equivalent of a CIO in the Peruvian public sector is the Chief of the National Office for Electronic Government and Informatics (ONGEI). This office is a part of the Presidency of the Council of Ministers (Prime Minister Office)

4.6 E-Government Promotion [EPRO]

ONGEI (National Office of e-Government and Informatics) is the agency responsible for e-Governmente-Government development. There is an annual fund for IT adoption of Peruvian businesses called Technology Science and Innovation Fund.

The data from Dominio Consultores 2013 shows that the government consumption on IT is still limited, accounting for only 19% of the total market.

4.7 E-Government Participation [EPAR]

With the growing of mobile Internet connections, the Peruvian Government focused on providing services via mobile applications. A portal for mobile government was established to serve this purpose (http://www.movil.softwarepublico.gob.pe/). This is the place where various mobile applications are provided to citizens. Some examples are: the San Borja Smart app provides as an

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43 https://developers.google.com/speed/pagespeed/insights.

interactive channel between citizens and San Borja city government, which citizens can access public information, report crimes, and so on; Chapa tu Aedes application helps user to identify and report on the symptoms of Dengue, Zika and other diseases;

In the efforts to increase digital inclusion, the Law No. 29904 - Law on the Promotion of Broadband was issued to narrow the digital divide by implementing of public Internet access centers, aiming to bring the benefits of Internet access for the entire population.

4.8 Open Government Data [OGD]

The Peruvian Government has published the Law of Transparency and Access to Public Information ("Information Access Law"). A representative commission was appointed on April 2016 to monitor the implementation of the National Open Government Action Plan.

4.9 Cyber Security [CYB]

Several regulation documents have been issued regarding cyber security: Law No. 29733 - Law on Personal Data Protection 2011; Law 30096: Computer Crimes Act 2013; and so on.

Pe-CERT, is the system of coordination of the Administration Publica, which is responsible for coordinating defense against cyber-attacks.

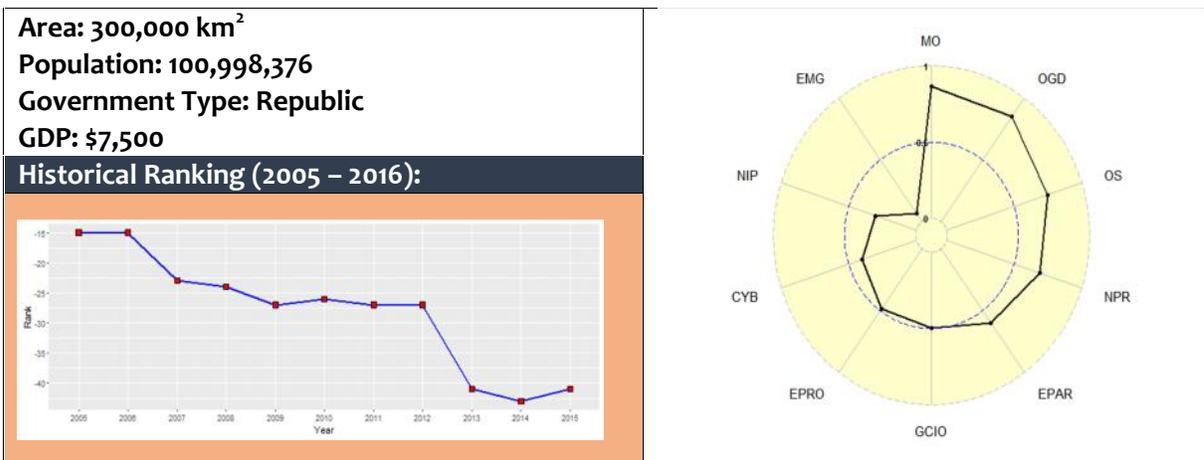## 4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). There is little evidence found on the use of emerging technologies in public sectors. No evidence has been found on the utilizing high-end technologies in government's operations.
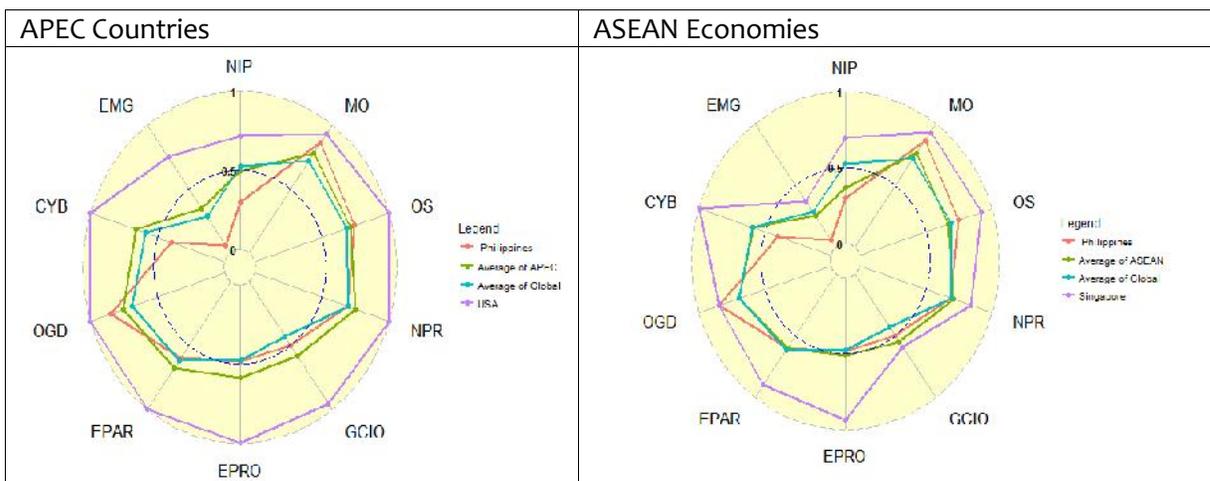
5 Some Highlights

Although several efforts have been acknowledge, Peru is still lacking of a holistic approach on e-Governmente-Government development.

Philippines

1 General Information

Area: 300,000 km²
Population: 100,998,376
Government Type: Republic
GDP: $7,500
Historical Ranking (2005 – 2016):

2 Positioning in a global organization and a region

APEC Countries	ASEAN Economies

Among APEC Countries, Philippines has a better score than the average score of APEC in Open Government Data and Management Optimization. As shown on the above picture, Philippines is very low on the basic infrastructure and the use of emerging ICT. However, despite the lack basic infrastructure, Philippines has been trying to take the benefit of modernized government process through Management Optimization and Open Government Data.

These achievements also reflect the position of Philippines in ASEAN region in which Philippines considerably approached Singapore in the Open Data and the Management Optimization.

3 E-Government Development

Philippines has a comprehensive e-Government Master Plan that covers year 2013 – 2016. The Master Plan emphasizes on the creation of transparency, collaborative, and integrated government.

Department of Science and Technology hold the strong role in e-Government through the establishment of ICT Office (ICTO). Philippines adopts centralization for their e-Government development. The development is centrally led by ICTO.

The Philippines' E-Government Master Plan (EGMP) adopts a whole-of-government approach that supports the Philippine Development Plan (2011-2016). The EGMP highlights the importance of collaboration, interoperability, shared services, and openness. It includes a list of proposed policies and mechanisms for creating and ensuring an environment that institutionalizes open government. Government interoperability frameworks (GIFs) and similar mechanisms toward this end will be crucial to the e-Governance agenda.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 39.7% of people in Philippines were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 23.2% have fixed-broadband subscriptions, and 28% of the population has a wired broadband connection.

4.2 Management Optimization [MO]

In 2010, Philippines has launched the Philippines' E-Government Master Plan (EGMP). It replaces the Philippine Digital Strategy 2011-2015 This master plan adopts a whole-of-government approach that supports the Philippine Development Plan (2011-2016). The EGMP highlights the importance of collaboration, interoperability, shared services, and openness. It includes a list of proposed policies and mechanisms for creating and ensuring an environment that institutionalizes open government. EGMP also contains a measurable target and clear responsibilities of government agencies. For supporting such priorities, Philippines has developed Government interoperability frameworks (GIFs) and similar mechanisms.

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience.

In terms of complexity level, most of investigating Online Service in Philippines has reach a transactional in which user can start the transaction from applying to receiving the service through the portal. All Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

To measure the level of convenience, the third party application result has showed that, except the e-Customs, all portal is above the average in terms of speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 23 List of Online Services

Online Service	URL
e-Procurement	https://philgeps.gov.ph/
e-Tax	http://www.bir.gov.ph/
e-Customs	https://www.nsw.gov.ph/
e-Health	http://www.philhealth.gov.ph
One-Stop Service	http://www.gov.ph/services/

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of Philippines (http://www.gov.ph) contains proper information for local citizens and foreigners. Information about Philippines is available on the portal. User can find information about demographic, and government. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is below average both from PC and from Mobile Device. Moreover, the portal does not provide the user with some functionalities such as inquiry form, and Social Network integration.

4.5 Government CIO [GCIO]

Referring to the Philippines Digital Strategy, due to the absence of formal GCIO, there is an organization called The Chief Information Officers Forum, Inc. (CIOF). This is a non-profit organization incorporated by CIOs of different government departments and agencies with the Securities and Exchange Commission (SEC). The heads of government offices have the discretion to designate the heads of their IT departments as Chief Information Officers of their respective agencies.

4.6 E-Government Promotion [EPRO]

Raising public awareness of ICT is one of the Action Plan in Philippines Digital Strategy. E-Government Projects, the deliverables and the impacts, are evaluated through the Medium-Term Information and Communications Technology Harmonization Initiative (MITHI) and through the agency's Information Systems Strategic Plan. MITHI is an e-Government and ICT support mechanism that aims to harmonize and ensure interoperability among ICT-related resources, programs, and projects across the government. It is a government body composed of representatives from different government agencies (Department of Budget and Management, Department of Science and Technology, National Economic and Development Authority).

4.7 E-Participation [EPAR]

Culture and society in Philippines governmental sector has been created with an IT savvy. Government officers can take the benefit of ICT for supporting their role. For instance, parliament member has their own website and provide the citizens with the channel to communicate. The

presence of e-participation portal (Crisis Response) contributes to the achievement of Philippines in this indicator so far.

4.8 Open Government Data [OGD]

Up to this year, The Congress still arrange the process of ratification of Philippines Public Information Bill. This Bill is an integral element of the Aquino Good Governance and Anti-Corruption Plan of 2012-2016. To strengthen the implementation of these act, Philippines has established Open Data Portal (http://data.gov.ph) to provide public with accessible government information. Three agencies are involved in the Open Data Project; Department of Budget and Management, Office of Presidential Spokesperson, and The Presidential Communications Development and Strategic Planning Office.

4.9 Cyber Security [CYB]

Philippines has ratified several laws and regulations related to cybersecurity. Some of them are as follow:
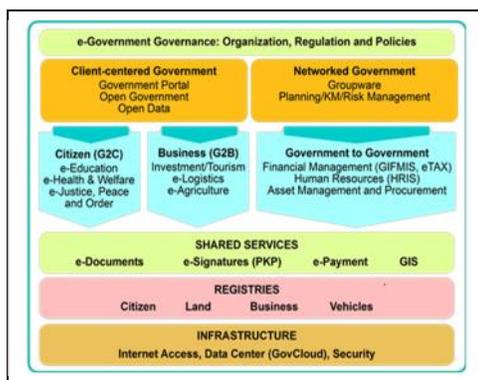
- Cybercrime Prevention Act 2012
- Data Privacy Act
- Electronic Commerce Act in 2000
- Executive Order No. 810, series of 2009

In addition to these laws, Philippines has set two institutional structures for strengthening Philippines in Cybersecurity; Cybercrime Investigation and Coordinating Center (CICC) and Department of Justice (DOJ)- Office of the Cybercrime (OOC).

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Philippines has implemented Cloud Computing Services for government agencies under iGovPhil Projects. The Government Cloud Computing is run on top of National Government Data Center (NGDC) and is a joint program between Information and Communications Technology Office - Department of Science and Technology (DOST-ICTO) and Advanced Science and Technology Institute (DOST-ASTI). It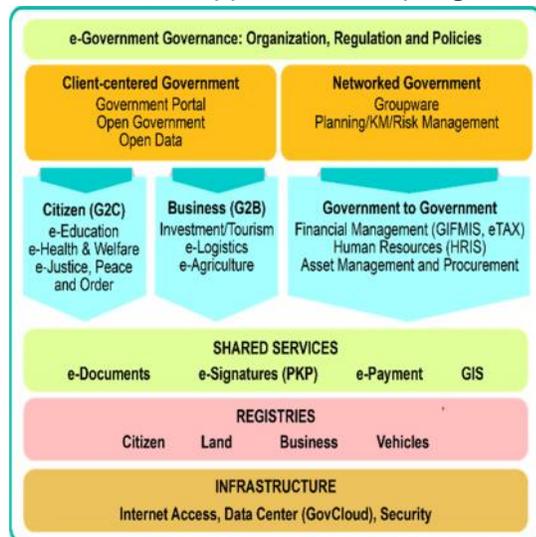 offers Infrastructure-as-a-Service (IaaS) to other government agencies. Other emerging technologies are still not common and there is no evidence to prove that Philippines implemented such technologies.

5 Some Highlights

Philippines has the impressive point on Management Optimization, Open Government Data, and Online Service. With the comprehensive e-Government Master Plan, Philippines is able to improve those three indicators. The high score in Management Optimization reflects the high degree of connectivity and interoperability of government information system as required by the Master Plan. In this area, Philippines is attempting to the pursue the connected yet integrated government under the theme "iGovPhil" Initiative. The effort to achieve the connectivity and interoperability among government agencies is equipped with the proper equipment on Open Government Data which ensures all stakeholder can take the benefit of government data. To engage the citizen and business enterprise for using e-Government system, Philippines is continuously enhancing the Online Service.

In contrast to those three indicators. New Zealand still has the weakness. The use of emerging technology and Network Infrastructure are the weak point of Philippines. As for the emerging technology, it is the new indicator for this year survey. Philippines is commencing the use of Cloud Computing for government interoperability and integration. Many countries are still in the initial stage on the use emerging ICT. Furthermore, another weakness point of Philippines is on the classical issue for developing country, i.e., Network Infrastructure Preparedness (NIP). Most developing countries have problem with the telecommunication infrastructure either on the penetration or the quality of it. Furthermore, there is small chance for developing countries like Philippines to significantly increase the NIP since it needs a big investment and involves the "business-friendly" calculation.
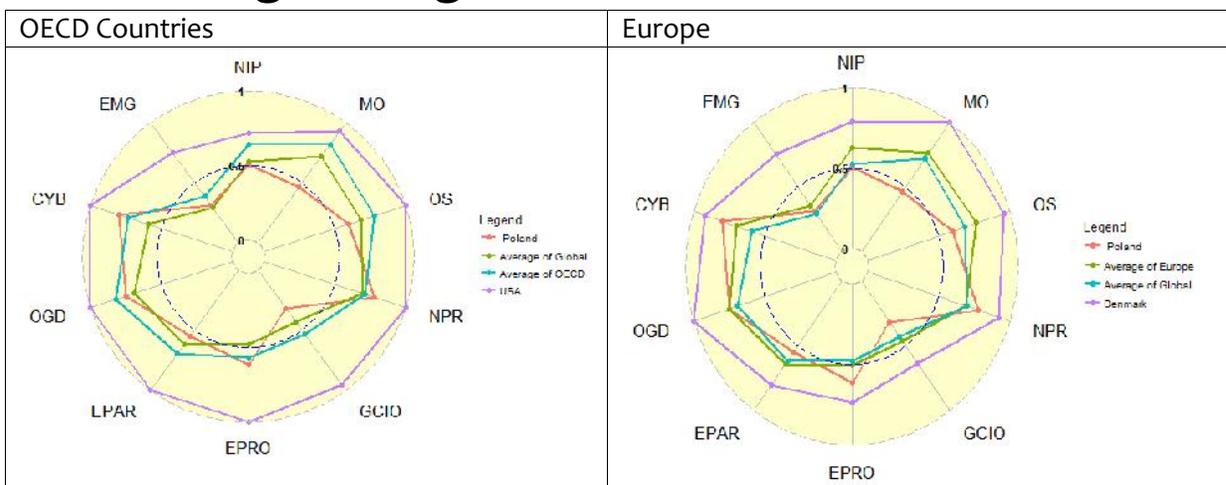
Poland

1 General Information

Area: 312,685 km^2
Population: 38,562,189
Government Type: Parliamentary Republic
GDP: $26,400
Historical Ranking (2005-2016):

2 Positioning in a region

OECD Countries	Europe
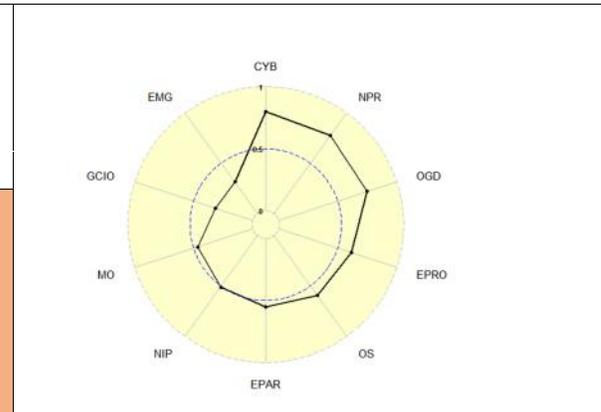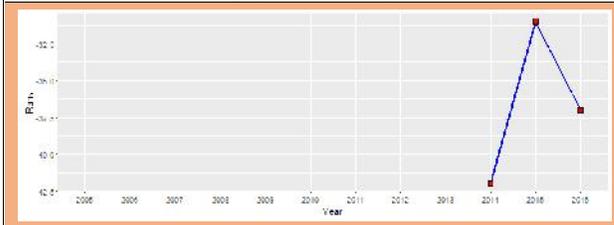
3 E-Government Development

The cyberspace of the Republic of Poland includes systems, networks and data communication services of particular relevance for the internal security of the country, operated, among others, by state and local government institutions, the banking system as well as systems to ensure the functioning of the country's transport, communications, energy, water and gas infrastructure and health care IT systems, where their destruction or damage may pose a considerable threat to human life or health, national heritage and environment or cause serious damage.

The Prime Minister is responsible for the protection of the Polish cyberspace. The leading role in the area of cyber protection is played by: the Ministry of Interior, the Internal Security Agency, the Ministry of Defence and the Military Counter-intelligence Service. While the Government Centre for

Security is responsible for coordinating the protection of critical data communications infrastructure. The system also includes other government entities and private individuals – owners of resources which are critical for the state's ICT infrastructure.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

The first e-Government strategy in Poland, Gateway to Poland (2002-2006), was published in December 2002 and later updated with a concept of e-PUAP (explained below). From 2004-2006, Poland issued e-Poland: The Strategy on the development of the Information Society, with objective were to contribute to a knowledge-based economy development and to improve citizens' quality of life. To reach these objectives, four priorities were set: provision of broadband Internet for all schools; development of the 'Gateway to Poland' - an integrated platform for e-Government services; development of Polish content on the Internet; and universal access to ICT training

4.2 Management Optimization [MO]

The first action plan was introduced in 2005 – 2006, this action plan derived from ePoland and known as ePolska. The first plan for computerization introduced for the period 2007 – 2010, which describes in a systematic manner concrete tasks to be carried out by public bodies in the field of information society development and for the provision of e-Services. The aim of this plan is to introduce a new range of e-Services between 2007 and 2013. New e-Services are meant to be set up, covering, among other services: the processing of IDs and passports; the change of residence details; the booking of doctors' appointments; eTax declarations sending; and the reception of information from registry offices.

The newest strategy on e-Government is the National Development Strategy 2020. This strategy's objective is to digitize public administration to the extent possible, to make government accountable and transparent to the public, and creating a central IT infrastructure for the entire government.

4.3 Online Service [OS]

In the Europe, Poland standing at 19th out of the 32 measured countries, online service accounted 79% and lower than EU average of 82%. Poland has not a centralized e-Procurement infrastructure but a Public Procurement Office's (PPO) portal, which plays a central role in the development of e-Procurement. The portal operates in parallel to the website of the Public Procurement Office and it contains information and tools aimed at electronic procurement. Like other EU countries, e-Service in Poland is divided to citizens and businesses, Poland issued services for citizens. For example, the e-Tax system was introduced in the late 2000s at http://www.e-deklaracje.gov.pl. It allows anyone with an electronic signature, who has registered as an online client with the Taxation Office, to submit his/her tax declaration electronically.

4.4 National Portal [NPR]

In December 2014, Poland launched the third version of its official promotional website, accessible at www.polska.pl. The new site is currently in beta testing. It is available in English and Polish. This

portal gives information about Polish history and culture, tourism, science and industry. It is easy to use and find information with its search engine and menu system. This portal does

Besides the promotional portal, Poland has another portal called e-PUAP to provide citizens and businesses with e-Services. It is located at www.epuap.gov.pl. It was intended to electronically integrate all public registers and provide an integrated platform supporting a number of interactive services for citizens and businesses, with user identification/authentication, electronic case handling and e-Payments, when needed. The latest version was updated in 2011 with two-fold purpose to enhance the portal's convenience for citizens and to facilitate the provision of e-Government services for public entities.

4.5 Government CIO [GCIO]

There is no evidence on Government CIO found in Poland, but they do have a similar position in the Minister of Administration and Digitization. Andrzej Halicki currently serves in this role.

4.6 E-Government Promotion [EPRO]

Regarding e-Government legislation, Poland has a long-standing act regarding the computerization of the operation of the Entities Performance Public Tasks. It grants both citizens and businesses the right to contact public authorities electronically. This Act furthermore sets up horizontal/infrastructure programs for all sectors of Public Administration and establishes a common interoperability framework for IT systems in the Polish public sector

The act on access to Public Information allows anyone to demand access to public information held by public and private bodies exercising public tasks, as well as trade unions and political parties. The bodies must officially respond within 14 days.

4.7 E-Participation [EPAR]

The information society strategy is multidimensional and covers different aspects of information society development, included e-participation. It defines the vision and mission for the development of the information society in Poland. Within each of the three priority areas (Human, Economy and State), it maps out strategic directions and determines the objectives that should be accomplished in order to achieve the desired outcome as efficiently as possible.

4.8 Open Government Data [OGD]

MamZdanie.org.pl was the first nationwide service dedicated to open public consultation. It was created in response to the need for greater transparency in the creation of legislation and other documents defining public policies (at both national and local).

4.9 The use of Emerging ICT [EMG]

Social security benefits are also issued by Poland Government, it includes Unemployment benefits, Child allowances, Medical costs, passport and driver's license, Car registration, Certificates (birth, marriage) but some of them had information only without transactions.

Regarding the e-Health system, The National Health Fund has implemented a public information system of waiting list length and waiting times for health services at healthcare providers – available in all regional branches of the National Health Fund. Some healthcare providers have implemented

appointment systems (mostly semi-interactive: the hospital has to call back the person who has filled in the form)

5 Some Highlights

Poland has taken significant steps towards the development of an e-Government framework that aims to define the rights and obligations of both citizens and businesses. The new trends for e-Government development regarding the e-Government strategy and focus on:

- The Strategy for the Development of the Information Society in Poland until 2013
- The Computerization Development Strategy of Poland until 2013 and Perspectives for the Information Society Transformation by 2020 sets out the framework for the development of Poland's Information Society

Poland was ranked 42nd in the United Nations' E-Government Development Index in 2014, which is relatively consistent with previous rankings. Poland will remain focused on providing user-friendly and reliable e-Services in the coming years.
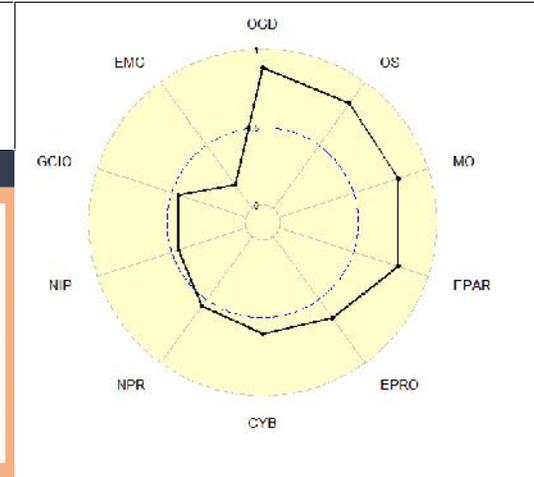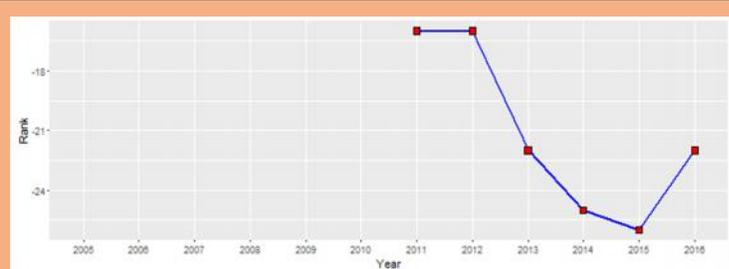
Portugal

1 General Information

Area: 92,090 km^2
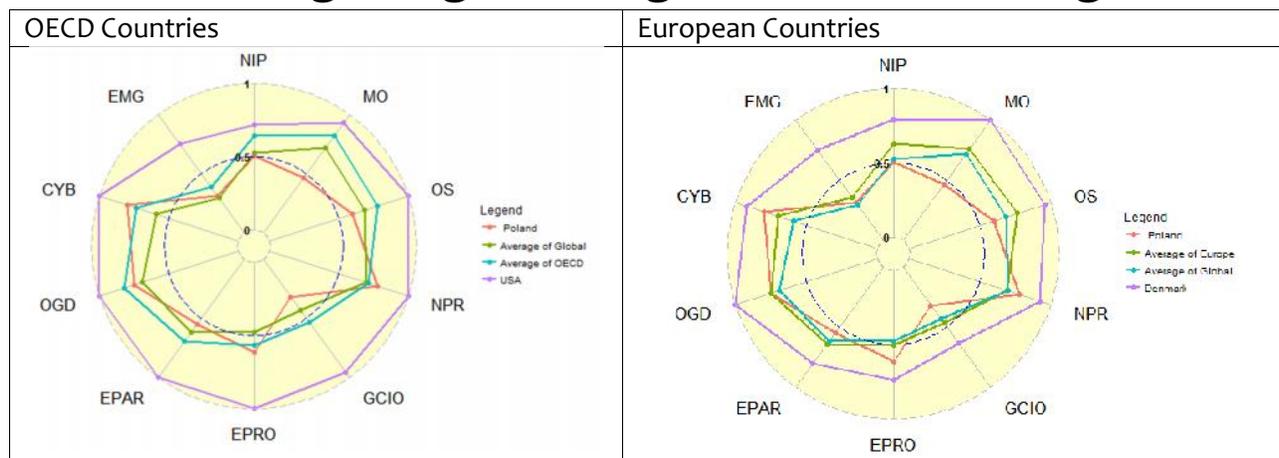**Population: 10,825,309**
Government Type: Republic; Parliamentary Democracy
GDP: $27,800

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

OECD Countries	European Countries

Among OECD Countries, all indicators except National Portal (NPR), GCIO and the use of Emerging Technologies for government (EMG) indicators are above or same with the average score of OECD members. Amongst European countries, Portugal is placed below Denmark. However, as other European countries, the e-Participation (EPAR) indicator of Portugal is same level with those of Denmark, the best country in Europe region.

3 E-Government Development

The Portuguese e-Government Development Strategy is coordinated at the level of the Presidency of Council of Ministers, by the Minister of the Presidency and the Administrative Modernization, and undertaken by a series of key public institutions led by the Agency for the Administrative Modernization (AMA). This strategy will be carried out by the new Simplex Program, under the

motto A STRONG, INTELIGENT and MODERN STATE. In addition, AMA is a public institution that took over the responsibilities in the areas of modernization and administrative simplification as well as e-Governmente-Government (formerly under the Agency for Knowledge) in 2007.

The Portugal Digital Agenda, along with the "Strategic Plan of ICT Rationalization and Cost Reduction - PGETIC", approved by the Council of Ministers Resolution No. 12/2012, will make an important contribution to the achievement of the national objectives in the fields of administrative modernization. Therefore, the Portugal Digital Agenda no longer focused only on Government action and public administration, and also have a strong involvement and participation of civil society and the private sector, in particular, of the entities related to the ICT sector.

Vision of strategic comprehensive, PGETIC

In March 2014, Portugal launched the National Administrative Modernization Strategy (PGETIC). It is based on the digital by default principle in order to reduce the bureaucratic burden on citizens and economic operators, by introducing transparency and efficiency and reducing the constraints generated by the slowness of different procedural acts. In addition to this effort, as means to improve the efficiency of the public sector and deploy better electronic services that simplify and enhances the competeveness to the citizens and business, it's being renewed the strategic plan for PGETIC in the public sector started in 2012. The creation of PGETIC meant great achievements in ICT management in the Portuguese Public Administration. It provided the public sector with an extra set of tools to enhance its operation, and represents the beginning of a global plan towards a rational use of ICT resources, with a flexible and resilient structure that allows addressing future challenges in a very fruitful way. The ICT rationalization measures, detailed in this plan, were targeted with a view to ensuring, through the provision of services quality ICT, better public services at a lower cost

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 64.6% of people in Portugal were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 26.7% have fixed-broadband subscriptions, and wired broadband subscription has reach 45.3%.

4.2 Management Optimization [MO]

e-Government in Portugal is strongly connected to Administrative Modernization and Public Service Delivery initiatives, focusing on promoting a less bureaucratic Public Administration, cost-effective

solutions and innovative public services using unique counters, digital services or interoperability solutions.

The Strategic Plan for ICT rationalization on the Public Sector (PGETIC), launched in 2012, will also be renewed as a means to improve the efficiency of the public sector and deploy better electronic services. PGETIC will be geared as a more efficient and effective public sector can provide electronic services through the use of ICT to attain better integration and interoperability, innovation and competiveness and resource sharing.

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and their URL Address. All of those services were investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. All these five Online Service are the best performers as the same level of total score for each online service.

In terms of complexity level, all online services have reach interaction level where the citizen can obtain the service without necessarily visit to the government office. All e-Services in Portugal such as e-Tender systems, e-Tax systems, e-Payment systems, Social Security Services and Civil Registration Services are presented with two-way interaction and protected with security. Concerning the e-Health systems the Government provides a wide range of information on public healthcare, and The Citizen Card or Mobile Digital Key allows authenticating the Citizens Area to access your clinical information, as recorded by professionals of the National Health Service, confidentially and securely. In addition to that, all Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

To measure the level of convenience, the third party application result has showed that three portals are above the average considerably in terms of speed. All these five Online Service scored below average, thus, considerably slow to access. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights.

Online Service	URL
e-Procurement	http://www.base.gov.pt/
e-Tax	https://www.portaldasfinancas.gov.pt/pt/home.action
e-Customs	https://aduaneiroqua.portaldasfinancas.gov.pt/jsp/main.jsp
e-Health	https://www.sns.gov.pt/
One-Stop Service	https://www.portaldocidadao.pt/

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. The Portuguese government has three main domains that collectively make up its online presence. National Portal of Portugal "https://www.service-public.fr/" contains proper government information for citizens. User can find information about government and public consolations that is available in both Portuguese and English. And the Portuguese government also has citizen portal, "http://www.portaldocidadao.pt/"; and enterprise portal,

"http://www.portaldaempresa.pt". All these websites are integrated and share the same framework. Furthermore, the portals provide remarkable functionality for citizens and enterprises. They act as a gateway for all e-Governmente-Government services and administrative resources. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is above average on both from PC and from Mobile Device.

4.5 Government CIO [GCIO]

The Portuguese government office has GCIO – right now is temporary and was defined for the implementation of the ICT strategy action plan. Currently it's being approved a stable governance for ICT in the public sector alongside the renewed strategy for ICT.

The Model Governance of PGETIC, approved by Resolution of the Council of Ministers No. 60/2012, identifies the various agencies that take responsibility for the implementation of PGETIC the respective responsibilities and articulation. At present it is an executive body that defines and coordinates the ICT policies at a supra ministerial level and CIOs and CTOs in each ministry that define the ministerial strategy and coordinates the implementation.

4.6 E-Government Promotion [EPRO]

At the Government and local level, some activities such as the e-Government strategy, e-Government policy, and training e-Government for citizens as well as e-Government conferences are going well. However, there is no significant evidence to indicate that Portuguese government conducts any initiatives to promote the use of e-Government Service. This situation is similar to the one in any developed countries where the IT Culture has been embraced in the society.

4.7 E-Participation [EPAR]

In general, government web sites demonstrate interactive functionality and good design. These factors have driven Portugal to the next horizon of e-Government. Citizens and government can take the benefit of ICT in their daily life. However, there is no application where the citizen can directly communicate to the government. There is only the form provides a graphical interface for sending e-mail to the President, Parliamentary member and government. On the other hand, in termss of participatory decision making processes or public discussions, national online portal presence offers limited public engagement.

4.8 Open Government Data [OGD]

In April 2011, the Parliament approves legislation establishing the use of open standards in the information systems of Public Administration institutions. It is considered a fundamental step for the sovereignty of and the control over documents that public institutions own. AMA is committed to the development of a wide and open platform containing all kinds of data from public bodies. The 'Dados.gov' project is a key initiative of the Portuguese open government agenda. And open portal "http://www.dados.gov.pt/" makes available to citizens an extensive range of information from very diverse areas. And it is published and aggregated information produced by the public authorities so that it can be read and reused by any citizen. The beta version was made available to the public in November 2011 as following international practices in open government data.

4.9 Cyber Security [CYB]

Portugal finds itself in an initial phase of defining a National Information Security Policy. Currently no NIS-oriented risk management process is in place at a national level. The PGETIC defined a common strategy for security in cyberspace and created the Nation Cybersecurity Center (CNCS) in October 2014 that identifies and coordinates the response to threads, provides support training and information on security which will have to contribute to Portugal use cyberspace a more free, reliable and safe by promoting continuous improvement of national cybersecurity and international cooperation.

In addition, The National Cyberspace Security Strategy published by Resolution of the Council of Ministers no. 36/2015 in June 2015, is based on the commitment to reinforce the security of networks and information, in order to ensure the protection and defense of critical infrastructure and vital information services, and promote a free use, safe and efficient cyberspace by all citizens, businesses and public and private entities.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Portugal has the implementation of the ICT strategy (PGETIC) that was defined a strategy for cloud adoption on the public sector and created the ICT shared services network. IoT and Big Data where addressed informally until now but will have a place in the ICT strategy renewal 2016-2020.

5 Some Highlights

Among ten indicators in the current ranking, the Open Government Data, Online Service, Management Optimization and e-Participate are the best among other indicators in e-Government Portugal. This achievement signifies the importance of the National Administrative Modernization Strategy that it is based on the digital by default principle in order to reduce the bureaucratic burden on citizens and economic operators, by introducing transparency and efficiency and reducing the constraints generated by the slowness of different procedural acts. As example, one of Online Service, the Public Contracts Code (PCC) provides for the complete dematerialization of public procurement procedures. Therefore, contracting entities are required to use exclusively electronic means, from the moment they decide to procure a service or works until the conclusion of the contract. The BASE Portal was established for that purpose and is now managed by the Institute of Construction and Real Estate - Instituto dos Mercados Públicos, do Imobiliário e da Construção, I.P. (IMPIC). It is the licensing entity, monitoring and inspection of electronic procurement platforms. In addition, Portugal government also implemented Entidade de Serviços Partilhados da Administração Pública (eSPap): it is the managing body for the national public purchasing system. The "https://www.espap.pt/" publishes electronically all notices and contract announcements, and lists all certified eTendering platforms.

The weak point in Portugal is about GCIO and the use of emerging ICT. The Portuguese public administration at the national and local levels does not appoint clear CIOs or equally influential positions within its legal framework. And the concept of using Cloud Computing and Big Data in government, and Internet of Things (IoT) are still on the concept in strategy.
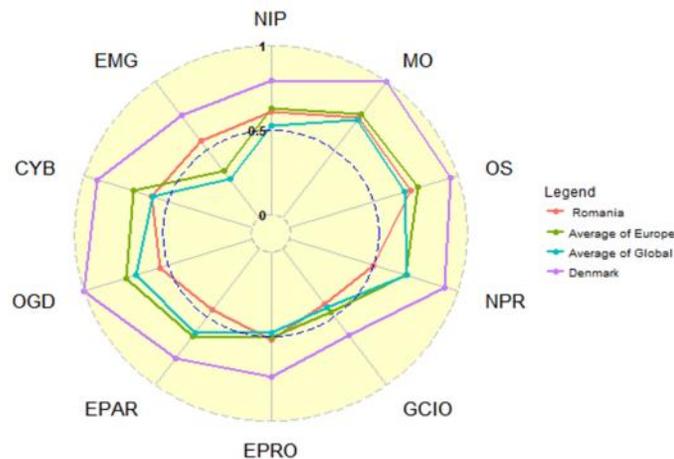
Romania

1 General Information

Area: 238,391 sq km
Population: 21,666,350
Government Type: Semi-presidential republic
GDP: $22,100
Score (Rank):
Historical Ranking (2006-20016)
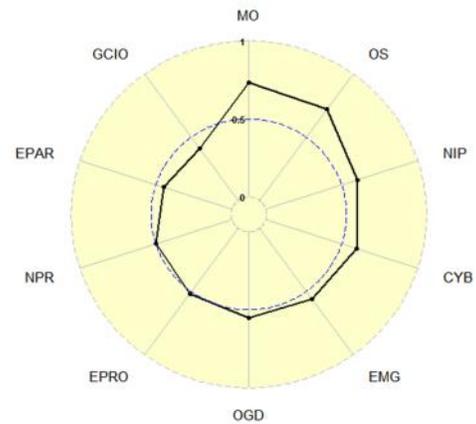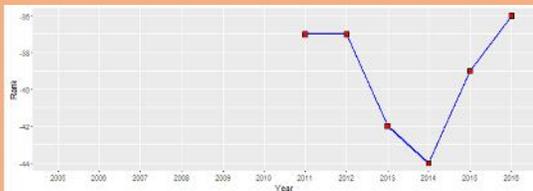
2 Positioning in a global organization and a region

Europe Countries

3 E-Government Development

The e-Government development in Romania is slower than other Europe countries. The application of ICT in local government and center government are only been concerned since 2008 by

introducing the Agency for Information Society Services (ASSI) published its strategy which provided an overview of e-Government strategy in Romania.

In 2009, Romanian government issued the policy paper called "eRomania". The objective of this paper was to lead the entire public sector to the information and knowledge-based society. The e-Government system is to be the main tool for building a national integrated system for online public services. The aims of this paper was to create the large scale use of IT in business environment, promote economic, high quality of services.

In 2010, Romanian government adopted a key strategic for promoting e-Government strategy called "National Program for Supercomputing" with aiming is to modernize the services and the information systems of the public administration. The newest program for e-Government development is National Strategy on Digital Agenda for 2014-2020. The objective is to aims to contribute to the economic growth and increase competitiveness in Romania.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Romania's Internet and broadband market is experiencing strong growth, despite the country's low fixed-line penetration rate. Broadband services are widely available from the cable operators as well as the fixed-line incumbent. As of December 2014, Romania has more than 11 million Internet users with the penetration is about 56.3%. Romania has a good ICT platform. eIdentification/eAuthentication is Integrated National System Introduction and Update of Information Relating to Personal. Furthermore, to prepare for transactional processes, Romania developed the "Virtual Payment Office". The aim of this project is to facilitate citizens' interaction with the Public Administration by allowing for electronic payment records.

4.2 Management Optimization [MO]

The National Strategy on Digital Agenda focuses on four fields of action: (i) e-Governmente-Government, Interoperability, Cyber Security, Cloud Computing, Open Data, Big Data and Social Media; (ii) ICT in Education, Health, Culture and eInclusion; (iii) eCommerce, Research & Development and Innovation in ICT, and (iv) Broadband and Digital Services Infrastructure.

In 2014, Romanian government adopted a program based on the Digital Agenda for Europe. They defined 4 major fields of action that will be pursued as Romania's vision of the ambitious program that will drive the economic growth and increased competitiveness, for covering the underpinning principle stated above in pursuit of sustainable long-term economic growth: (1) e-Government, Interoperability, Cyber Security, Cloud Computing, Open Data, Big Data and Social Media; (2) ICT in Education, Health, Culture and e-Inclusion; (3) e-Commerce, Research & Development and Innovation in ICT, and (4) Broadband and Digital Services Infrastructure.

4.3 Online Service [OS]

Romania has a central e-Procurement platform ('eLicitatie.ro) that is under the responsibility of the Agency for Digital Agenda. All Romanian contracting authorities are required to publish their notices

within the framework of public procurement procedures, and all businesses aiming at supplying products or services to a public authority have to access the platform.

E-Tax system is used in center government and covered around 50% of Romanian municipalities. The health care service has portal at URL: www.ms.ro but this portal has information only, there are no online services. Customs online services are available at https://www.customs.ro/ro/e-customs.aspx it allows declarations to be filled in online for all types of businesses and agents that perform activities in this sector. This service ensures authentication of users through digital certificates.

4.4 National Portal [NPR]

www.e-guvernare.ro is a one-stop service, it providing a single point to provide services at national and local services and incorporates a transactional platform. Most of e-Services are at level 2. Individuals can download the form online then doing processes for application. The national portal is not so good in design. It is covered by all texts and it is really monotonic. It does not appeal to users and does not transmit information that the government wants to introduce, and deliver to citizens.

4.5 Government CIO [GCIO]

The role of CIO is not played by an individual but rather is held by the Ministry of Communications and Information Society, through the National Center for Management of Information Society (CNMSI). There is a relatively new, private organization called The CIO Council, whose members are management staff of large national and international companies. operating in Romania.

4.6 E-Government Promotion [EPRO]

In Romania, the Ministry of Communication and Information society (MCIS) has executive control over e-Government. This dedicated ministry is the main policy and strategy provider for the domain. The Ministry for Internal Affairs (MAI) has political responsibility for e-Government lies within the MAI which contributes to e-Government policy and drafts strategic documents on Public Administration. The MCIS also is responsible for the implementation of policies and strategies, together with the subordinate agencies and departments in the e-Government domain. They establish the activities and promotion for e-Government development. Even Romania is divided into center and local government, but almost e-Government promotions are implemented in center level.

4.7 E-Participation [EPAR]

The national portal www.e-guvernare.ro of Romania has improved over time. The portal is a one stop service site for citizens. In terms of e-Inclusion, Even though an e-Inclusion dedicated strategy was never in place, it can be found in some strategies and political documents related to Information Society such as e-Romania and the National Government Plan.

4.8 Open Government Data [OGD]

The Romanian government introduced a beta version of data national portal in 2013. This is unique national platform open data loaded by public institutions in Romania. Till date, the government has 439 datasets with a multiple format and several fields.

4.9 Cyber Security [CYB]

In Romania, CERT-RO is the national contact point for cyber security and responsible for elaborating and distributing public politics for prevention and counteracting the incidents that occur within cyber infrastructures. CERT-RO processes two types of cyber-security alerts (1) Alerts collected and sent through automatic systems, and (2) The manually processed alerts.

National Center for IT incidents has been adopted in Romania and currently authorities are making efforts to operationalize this unit. The purpose Romania cyber security strategy is to define and maintain an environment virtually certain, with a high degree of resilience and confidence, based cyber infrastructure national, which is an important support for national security and good government, to maximize the benefits to citizens, businesses and society Romanian. Cyber Security Strategy of Romania presents the objectives, principles and major Action awareness, prevention and countering threats, vulnerabilities and cyber security risks to Romania and to promote the interests, values and national objectives in cyberspace.

4.10 The use of Emerging ICT [EMG]

In Romania, the Local Communities Electronic Networks (LCENs) connect local communities (schools, public offices and libraries) to the Internet. Public Access Points have been set up in each area covered by the networks. The objectives are to reduce the rural-urban digital divide, stimulate the use of ICTs in schools, and facilitate the interaction between citizens and administration.
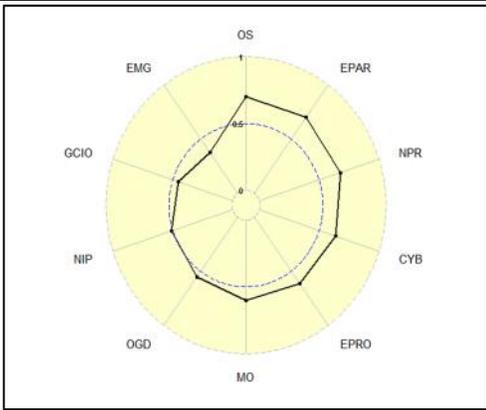
5 Some Highlights

Romania is added for evaluation since 2007 for the first time in Waseda e-Government ranking. Through 9 years of evaluation, we show that the development of e-Government in Romania is not stable in general strategy. The e-Government system is to be the main tool for building a national integrated system (NES) which would be designed to be the unitary interface that connects all public administration and the citizens as well as the business sector. The role of CIO is not played by an individual but rather is held by the Ministry of Communications and Information Society, through the National Center for Management of Information Society. CIO council organized the first National Conference of IT managers in Romania about the future of IT. Cyber and e-commerce legislation have been enacted. Regarding the e-Services, through the Unique Form System there are six services online available at present, some of them are online with two-way interaction and security.
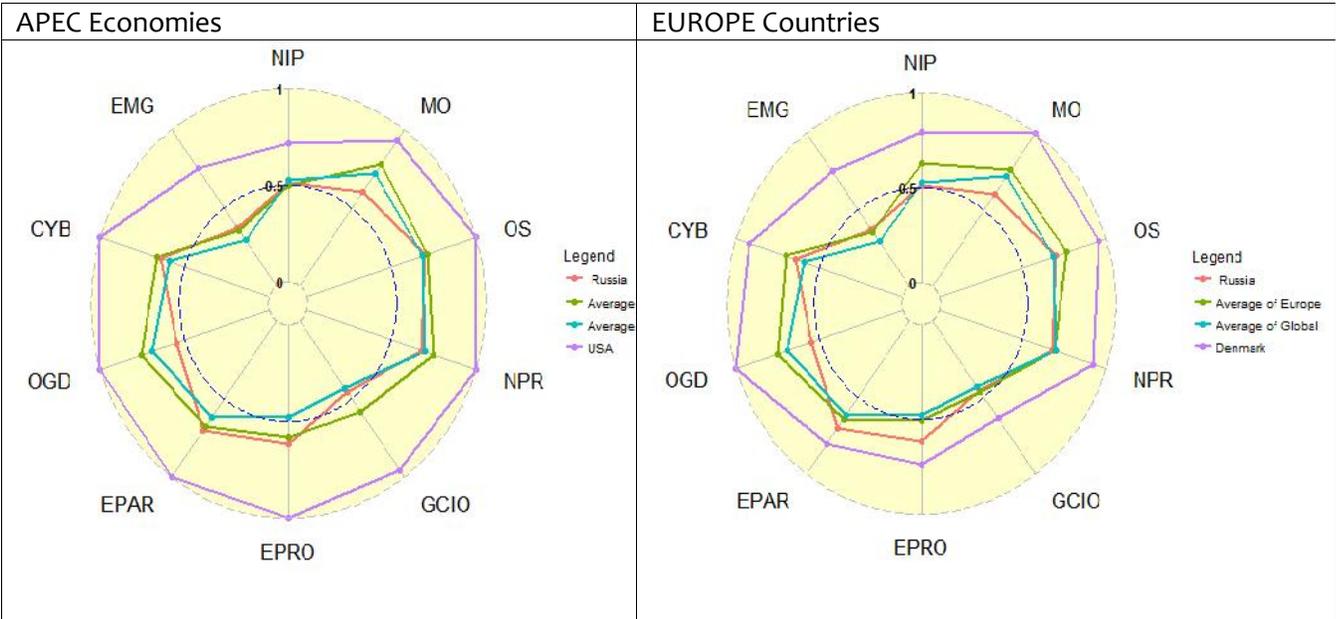
Since the beginning of the decade, Romania has passed fundamental ICT-related laws, planned and implemented the first steps towards an Informational Society but there is still much that needs improvement. Romania has the advantage of good ICT infrastructure in place and of the great availability of IT professionals. The e-Romania project has yet to be implemented. Local e-Governmente-Government initiatives are underway in several regions but there are big differences among regions. A government oversight board would be necessary. E-participation also needs to be enhanced.

Russia

1 General Information

Area: 17,098,242km ^{2}

Population: 142,423,773

Government Type: federation

GDP: $23,700

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

APEC Economies	EUROPE Countries

Russia have exceeded on indicators of E-Participation and E-Government Promotion over than not only the average of APEC economies, but also than average scores of Europe countries. But performance on indicator on GCIO was below the average at both groups.

3 E-Government Development

The latest ICT strategy called "The state programme Information Society 2011-2020" was published by the Ministry of Communications and Mass Media and the Ministry of Economic Development in Russia. E-Government and "effective stage governance" has been mentioned as one of the six

objectives, including data management system, local e-Governmente-Government (e-regions and e-municipalities), and so on. Other related goals contain bridging the digital gap or improving e-Service quality. In addition, the Ministry of Telecom and Mass Communications has developed the systematic approach of e-Governmente-Government in 2016 to foster more e-participation content, in which user orientation has been established. To lead nation's ICT development, the Ministry of Telecom and Mass Communications has played roles of policy-making and implementation of national policy and regulations, even there is no official GCIO position at federal level. Some regional administrations own GCIO office but it is not a mandatory, and functions of GCIO have not been formally ascertained by government.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

According to ITU, about 70.5% of people in Russia have used Internet in their daily life. And about 17.5% are fixed-broadband users and the wireless-broadband users are 65.9%.

4.1 Management Optimization [MO]

The latest state program called "Information Society(2011-2020)" to stress the IT development in Russia. In the document it contains the plan for e-Governmente-Government. Also, the Ministry of Telecom and Mass Communication of the Russia Federation has presented document to guide e-Governmente-Government path.

At present government efforts are focused on modernization of integrated enterprise network, installation of interagency electronic request system and integration of regional e-Governmente-Government portals to the Unified System of Identification and Authentication. Currently 62 out of 85 provinces in Russia are connected to Unified System of Identification and Authentication for accessing regional and municipal public services. That system is expected to be used by all 85 provinces for identification and authentication purposes. The government puts forward the objective of making the system accessible for 35% of population by the end of 2014 and for 70% by 2018.

4.2 Online Service [OS]

The e-Services in Russia are currently available through integrated e-Service portal and accessible via password protected personal accounts requiring two-stage identity confirmation. Personal account is accessible via e-signature and universal ID card. Maturity of provided services is not uniform among the regions. Payment services such as paying utilities fees, driver civil penalties are made available through personal account on the portal in some regions. E-Tax service is not fully transactional. To use e-tax service a user is required to install special software and fill a tax form using that software. The form is then to be sent to tax authorities through the portal. Upon the confirmation of the receipt a taxpayer is required to submit a paper-based declaration to the local tax authority.

4.3   National Portal [NPR]

National Portal of Singapore (http://www.gov.sg/) contains proper information for local citizens and foreigners. The portal has provided latest national news, useful guidelines for every aspect in Singapore life (divided by topics such as Finance, Education, Immigration, Taxes, Health, etc.) Besides, the portal has introduction of country information, visions for nation, to present the country to users closely and deeply. There are also contacts information of government agencies and their announcement individually. Though online translation supports users to search government terms into Chinese, Malay, and Tamil, it would be better if the portal equips multiple language versions of all the information.

4.4   Government CIO [GCIO]

Government Chief Information Office Wing has been set up at IDA (Infocomm Development Authority of Singapore) which serves as the government CIO for Singapore. There are also clearly appointments about CIOs at every government agency, responsible for specific objectives on infocomm technologies, infrastructure and services. Government CIO issues are valued at Singapore, but there are still needs to establish assorted educational programs related to GCIO.

4.5   E-Government Promotion [EPRO]

High-tech and informational society is one of the vital national strategies in Singapore, therefore government never has stopped the evolution of e-Governmente-Government. Not only the continuous plans but also relevant legal framework has renewal in the past years. Academic support including seminars and research centers on e-Government and ICT utilization are active in Singapore. It ranked second in this indicator among evaluated countries.

4.6   E-Participation [EPAR]

Citizens in Singapore have adapted to the culture of connecting government within online service systems, and participate in the public affairs through different channels which are provided by government. Reach (www.reach.gov.sg) is a platform built for citizens' voice spread and heard on public policies, public affairs within various forms such as online discussion, events and public consultation. Deliberative democracy has been reflected through ICT utilization in public sectors.

4.7   Open Government Data [OGD]

Singapore has launched Open Data Portal (https://data.gov.sg/) in 2011 as the portal site to provide publicly-available datasets from 70 public agencies. There are some principles about data sharing presented such as: data shall be made easily accessible; data shall be released in a timely manner, etc. However, there has the necessity to improve legal mechanism for open government initiative in Singapore in the future.

4.8   Cyber Security [CYB]

Singapore has released different acts and regulations on Cyber Security issues, such as Computer Misuse Bill, The Electronic Transactions Act and Personal Data Protection Act (PDPA), and the later Computer Misuse and Cybersecurity Act (CMCA). A government body called Personal Data Protection Commission has been established to administer and enforce the PDPA. Recently, an organization called Cyber Security Agency of Singapore (CSA) has been found to oversee the

national cyber security strategy and outreach. Also, New Cyber Security Act will be published in the coming year to be expected.

4.9 The use of Emerging ICT [EMG]

As leading country in e-Governmente-Government area, Singapore would not pass up the chance to introduce and apply emerging technologies in public sectors. Public projects within Cloud-computing, big data and IOT utilization are ongoing or planned into sophisticated phases. Organizational preparedness such as National Cloud Computing – Advisory Council (NCCAC) is paying attention to the adoption of technologies, industrial standard construction and fostering collaboration between different sectors. Great potential in the development of emerging technologies into e-Governmente-Government area could be anticipated, but government' guidance should play the crucial role in leading industry and society.

5 Some Highlights

As leading nation of e-Governmente-Government in Asia, Singapore continues to maintain the momentum of evolvement. The performance on indicators of Management Optimization, e-Governmente-Government promotion and cyber security are showing its strong points and advancement this year. Especially on the efforts for cyber security, Singapore equips the law and regulation framework to assure every safety measure and security upgrade can be enforced with legal basis. In respect to policy, National Cyber Security Masterplan 2018, as the latest strategy, guides government to enhance nation's security environment and create a robust and trusted society for public, private and individuals. Continuous masterplans in each crucial segment are one of the keys to keep Singapore proactive and possessing execution capacity on e-Governmente-Government development.

 To future direction, Singapore still has potential on the growth of the use of emerging technologies. This new indicator has been introduced to Waseda e-Governmente-Government ranking this year. Due to the fact that many countries are still at the start-up phase, direction for expanding the new technologies into public service sector needs more endeavor to be clarified. Singapore could seize the opportunity to formulate policies and standards, not only guide domestic innovation, but also delight international co-development.
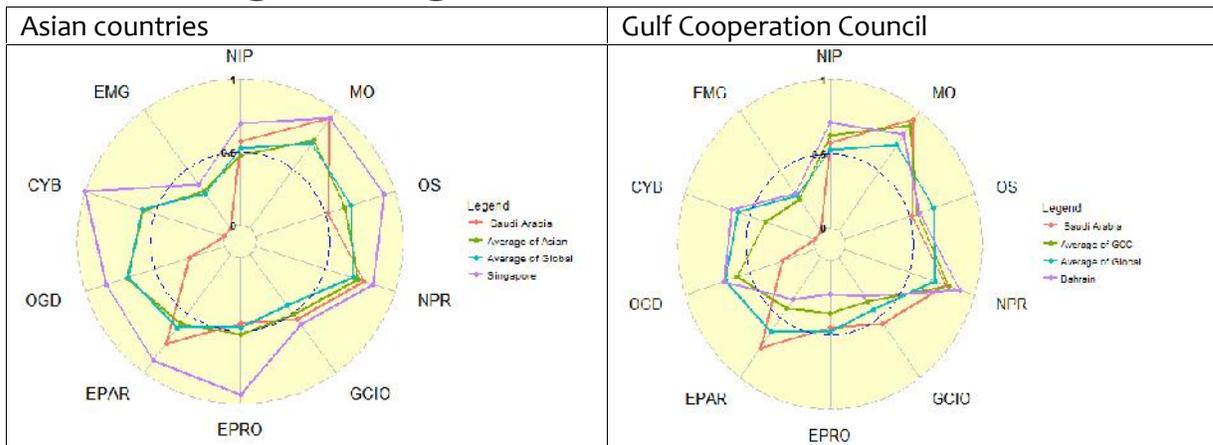
Saudi Arabia

1 General Information

Area: 2,149,690 km^2
Population: 27,752,316
Government Type: Absolute Monarchy
GDP: $54,600
Historical Ranking (2006-2016):

2 Positioning in a region

Asian countries	Gulf Cooperation Council
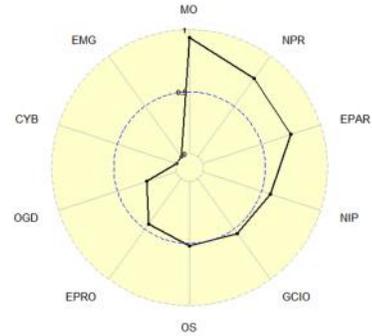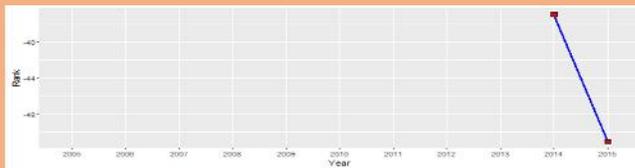
3 E-Government Development

The Saudi Arabian Government combined with IDC announced the organization of Saudi Arabia CIO Summit for the first time in Saudi Arabia in 2011. Saudi Arabia CIO Summit aims to shed light on the challenges facing the Information technology sector in the Kingdom and discuss problems and strategies of government and private organizations, in addition to sharing experiences between decision makers and elite officials in the kingdom's IT sector.

Based on the second action plan, it provides for using IT & communication tools to support citizen participation in government processes including administration, service delivery and decision making. The United Nations' E-Participation Index ranked Saudi Arabia 51st in 2014. This is a large drop from 2012, when they placed 22nd, but it a significant improvement over 2010, in which they placed 102nd.

These unusually volatile numbers seem to be context-dependent, and suggest that Saudi Arabia has the ability to be a leader in e-Governmente-Government participation, if not the political will.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

The e-Government in Saudi Arabia was established as per Royal Decree No. 7/B/33181 dated September 7, 2003. The e-Government was created by the Ministry of Communications and Information Technology. In 2005, the Ministry of Communications and Information Technology created the e-Government Program Yesser (www.yesser.gov.sa), with the Ministry of Finance and the Communications and Information Technology Commission.

4.2 Management Optimization [MO]

E-Government strategy in Saudi Arabia has been divided into two ambitious plans. The E-Government Program has been assigned the task of developing and implementing these plans and strategies in cooperation with government agencies. The First Action Plan, from 2006 to 2010, has been completed. Now, Saudi Organizations are in the process of launching the Second Action Plan, from 2012 to 2016.

4.3 Online Service [OS]

The national portal is one-stop-service that provides e-Service to citizens, business and also government agencies. All e-Service focus on user or citizen centricity, in total, Saudi Arabia government suggested 150 government services e-enabled and implemented through the Internet. Beside e-Services, government also introduced mobile services to all citizens.

4.4 National Portal [NPR]

The Saudi e-Governmente-Government Portal "Saudi" www.saudi.gov.sa is the central Saudi Arabian government portal through which not only citizens, residents, businesses and visitors but also other government organizations and businesses can access e-Services online. This approach has been chosen as the best way to enable government services in an efficient manner.

4.5 Government CIO [GCIO]

As the role of a CIO is becoming less technology focused and more strategy oriented, CIOs in Saudi Arabia are becoming more engaged in setting strategy, enabling enterprise change, and solving business problems, as well as IT problems. The Director General of the e-Government Program (Yesser) has a role very similar to that of a national government CIO. This position is currently held by Dr. Abdul Rahman bin Sulaiman Al-Eraini.

4.6 E-Government Promotion [EPRO]

The Government of Saudi Arabia has attached high interest to the e-Government Concept and the transformation process that leads to implementation of such a concept. It strongly believes in the huge benefits such concept of e-Government entails for the National Economy. Accordingly, the Supreme Royal Decree number 7/B/33181 included a directive to the Ministry of Communications and Information Technology to formulate a plan for offering government services and transactions

electronically. Transformation to an Information Society cannot be achieved without comprehensive collaboration and concerted efforts to realize the specified objectives. Therefore, the Ministry of Communications and Information Technology (MCIT) established the e-Government Program "Yesser" in conjunction with the Ministry of Finance and the Communication and Information Technology Commission (CITC).

4.7 E-Participation [EPAR]

Based on the second action plan, it provides for using IT & communication tools to support citizen participation in government processes including administration, service delivery and decision making. The United Nations' E-Participation Index ranked Saudi Arabia 51st in 2014. This is a large drop from 2012, when they placed 22nd, but it a significant improvement over 2010, in which they placed 102nd. These unusually volatile numbers seem to be context-dependent, and suggest that Saudi Arabia has the ability to be a leader in e-Governmente-Government participation, if not the political will.

4.8 Open Government Data [OGD]

Saudi Arabia has open government/data in some fields, such as social insurance, trade, education and training, social services, population and health care. Users can download or share all the data that government provided in the website.

4.9 The use of Emerging ICT [EMG]

The Council of Ministers, headed by the King Abdullah bin Abdulaziz, approved the Anti-Cyber Crime Law. The law provides for a jail sentence no more than a year and a fine no more than SR500,000, or any of the two punishments, for any person committing the crimes described in the law. The above law strikes an important balance between the right of the society to benefit from new technology and the right of the consumer for protection of his/her privacy. It also paves the way for establishment of IT legal system that safeguards the rights resulting from the legal use of computers and information networks. Its stated objective is to protect public interest, morals, public ethics, and the national economy.
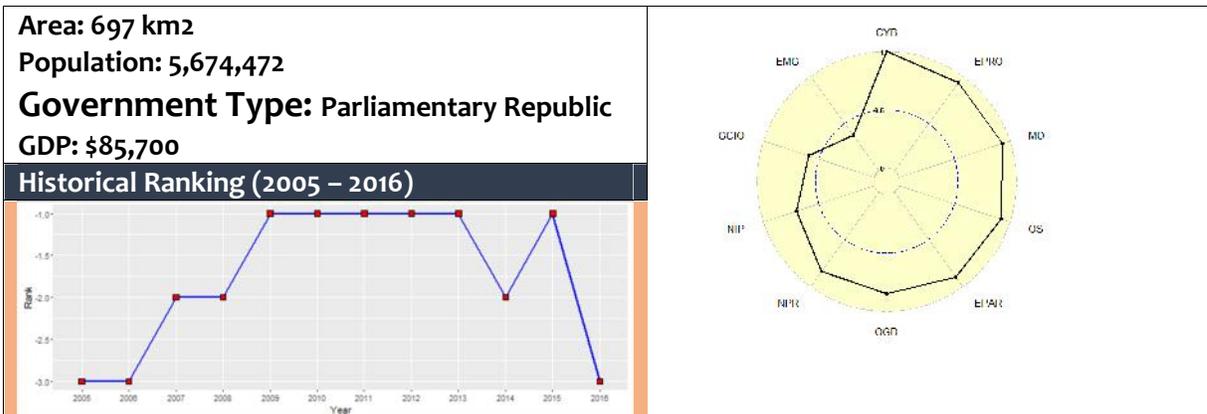
5 Some Highlights

Saudi Arabian e-Government development is in the second phase of its action plan, and there is still great opportunity for further improvement to increase the speed of implementation, and to build on the momentum that has been established. The major strategic benefits from the e-Governmente-Government program to the Kingdom of Saudi Arabia remain the same as those identified in the first action plan:

- Better services for citizens and businesses

- Increased efficiency and effectiveness
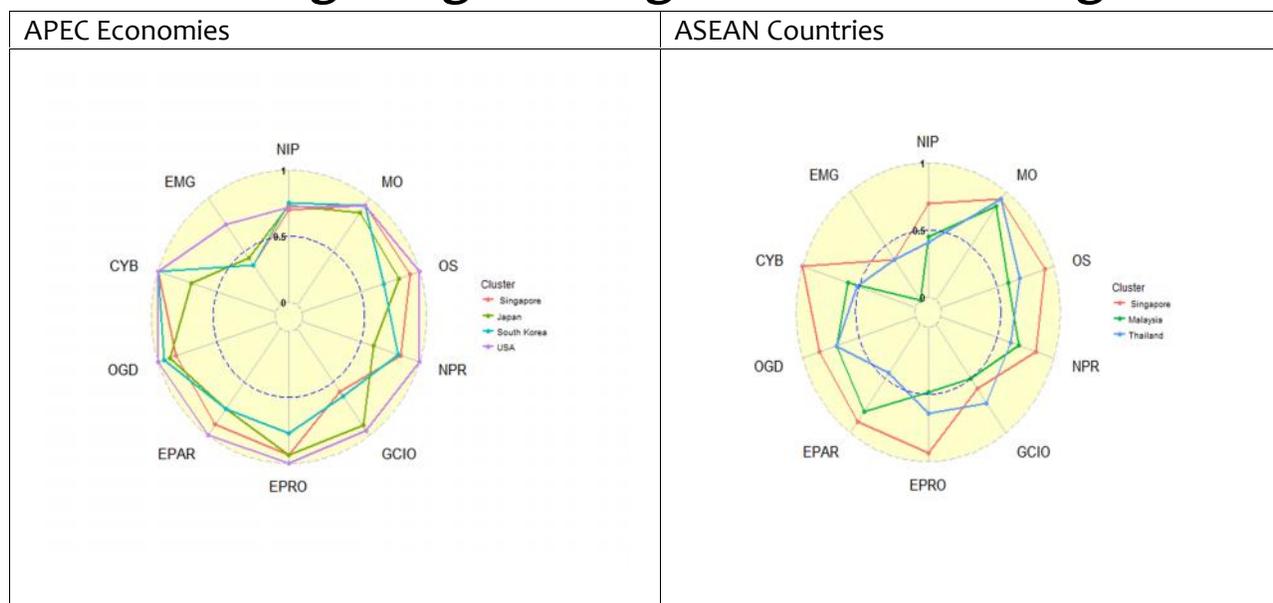
- Support the move to an information society

In order to successfully implement the Second National e-Governmente-Government Action Plan, this national Vision must be used by each government agency to develop an individual e-Governmente-Government Vision and strategic action plan for individual agencies and sectors.

Singapore

1   General Information

Area: 697 km2
Population: 5,674,472
Government Type: Parliamentary Republic
GDP: $85,700

Historical Ranking (2005 – 2016)

2   Positioning in a global organization and a region

APEC Economies	ASEAN Countries

Among OECD Countries, all indicators except the use of Emerging Technologies for government are above the average score of OECD members. The Management Optimization (MO) indicator of Estonia get the better score than that of United States, the best country in the global ranking and also in OECD.

Amongst European countries, Estonia is placed below Denmark. However, the e-Participation and Government CIO of Estonia are better than those of Denmark, the best country in Europe region.

3   E-Government Development

Since 1980 it had the first CSCP (Civil Service Computerization Programme), e-Governmente-Government plans have advanced to the 4th version of eGov masterplans called eGov 2015(2011-2015) in Singapore. According to its explanation, "the eGov2015 Masterplan (2011-2015) aims to be a Collaborative Government in which the governments must take on the roles of a facilitator and enabler-to collaborate with the public, private and people sectors in creating new solutions, new businesses, and new wealth." The strategy is composed of 3 main dimensions to found collaborative government: Co-creating for greater value, connecting for active participation and catalyzing whole-of-Government transformation. Government agencies including the ministry of finance, ministry of information communications and the arts and the infocomm development authority of Singapore (IDA) are cooperating to implement e-Governmente-Government plans. Among them IDA plays the role to steer e-Governmente-Government projects to which Government chief information office wing pertains.

4   By Indicators

4.1   Network Infrastructure Preparedness [NIP]

Approximately 82% of people in Singapore have used Internet in their daily life. According to ITU's report, about 27.8% are fixed-broadband users and the wireless-broadband users are 156.1%. Internet penetration in Singapore has reached a high level compared to other countries.

4.2   Management Optimization [MO]

Singapore is one of the earliest countries who started computerization and telecommunication infrastructure construction. With the development of information society, government in Singapore has launched continuous strategies in different aspects of e-Governmente-Government. Also, Singapore has made effort to integrate the internal government network architecture. For instance, the latest cube program is designed as the new intranet platform for public agencies to communicate, connect and collaborate with each other.

4.3   Online Service [OS]

The score for Online Service of Singapore is also comparatively high, ranked 4th among the evaluated countries.   Five online services have been examined and investigated, through the Level of Complexity, Level of Security and Level of Convenience. E-Procurement and One Stop Service have gained the better scores than e-Customs and e-Tax, and e-Health. Most of the services in Singapore have come to transactional stage, allowing citizens having two-way transaction with public agencies. However, the third party application result (Google PageSpeed) has been introduced to Waseda e-Government Ranking in 2016 to measure the portals' speed in consideration of convenience. There are still some perfection could be achieved with the online portals in Singapore.

4.4   National Portal [NPR]

National Portal of Singapore (http://www.gov.sg/) contains proper information for local citizens and foreigners. The portal has provided latest national news, useful guidelines for every aspect in Singapore life (divided by topics such as Finance, Education, Immigration, Taxes, Health, etc.)

Besides, the portal has introduction of country information, visions for nation, to present the country to users closely and deeply. There are also contacts information of government agencies and their announcement individually. Though online translation supports users to search government terms into Chinese, Malay, and Tamil, it would be better if the portal equips multiple language versions of all the information.

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High-tech and informational society is one of the vital national strategies in Singapore, therefore government never has stopped the evolution of e-Governmente-Government. Not only the continuous plans but also relevant legal framework has renewal in the past years. Academic support including seminars and research centers on e-Government and ICT utilization are active in Singapore. It ranked second in this indicator among evaluated countries.

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As leading country in e-Governmente-Government area, Singapore would not pass up the chance to introduce and apply emerging technologies in public sectors. Public projects within Cloud-computing, big data and IOT utilization are ongoing or planned into sophisticated phases. Organizational preparedness such as National Cloud Computing – Advisory Council (NCCAC) is paying attention to the adoption of technologies, industrial standard construction and fostering collaboration between different sectors. Great potential in the development of emerging technologies into e-Governmente-Government area could be anticipated, but government' guidance should play the crucial role in leading industry and society.
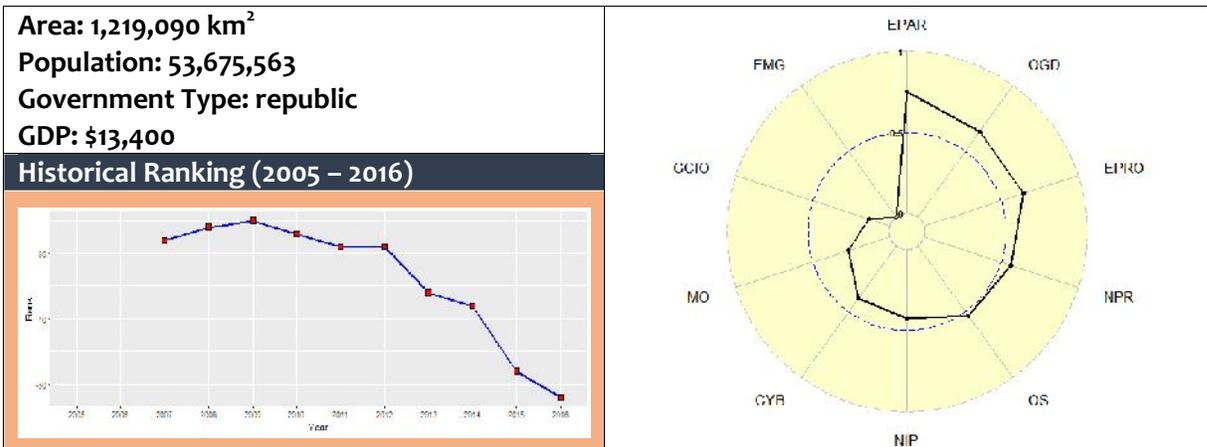
5 Some Highlights

As leading nation of e-Governmente-Government in Asia, Singapore continues to maintain the momentum of evolvement. The performance on indicators of Management Optimization, e-Governmente-Government promotion and cyber security are showing its strong points and advancement this year. Especially on the efforts for cyber security, Singapore equips the law and regulation framework to assure every safety measure and security upgrade can be enforced with legal basis. In respect to policy, National Cyber Security Masterplan 2018, as the latest strategy, guides government to enhance nation's security environment and create a robust and trusted society for public, private and individuals. Continuous masterplans in each crucial segment are one of the keys to keep Singapore proactive and possessing execution capacity on e-Governmente-Government development.
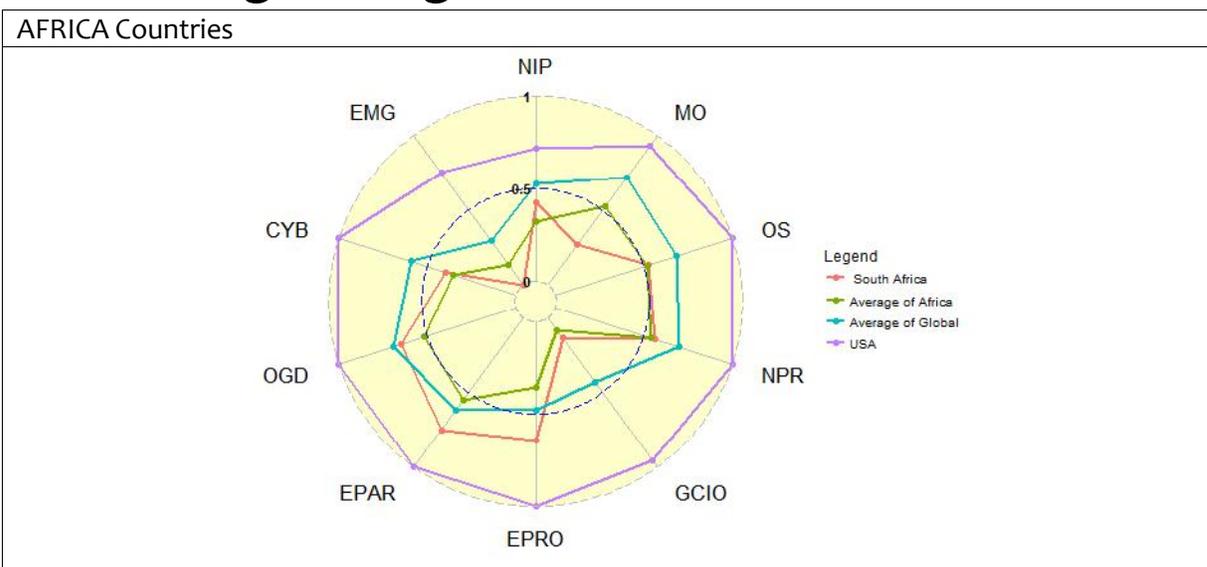
To future direction, Singapore still has potential on the growth of the use of emerging technologies. This new indicator has been introduced to Waseda e-Governmente-Government ranking this year. Due to the fact that many countries are still at the start-up phase, direction for expanding the new technologies into public service sector needs more endeavor to be clarified. Singapore could seize the opportunity to formulate policies and standards, not only guide domestic innovation, but also delight international co-development.

South Africa

1 General Information

Area: 1,219,090 km²
Population: 53,675,563
Government Type: republic
GDP: $13,400

Historical Ranking (2005 – 2016)

2 Positioning in a region

AFRICA Countries

Among Africa countries, South Africa has surpassed the average of the region in most of indicators, except management optimization and e-merging technology. However when comparing with the world's average, only e-participation and e-promotion show the better scores.

3 E-Government Development

E-Government in South Africa are considered as a high priority area for improving the internal operations and management. However, e-Government level in South Africa is still at the infancy phase. Most objectives are intended to help the Interior better executing administrative and supporting functions that exist across the government bodies. The e-Governmente-Government

strategy is drafted by the Center for Public Service Innovation (CPSI) in associate with the Department of Public Service and Administration and the State Information Technology Agency.

4 Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 50% South African's population were Internet users in 2014, according to the latest report on Measuring the Information Society from International Telecommunication Union (ITU). Among them, wired broadband subscribers accounted for around 32% while more than 46.7% of total population have a wireless broadband connection.

4.2 Management Optimization [MO]

South Africa's National Development Plan and the National Integrated ICT Policy Green Paper published in 2013 are expected to be the major success driver of the development and uptake of e-Governmente-Government services.

There is a so-called the Minimum interoperability standards (MIOS) for IS published by the South African government SITA agency. This standard defines the minimum principles that an IT system in government must meet. The target of this policy is to maintain the interoperability across government systems.

4.3 Online Service [OS]

The score for Online Service comprises of five sub-dimensions: e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience.

In general, only Tax and Customs services are delivered digitally. The South African revenue service (SARS) has put a system in place since 2003 for taxpayers to submit their tax returns. Until now the system reached the transactional level of online service, enabling individuals and businesses to submit and claim their tax totally online.

Regarding e-procurement, the etenders.gov.za is an initiative instituted by The Office of the Chief Procurement Officer to mandate all public sector organizations in South Africa to publish procurement information. Currently, the functionalities of the portal are only publishing information regarding tender and award notices and providing search capability on tender opportunities.

South Africa has a portal providing links to different types of services, however, citizens still have to go to specific department for service applying. Work is under progress to consolidate all government services in one single place. In health care, a national e-health strategy was published[44]

To measure the level of convenience, the third party application Google PageSpeed™ Insight[45] has showed that all services have a good access speed.

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[44] https://www.health-e.org.za/wp-content/uploads/2014/08/South-Africa-eHealth-Strategy-2012-2017.pdf

Table 24 List of Online Services

Online Service	URL
e-Procurement	http://www.etenders.gov.za
e-Tax	http://www.sars.gov.za/
e-Customs	http://www.sars.gov.za/
e-Health	http://www.minavardkontakter.se/
One-Stop Service	http://www.gov.za/services

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. gov.za is the government portal of South Africa. It presents a wide range of information resources about country demographic, national programs, government structure, government agencies, legal documents and daily news regarding to government's operations. Information are delivered in English only

In technical aspect, the result of Google PageSpeed™ Insight showed that the website operates well in PC and shows some minor layout issues on mobile devices. The analysis also indicated several technical problems which may slow down the portal's loading speed. Social network features are supported.

4.5 Government CIO [GCIO]

The role of the CIO in South Africa was endorsed by the Government IT Officer's (GITO) Council in 2002. GITO was created to serve as an IT coordinator, to consolidate the IT activities of government agencies. The council functions as a platform in which both the government and citizens ensure that the government itself is aware of the needs of citizens.

4.6 E-Government Promotion [EPRO]

The Department of Public Service and Administration (DPSA) is responsible for the development and coordination on e-Governmente-Government strategies. For implementing and monitoring e-Governmente-Government projects, the South African government established statutory agencies such as the State Information Technology Agency (SITA) and Government Information Technology Officers Council (GITOC).

Public private partnerships have been promoted in South Africa recently in order to boost ICT development in the country. Most of projects are focusing on enhancing ICT infrastructure. Government's expenditure on ICT is estimated to reach $707.6 million in 2019, after reaching a total of $615.9 million in 2014, according to latest research by Frost & Sullivan[46].

The South African Government SA is aiming to provide broadband access to all citizens at reasonable prices. Given this target, the government has invested resources in enhancing infrastructure capacity, with the initializing the first phase of a 3-year project on broadband network. The total funding of

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[45] https://developers.google.com/speed/pagespeed/insights.
[46] http://www.itweb.co.za/index.php?option=com_content&view=article&id=144530:Govt-ICT-spend-to-reach-707m-in-2019&catid=86

R740 million was allocated for this purpose. The first phase was said to cover 7 provinces, with 5803 facilities including schools, health and other government entities. Steering committees have been shaped in all eight district municipalities and they comprise the provincial Departments of Basic Education, Health, Cooperative Governance and Traditional Affairs, Higher Education, Safety, Security and Liaison as well as the South African Local Government Association.

At local government level, most evidences were found related to the Gauteng Government e-Governmente-Government promotion activities. Last year, the Gauteng provincial government has invested over R1 billion in the full penetration of the Gauteng Broadband Network (GBN) for the next four years. This is a part of the Gauteng city region-wide e-Governmente-Government strategy, targeting at enhancing linkages and integration among city region governments and their departments[47].

4.7 E-Government Participation [EPAR]

Provincial and Local Liaison provides development communication and extends government's information infrastructure through partnerships with provincial and local government. It coordinates the establishment of Thusong Service Centre (TSC) programme – the one stop central for government services and information. There were 171 such centers by 2012. This is hoped to bring government services closer to the people.

4.8 Open Government Data [OGD]

The second South African open government partnership action plan[48] was released, reaffirmed South Africa's commitment to good governance and an open society underpinned by values of transparency, accountability and participatory governance.

4.9 Cyber Security [CYB]

May 2016, the international cooperation in the area of information and communications technology (ICT) and cyberspace between South Africa and China was promised to be strengthened.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). There is little evidence found on the use of emerging technologies in public sectors. No evidence has been found on the utilizing high-end technologies in government's operations.

5 Some Highlights

 South Africa has achieved average scores on Online Service, e-Government Promotion and e-Participation, thanks to the recent efforts of the government in the cooperation with private sectors to enhance national ICT capacity. The government considers the public-private partnership to be the

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[47]   http://www.itweb.co.za/index.php?option=com_content&view=article&id=150061:Gauteng-targets-100-broadband-connectivity&catid=147

[48] http://www.opengovpartnership.org/sites/default/files/OPG%20booklet%20final%20single%20pages.pdf

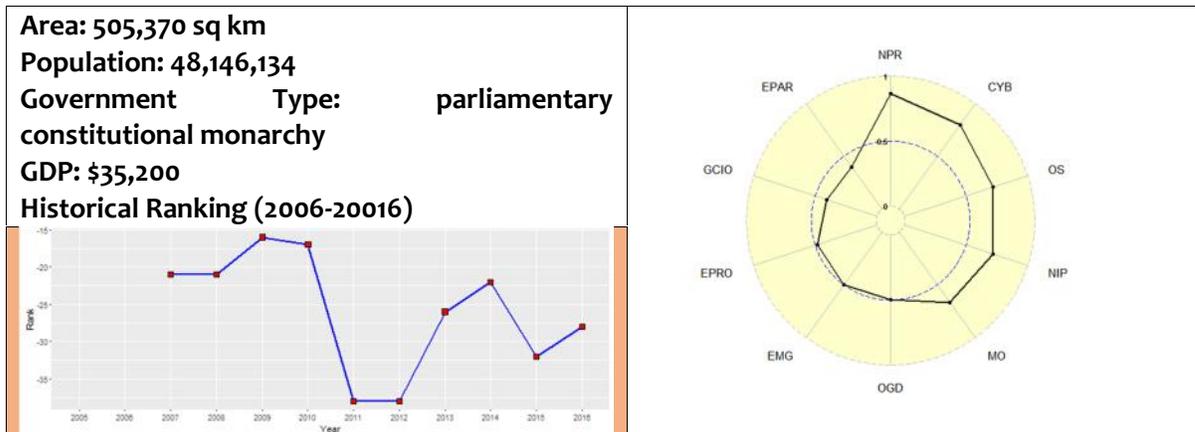central focusing point of the National Development Plan and key to rapid development for economic growth.

However, the country scored low in all the rests. There are several major reasons for this situation, but the most important one is the lack of a long-term e-Governmente-Government strategy. It is recommended that the South African Government should endorse a national strategy which put more focus on ICT and e-Governmente-Government development.

Although GCIO is considered to be one of the key factors in the success of South African e-Government implementation, this indicator's score was not improved recently. It is advised that the Government should pay closely attention to develop government CIO in termss of quality and quantity.
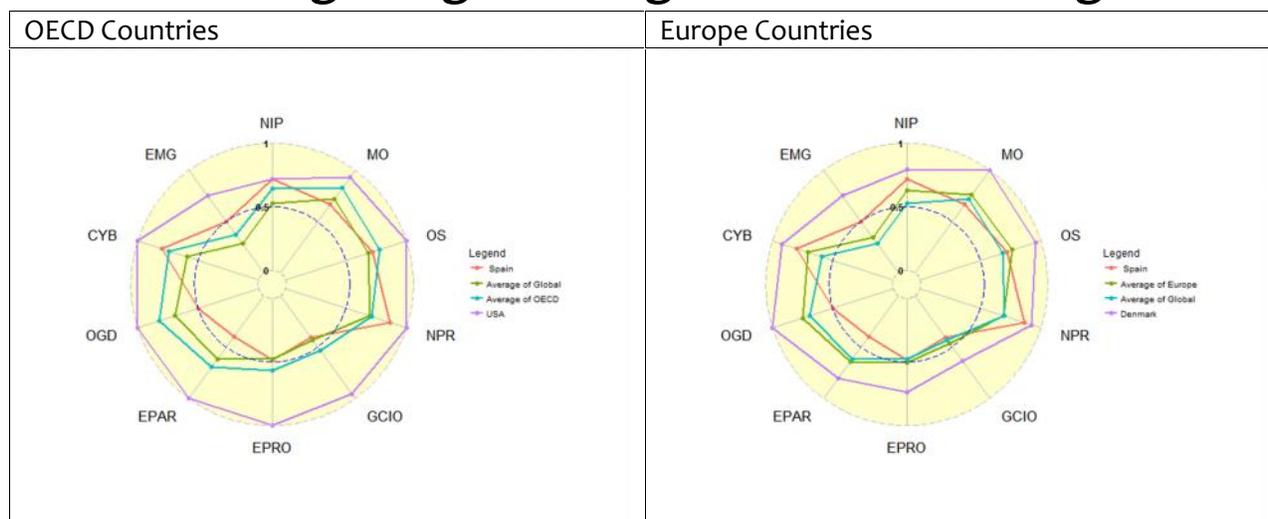
Though some South African government websites show great promises but they are still working with silo style, agency centric perspective, with the lacking of cooperating together and the insufficient focus user friendly and consumer-centric. This calls for a set of standards being published as the guidance for portals and service design.

Spain

1 General Information

Area: 505,370 sq km
Population: 48,146,134
Government Type: parliamentary constitutional monarchy
GDP: $35,200
Historical Ranking (2006-20016)

2 Positioning in a global organization and a region

OECD Countries	Europe Countries

3 E-Government Development

The development of e-Government in Spain was marked by a series of projects on ICT, especially the projects of Public Administration - The "Conecta" Plan. The aim of this strategy is to promote electronic interactions between Public Administrations and citizens (eCertificates); e-ID card; and a citizen portal to provide access to interactive and transactional services.

The "Moderniza" Plan (2006-2008), a plan of measures aimed at improving, modernizing and simplifying the Administration with a view to better accommodate the needs of citizens. In 2008 the Spanish Council of Ministers approved a 'Plan for the Reduction of Administrative Burden and the Improvement of Regulation' the plan targets a 30 % cut in the burden currently resting on businesses.

The 'Avanza' Plan for the development of the Information Society forms part of the broader program 'Ingenio 2010'. The objectives of this plan is to develop user-centric e-Government which furthermore overcomes the most serious challenges facing public e-Services, This plan was divided into 2 phases. The first phase is to develop Information Society and for Convergence with Europe, and among Autonomous Communities and Cities. The second is consolidate the milestones achieved during the first phase of the Plan while contributing to foster the demand for ICT and to fortify the ICT industry.

Avanza 2 was introduced in 2010 toward the second strategy 2011-2015. The aim of this plan is to help overcome ten objectives such as Promote innovative ICT processes in regional governments, Spread ICT applications in health and well-being, and Enable the application of ICT to the educational and training system.

In 2012, Spanish government issued MEJORA plan (Strategic Plan for Improving Public Service and Administration) for the period of 2012-2015. The MEJORA is divided into three major strategies: General State Administration (Racionaliz@ Plan), Citizens (Simplific@ Plan), and other public administrations (Compart@ Plan).

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

According to ITU, there is approximately 75% of people in Spain were Internet connection in 2015, as for wireless broadband, Spain has about 70% subscriptions, but only 26% of the population has a wired broadband connection.

As for intranet connection, Spain has The 'Red SARA' network, administered by the Ministry of Finance and Public Administrations, is Spain's Government intranet. It interconnects 16 ministries, all Autonomous Communities (17) and Autonomous Cities (2), as well as over 3708 local entities, representing more than 90 % of the population. Red SARA's objective is to increase collaboration and interoperability among the information systems of the various levels of Government.

Furthermore, the Spanish government developed a lot of platform to promote e-Government services such as Public Certificate Authority (CERES), National e-ID Card (DNIe), @firma – MultiPKI Validation Platform for e-ID and eSignature Services, Cl@ve, and ePassports.

4.2 Management Optimization [MO]

In 2015, the Spanish government adopted the newest plan "The Digital Transformation Plan for the General Administration (GA) and the Public Agencies belonging to it (PAs) (ICT Strategy)". The ICT Strategy sets out the global strategic framework to make progress in the transformation of the Administration, sets forth the guiding principles, goals and actions required to complete it, as well as the landmarks in the gradual development of Digital Government.

4.3 Online Service [OS]

Like other European countries, e-Services in Spain also are divided to citizens and businesses. Spanish government has developed a high level system of applications: E-procurement, e-tax, e-payment, social security services and civil registration services, all have transactional functions. Labor related

services and e-Health system only allow two-way interaction while the website of consular services only provides downloading functions.

Some of the Regional Governments provide health-related services fully online, including access to electronic health records, appointments. Especially, in national level there is an interoperable health care for all the Autonomous Communities and the digital clinical history of the National Health System can be accessed from any connected region.

4.4 National Portal [NPR]

The first portal was launched in 2006, www.060.es gives unified electronic access to Spain's public services, regardless of which administration runs them. The national portal is a unique multi-channel system and a key entry point to the administrative services of all three levels of Government.

There are some national portals in administration side, administracion.gob.es is one of them. It is access point facilitates the intercommunication of citizens and businesses with Public Administrations. http://administracionelectronica.gob.es/pae_Home is the Public Administration's channel that unifies and centralizes all available information about e-Government. It serves as a gateway for all information on the status, development, analysis, news and initiatives around e-Government activities.

4.5 Government CIO [GCIO]

Currently, there is no official legal enactment of establishing CIO position in Spanish government. At national level, The State Secretariat for the Public Service, under the authority of the Ministry of Territorial Policy and Public Administration, is in charge and has full responsibility for the e-Government strategy. It promotes the full incorporation of information technologies and communications for the provision of public services through simplified procedures and processes aiming at the modernization of the entire sector. The Ministry of Industry, Tourism and Trade is responsible for conducting the Avanza Plan – now in its second phase, Avanza2 (2009-2012). Among the key objectives of this plan is the full development of e-Government.

At ministry level, there is a Ministerial Committee for Electronic Administration in each ministry, undertakes CIO tasks in terms of information technologies and e-Governmente-Government and in charge of coordinating ICT and e-Government developments within the various central ministries. A Ministerial Committee for Electronic Administration is chaired by the Undersecretary of the ministry and the composition will be determined by their respective governing according to the specificities of each department.

4.6 E-Government Promotion [EPRO]

The e-Government activities such as conference, advertisement for e-public services and oversight committee are doing at national and sub-national level. The council of Minister is in chart of doing e-Government strategy in Spain and now they are in the second stage of strategy (2011-2015) of 'Avanza 2' Plan. It has incorporated the actions implemented and has updated the original objectives to suit the new challenges of the Network Society.

4.7   E-Participation [EPAR]

This indictor got low score, during the evaluation there is neither information presence of government blogs on the official government portal nor e-consultation. No evidence to proof that the government takes the opinions of citizens in the decision making process and no evidence to inform the citizens on which decisions made based on citizens input.

4.8   Open Government Data [OGD]

Datos.gob.es incorporates the resources to facilitate the opening up and location of data on-line (following recommendations described by the Directive 2003/98/EC) and to raise user participation. It focuses its web activity on the Data Catalogue. It is available to professionals, businesses, managers of institutions and the general public. These are the main beneficiaries of and key players in the reuse of public sector information and make it possible to: launch new business models, modernize government bodies and create transparent platforms for public collaboration and participation.

4.9   Cyber Security [CYB]

Spain introduced the National Cyber Security Strategy in 2013. The strategy which sets objectives and targeted lines of actions. It is compatible with, and references, both the National Security Plan and existing security laws. Spanish government also established two computer emergency response teams (CERTs), INTECO-CERT and CCNCERT, and the National Centre for Critical Infrastructure Protection (CNPIC). In 2009, the government cooperates with the private sector to formalize the National Advisory Council on Cyber-security.

4.10 The use of Emerging ICT [EMG]

The growth of IoT in Spain is being incubated by academia in the area of information and computer science such as at the NICS Lab. But there is no information could be found on the evidence that government agency has used IoT or Big data in daily activities of government agencies.

5   Some Highlights

There will always be a percentage of the population unable or reluctant to use electronic means with Public Administrations. Extending the benefits of e-Government to these citizens is, without any doubt, the major challenge for inclusive e-Government policies. The development of multi-channel strategies based in human in termsediaries is now possible in Spain.

Compared to last year, Spain increased 4 places from No. 32 to No. 28 in the rankings this year. In 2015, thanks to a new development strategy in the promotion of e-Governmente-Government, Spain has clearly policies and strategies intended to promote open government data and cyber security. Furthermore, changing the number of assessment indicator which positive effects in helping Spain increasing in the rankings this year.
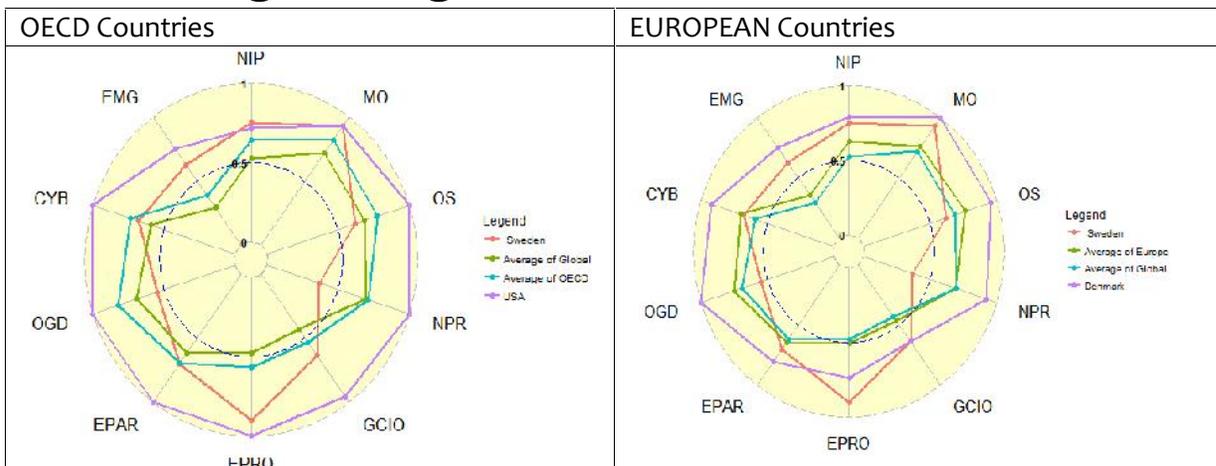
Sweden

1 General Information

Area: 450,295 km²
Population: 9,801,616
Government Type: constitutional monarchy
GDP: $48,000

Historical Ranking (2005 – 2016)

2 Positioning in a region

OECD Countries	EUROPEAN Countries
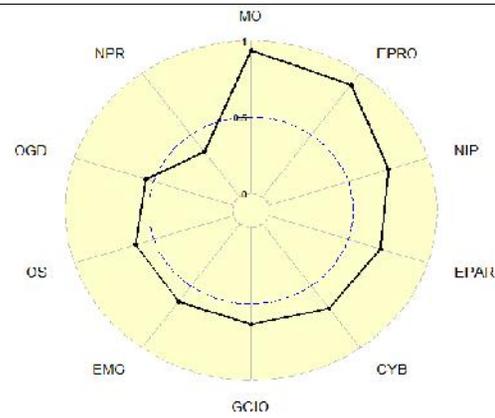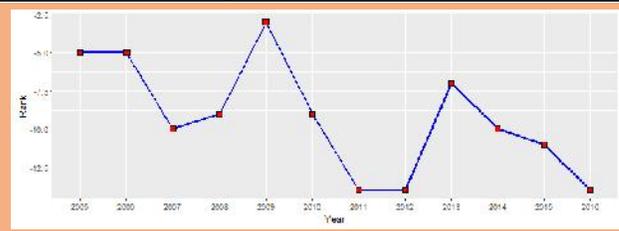
Among OECD countries, Sweden has very high scores on network infrastructure, e-Governmente-Government promotion and management optimization. These scores are far above the world and OECD's average and very close to the USA's – who achieved the top position in OECD countries.

In European countries, Sweden surpasses the regional average on almost indicators, except Online Services, Open Government and National Portal. Especially in e-Governmente-Government promotion, the Swedish government even outweighs Denmark, securing the 1st in the European in this indicator.

3 E-Government Development

As one of the world's best connected countries, Sweden has 100% cell phone subscriptions with data, 90% Internet users, 87% households with personal computers, and 32% broadband subscribers). All of these conditions combine with an early interest from decision-makers on IT, have turned Sweden

into a prominent ICT nation with good infrastructure and advanced services. In fact, Sweden is one of the international leaders with regards to e-Governmente-Government (United Nations, 2012). The Swedish government has formulated strong policies in this progress.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 84.6% Australia's population were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). Among them, wired broadband subscribers accounted for around 25.8% while more than 100% of total population have a wireless broadband connection.

4.2 Management Optimization [MO]

In December 2011, the Ministry of Enterprise, Energy and Communications published the latest national policy for e-Government, called ICT for Everyone - A Digital Agenda for Sweden Digital Agenda[49]. The agenda describes how the Swedish Government plans to further reinforce the capacity of government agencies to work together in delivering digital services.

In order to strengthen the collaboration among government agencies, Sweden launched a new e-Governmente-Government strategy, "the Digital Step" targeting on making public administrations simpler, more transparent, and more efficient, with a major focus on citizen-centric e-Services.

4.3 Online Service [OS]

The score for Online Service comprises of five sub-dimensions: e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience.

In general, most of public services in Sweden are provided digitally. However, not all of them reached the transactional complexity level. Regarding e-Procurement, the Swedish Government has not implemented a centralized portal for electronic public procurement, as this is intentionally left up to private operators. The website avropa.se is currently the primary means of communication with procuring entities and suppliers. In order to facilitate the delivery of transactional e-Services to citizens, the Swedish Government has put into place the National e-Identification Board, whose mission is to promote and coordinate electronic identification and signature for the public sector e-Services. Regarding Taxation and Customs, skatteverket.se and tullverket.se are two electronic portals established to provide various transactional services to citizens and businesses. Those services obtained the highest level in complexity score.

To measure the level of convenience, the third party application Google PageSpeed™ Insight[50] has showed that all services have a good access speed.

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[49] http://www.government.se/contentassets/8512aaa8012941deaee5cf9594e50ef4/ict-for-everyone---a-digital-agenda-for-sweden
[50] https://developers.google.com/speed/pagespeed/insights.

Table 25 List of Online Services

Online Service	URL
e-Procurement	http://www.avropa.se/
e-Tax	http://www.skatteverket.se/
e-Customs	http://www.tullverket.se/
e-Health	http://www.minavardkontakter.se/
One-Stop Service	N/A

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. Government.se is the government portal of Sweden. It presents a wide range of information resources about government structure, government agencies, legal documents and daily news regarding to government's operations. Information are delivered in 16 different languages.

In technical aspect, the result of Google PageSpeed™ Insight showed that the website operates well both from PC and from Mobile Device. The portal also provides several contacting methods via various Social Networks such as Facebook, Twitter, YouTube, Flicker as well as there is a feature allowing user to receive update mail notification.

4.5 Government CIO [GCIO]

Tt is clear that the position of CIO does exist in all levels of government, from national, to regional, to local, albeit under different names and with different responsibilities.

4.6 E-Government Promotion [EPRO]

On 1 July 2015, the Swedish e-Government Delegation was said to be completed its mission and no longer responsible for e-Governmente-Government development. Instead, another e-Governmente-Government unit was said to be setting up at Ministry of Financial and the Minister for Public Administration Ardalan Shekarabi will be responsible for e-Government.

For municipalities digitalization, Swedish Association of Local Authorities and Regions (SKL) continues being in charge. Swedish Association of Municipalities for Joint Development of Public e-Services (SAMBRUK) initiated in 2003, involving 11 ICT Managers, for joint development of e-Services. So far, this organization's members include approximately 80 member municipalities from all over Sweden

In terms of monitoring e-Governmente-Government progress, the Digitalisation Commission has been established in 2012 by the Swedish Government to analyze and monitor progress towards the Swedish ICT-policy goal to become the best in world at digitalization. Sweden also has research think-tanks on e-Governmente-Government, such as eGovLab of Stockholm University[51] or Timbro[52].

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[51] http://www.egovlab.eu/index.php/about-us
[52] http://timbro.se/en

4.7 E-Government Participation [EPAR]

There are around 60% of Swedish citizens use e-Services. The total of services provided online is around 3800 services. Another successful story about e-participation in Sweden is E-identification, which has over 4 million users out of 9 million citizens. These users conducted over 250 million transactions in various private and public e-Services during 2011[53], thanks to the availability of a world-class broadband. This enables households and businesses to have good opportunities to use electronic public services via broadband.

4.8 Open Government Data [OGD]

By publishing the Swedish Second National Action Plan 2014-2016 for the Open Government Partnership, the Swedish government reaffirmed its commitment to open government efforts, both in principle and in practice. Similar to other Nordic countries such as Finland and Norway, Sweden has a high degree of transparency and open government.

The Public Sector Information website was launched in February 2014 by VINNOVA (Sweden's Innovation Agency). The website is about making public information more accessible, denoting the extent to which Swedish authorities comply with the holistic vision on open data.

4.9 Cyber Security [CYB]

A national strategy on Cyber security is under preparation progress. However there are some policies promulgated by government agencies such as the Strategy for Information Security in Sweden 2010-2015[54] by The Swedish Civil Contingencies Agency.

Sweden has formulated several legal documents regarding e-commerce and cyber security such as Personal Data Act, Public Access to Information and Secrecy Act, Act on Electronic Commerce and other Information Society Services (2002).

In terms of cyber security government entities, CERT-SE was established in 2003 and is responsible for coordinating incident response measures for both government institutions and private entities across all Swedish networks[55], while network and information security protection is the main role of The Swedish Civil Contingencies Agency (MSB).

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). There is little evidence found on the use of emerging technologies in public sectors.

5 Some Highlights

There have been lots of efforts carried out by Swedish Government to promote for e-Governmente-Government. These activities could be found in both central and local government levels. For

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[53] http://www.opengovpartnership.org/es/files/swedens-ogp-action-plan-2014-2016-pdf/download
[54] https://www.msb.se/RibData/Filer/pdf/25940.PDF
[55] http://cybersecurity.bsa.org/assets/PDFs/country_reports/cs_sweden.pdf

example, in October 2015, an advisory board for e-Government was established by the Swedish government which consist of high-level decision-makers in the public sector with the task to give advice on e-Government policy[56]. In addition, regular meetings and events were held at municipality level to promote different aspects of e-Government. All of these evidences resulted a high score for Sweden on e-Government promotion ranking this year.

More attentions need to be paid on providing information on the national portal. It is advised that country information and available services should be included on the national portal as a one-stop gateway for residents and foreigners. In addition, being the country with many famous technology corporations such as Erikson, the government is recommended to utilize emerging technologies into public sector's operations. This will help to improve the ranking of Sweden in this area.

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[56]   https://joinup.ec.europa.eu/sites/default/files/ckeditor_files/files/e-Government%20in%20Sweden%20-%20February%202016%20-%2018_0_v1_00.pdf
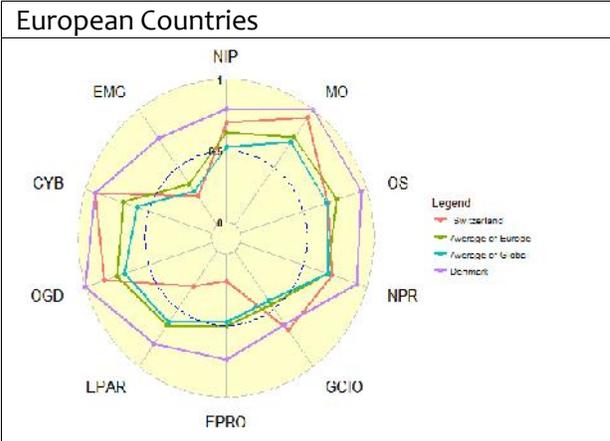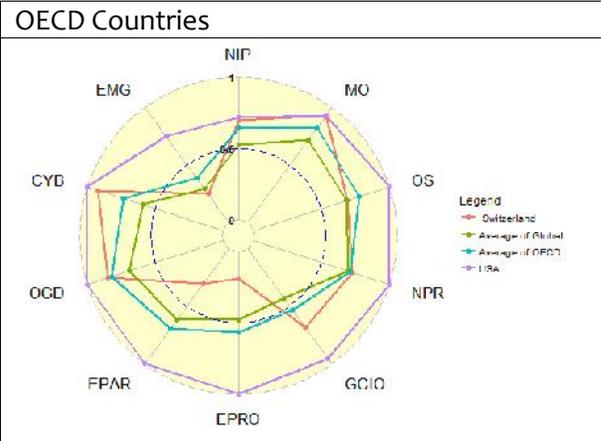
Switzerland

1 General Information

Area: 41,277 km²
Population: 8,121,830
Government Type: Federal Republic
GDP: $ 59,300
Historical Ranking (2005 – 2016)

2 Positioning in a region

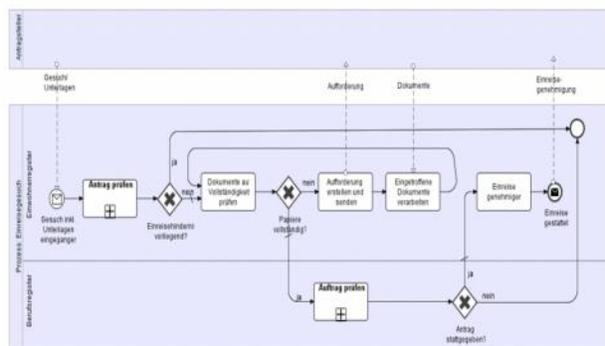| OECD Countries	European Countries
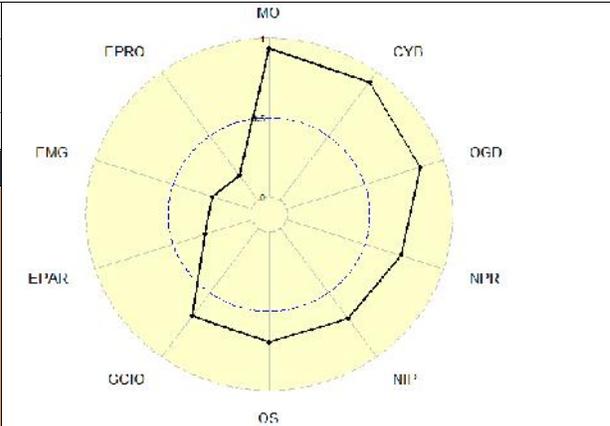
3   Government Development

Abbildung 4: BPMN-Modellierungsbeispiel für „Antrag für Einreisebewilligung mit Erwerbsabsicht entscheiden"

On 24 January 2007, the Federal Council launched a national e-Government strategy. Unlike in many countries where the national e-Government strategy is commonly proposed by central government, Switzerland develeop the strategy in a collaboration between the cantons and the municipalities, under the direction of the FSUIT. The strategy comprises the basis for the Confederation, the cantons, and the municipalities to align their efforts toward common goals.

In December 2015, the Confederation and Cantonal Government of Switzerland adopted the revised strategy and settled the framework agreement for 2016-2019 legislative period.

To strengthen the integration and collaboration among government intitutions, The Swis Conference on Informatics (CSI) encourages the participation of cantonal and municipal authorities in the implementation of e-Government strategy.

4   By Indicators

4.1   Network Infrastructure Preparedness [NIP]

Approximately 87% of people in Switzerland were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 46% have fixed-broadband subscriptions, and wired broadband subscription has reach 76.6%.

4.2   Management Optimization [MO]

e-Government Strategy Switzerland was created through a collaboration between central and local government. The strategy has set the role and responsibilities of each agencies. There are measurable target and objectives on the e-Government Strategy. Furthermore, the strategic plan has been cascaded into more detailed action plan.

Switzerland government uses Business Process Model Notation (BPMN) for illustrating government business process. This practice will enable to identify redundancy or critical process that could be eliminating or adding more control over it.

Since the strategy is the result of good cooperation between central and local government, there is a mutual control system among them regarding data exchange. Network Administration Switzerland handles such activities.

4.3   Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its

URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e-Procurement, e-Tax, and One-Stop Service are the best performer among five online services.

In terms of complexity level, all online services have reach interaction level where the citizen can obtain the service without necessarily visit to the government office. Initial stage of interaction with government through the portal. In addition to that, all Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

To measure the level of convenience, the third party application result has showed that three portals are above the average considerably in terms of speed. E-Procurement and e-Customs are the only portal that scored below average, thus, considerably slow to access. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 26 List of Online Services

Online Service	URL
e-Procurement	http://www.simap.ch/
e-Tax	https://www.estv.admin.ch
e-Customs	http://www.ezv.admin.ch/index.html?lang=en
e-Health	http://www.e-health-suisse.ch
One-Stop Service	https://www.ch.ch

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of Switzerland (https://www.admin.ch) contains proper information for local citizens and foreigners. Information about Switzerland is available on the portal. User can find information about culture and heritage, demographic, and government. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is below average on both from PC and from Mobile Device. However, from the user experience aspect, this website is tremendous.

4.5 Government CIO [GCIO]

Switzerland has clearly defined the appointment of GCIO in all level of department. Furthermore, the mandate and the role of GCIO are stated on the official document under "Framework agreement under public law on e-Governmente-Government cooperation in Switzerland (2016 – 2019)".

4.6 E-Government Promotion [EPRO]

There is no significant evidence to indicate that Switzerland government conduct any initiatives to promote the use of e-Government Service. This situation is similar to the one in any developed countries where the IT Culture has been embraced in the society.

4.7 E-Participation [EPAR]

Culture and society in Switzerland has been created as a high tech society. These factors have driven Switzerland to the next horizon of e-Government. Citizens and government can take the benefit of

ICT in their daily life. However, there is no application where the citizen can directly communicate to the government. The absence of e-participation portal significantly impacts the score of this indicator.

4.8 Open Government Data [OGD]

In 2004, Switzerland has launched Federal Act on Freedom of Information in the Administration to participate in the Freedom of Information Act movement around the world. To strengthen the implementation of these act, Switzerland has established Open Data Portal (https://opendata.swiss/en/) to provide public with accessible government information. To keep the information update, Switzerland government authorize all government agencies to publish their data to the open data portal on behalf of the state.

4.9 Cyber Security [CYB]

Switzerland has ratified several laws related to cybersecurity. Some of them are as follow:

- Information Protection Ordinance 2007
- Federal Act on Data Protection 2010
- Information Protection Ordinance 2007
- "Military Act, Art 99/100 Ordinance on the Armed Forces Intelligence Service (O-AFIS)"
- Federal Law on Certification Service

In addition to these laws, Switzerland has strengthened organization capacity for cybercrime countermeasure by setting up Swiss Cyber Security Advisory and Research Group. Beside the advisory group, there are two important organizations in the Swiss cybersecurity, i.e., FITSU and Swiss-CERT.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Switzerland has attempted to implemented Cloud Computing for Public Sector. Switzerland built a private cloud for government. The strategy for implementing Government Cloud has been approved by e-Government Steering Committee in October 2012. Along with the implementation of Government Cloud, Swiss government has implemented Big Data Analytics in Swiss State Secretariat for Economic Affairs.
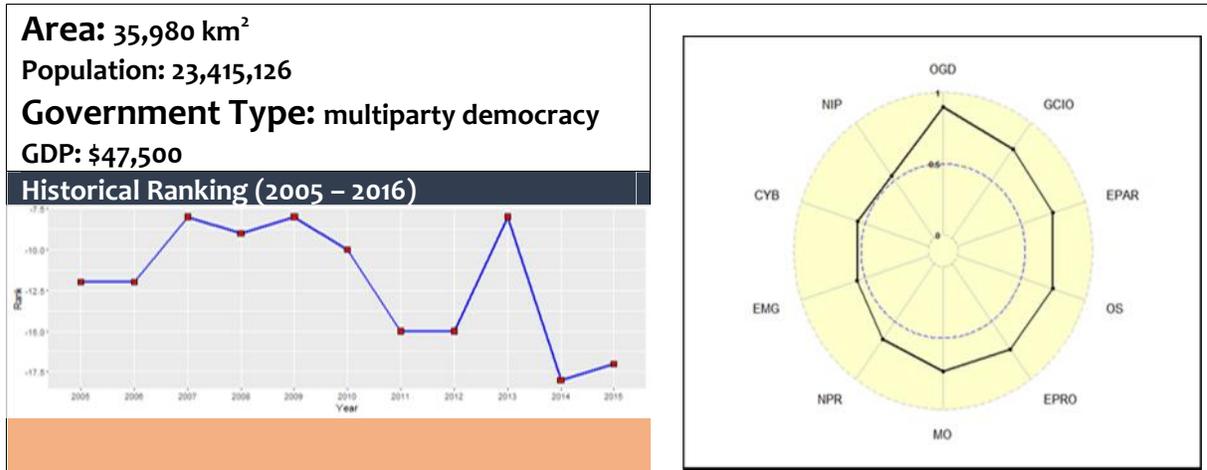
5 Some Highlights

Among ten indicators in the current ranking, the Management Optimization is the best among other indicators in e-Government Switzerland. This achievement signifies the importance of strong collaboration between central and local government; Confederation and Cantonal, for improving the quality of government business process. Similar to other European countries, Switzerland is shifting its e-Governmente-Government to the next level in which they try to make all public service will be digital by default.

The weak point in Switzerland is about e-Government Promotion and the use of emerging ICT. One argument is that the lack of e-Governmente-Government promotion activities occurred because Switzerland does not need such programs anymore. Their citizen is aware already of e-Governmente-
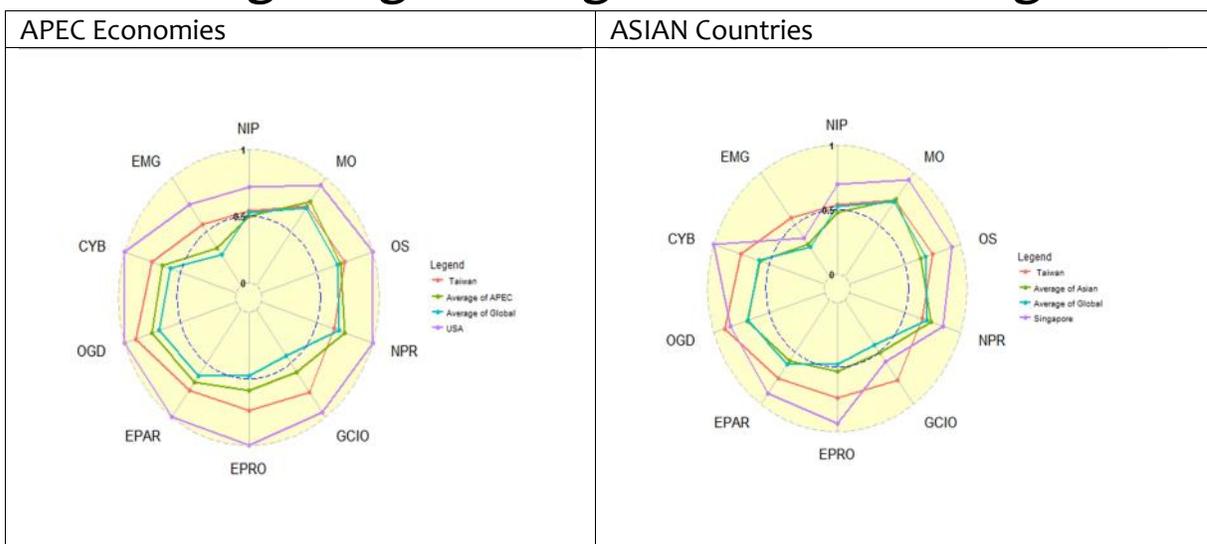
Government service and knows how to use it. However, by the increasing use of emerging ICT, Switzerland still has a chance to get the higher score in e-Government Promotion. The promotion activities will follow the progress of implementation of the New e-Government Strategy since it needs some introductions of new services to the citizens.

Taiwan

1 General Information

Area: 35,980 km²
Population: 23,415,126
Government Type: multiparty democracy
GDP: $47,500

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

APEC Economies	ASIAN Countries

Among APEC countries, expect Management Optimization and National Portal, rest 8 indicators of Taiwan are above the average score of APEC members, Especially the performance on Open Government Data. Taiwan also has achieved comparatively better scores compared with Asia countries, exceeding or equal to the average except National Portal.

3 E-Government Development

The national development council of Taiwan has published national e-Governmente-Government plan (2017-2020) this year, as the fifth step after previous strategies. The new plan is aim to match the white paper: ide@Taiwan2020 Policy which released earlier. According to its definition, "e" is for

"e-Governmente-Government": to provide people proactive, niche, or comprehensive services through streamlined administrative processes and effective and efficient management. Also, "I" (intelligent Taiwan), "d" (digital nation) and "a" (accessible to the people) are indispensable and relative goals valued at the paper. However, in its new plan for next 4years, Taiwan sets the goal to move towards a "digital government" era surpassing traditional e-Governmente-Government phase. The new objective adopting emerging technologies like big data and cloud-computing is to build a comprehensive data-driven system of which citizens can take full advantage instead of receiving standard public service. Other targets such as government transparency and accountability could be achieved effectively as well in the new vision.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

According to ITU's investigation, Internet users take up 80% of the population in Taiwan. About 24.7% are Fixed-Broadband users, and 57.1% of the wireless broadband users, in which most of advanced countries have achieved more proportion close to 100%~110%.

4.2 Management Optimization [MO]

Taiwan has propelled the administrative reformation by information system since 1980s. After consistent e-Governmente-Government plans of five stages within particular emphases on government system integrations, it has optimized the internal office and established an effective operation. However, to keep the e-Governmente-Government program advancing, meticulous periodic evaluation of each plan needs to be fulfilled and presented to the public by government.

4.3 Online Service [OS]

The score for Online Service is evaluated on five online services, i.e., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. There are three levels of sophistication were examined as Level of Complexity, Level of Security, and Level of Convenience. For Taiwan, most of the online services have been estimated as high performances which provide citizens with transactional online service, except the portal for e-Health. The services presented on the site(http://www.mohw.gov.tw/) are staying at e-information, application and inquire. Now some advanced countries have already established an e-Health online system to connect the hospitals, care-center with citizens in which multiple needs on health can be satisfied even with one APP. Considering the fact of incoming aging society, there are undoubted necessaries to integrate the e-Health system to serve citizens in different needs and priorities.

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. The National Portal of Taiwan (http://www.taiwan.gov.tw/) offers information about Taiwan including demographic and historical introductions. Other information has been classified by different purposes such as Visas/Immigration, Education/Employment, Tourism, Economy and so on. There are also guides for residents with various aspects of living in Taiwan. E-Information is the main function for National Portal of Taiwan, which could increase more services in the future.

4.5 Government CIO [GCIO]

Taiwan has put effort to establish the GCIO system. The year 2012 was an important time point in which the first GCIO Mr. San-Cheng Chang has been appointed and the second- degree GCIO system was set up. According to it, The Convenor of National Information and Communications Initiative Committee (NICI) will fill the post of GCIO in Executive Yuan level and each Ministry level of central government have their CIOs as well. Regular CIO Meeting has be held among the CIOs and deputy heads of municipal and city governments.

4.6 E-Government Promotion [EPRO]

The newest e-Government agenda published in 2016 focus on the digital government construction within the utilization of emerging technologies including IOT, Cloud Computing and Big Data. To coordinate with the ide@Taiwan 2020 white paper, the fifth e-Governmente-Government plan has proposed three main objectives as "Provindg convenient living" "Develop digital economy" and "Fulfill governance transparency". The core concept of the new plan is "Data-driven" " public-private collaboration" and "civilian-centric". There are also other promotions cover issues such as government open data and infrastructure.

4.7 E-Participation [EPAR]

Most of the government agencies in Taiwan have prepared channels for citizens to interact with specific agencies via email, Tel and online message form. A simple search engine on the one-stop service portal enables users to find the departments they want to reach directly and effectively with completed contact lists by names.

For a nation like Taiwan who values democracy, there are more energies and needs to explore the e-Participation contexts such as e-Voting and e-Decision making process which could combine social desires on democracy and information society into more efficient public services supported by ICT.

4.8 Open Government Data [OGD]

Taiwan got comparatively high scores on indicator of Open Government Data and tied with Singapore for the first place among Asia nations. Open data initiative has remained one of the first priorities in e-Government plans of Taiwan, within legal preparedness such as "The Freedom of Government Information Law (2005)" "Copyright Act (2014)" and "Personal Information Promotion (2015)". The Open Data Portal (http://data.gov.tw/) are not only updating datasets on every aspect in social life and governments, but also providing space for citizens to comment and discuss after checking the data. What's more, the details in data standards and guide for users to read and utilize information are presented on the website.

4.9 Cyber Security [CYB]

Several policies related to Cyber Security have been issued in Taiwan including such as Information and Communication Security Policy White Paper (2008/2010) and National Information and Communication Security development project (2013-2016). To strengthen nation's capacities in Cyber Security, the National Information and Communication Security Taskforces (NISCT) was formed by The Executive Yuan in 2001, by whom Ministry of Science and Technology were issued as the

responsible authority for Cyber Security instead of NISCT, within a new institution called "National Center for Cyber Security Technology (NCCST)" in 2016.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). `Taiwan government is earnest to` implement new technologies into Public Sector. There are all evidences to show their ongoing projects and plans adopting Cloud Computing or Big data, to correspond the data-driven vision for nation's strategy. However, regulations around emerging technologies are still not been prepared, same situation to other countries who try to put the technologies into practice at the first place.

5 Some Highlights

Taiwan jumped to 11th in Waseda e-Governmente-Government ranking in 2016. It has great performance on indicator of "Open government", showing government's effort actions to achieve the goals that have been emphasized in aforementioned national plans. As a matter of fact, Transparency, Accountability or E-democracy have always remained social focus in the society. Along with the development of digital government strategy, Taiwan is expected to gain better achievements on "e-participation" "the usage of emerging technologies" in the future. On the other hand, national portal should not be forgotten since it is not only the portal to send nation's message to citizens but also an important window for non-Taiwan citizens to understand and become familiar with the society. In addition, cyber security is a vital issue for digital government as well.
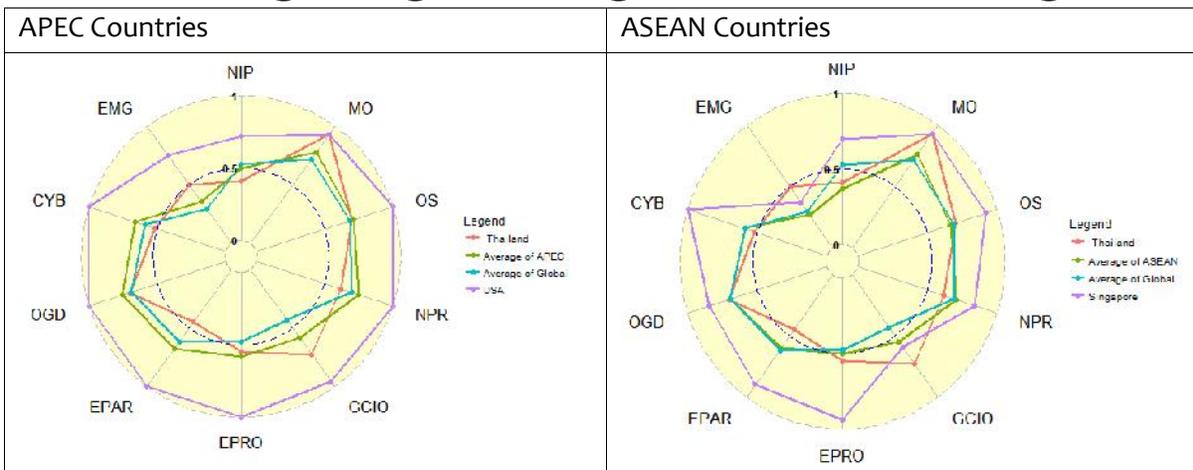
Thailand

1 General Information

Area: 513,120 km^2
Population: 67,976,405
Government Type: Constitutional Monarchy
GDP: $16,100

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region
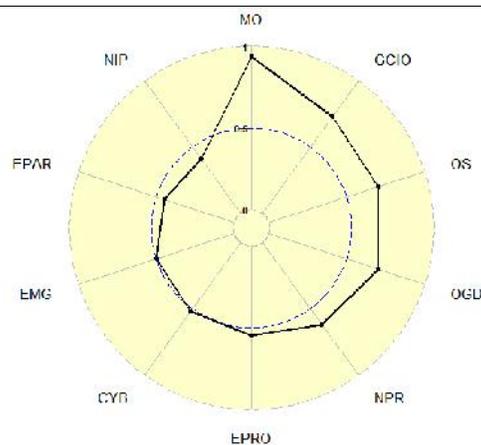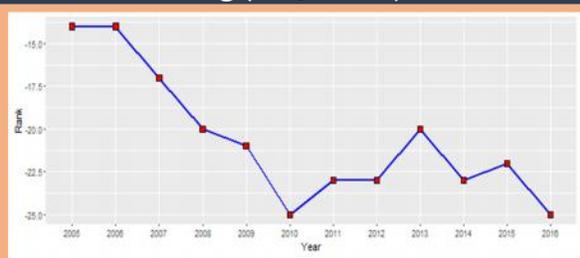
APEC Countries	ASEAN Countries

Among APEC Countries, the Management Optimization (MO), GCIO, e-Promotion (EPRO) and the use of Emerging Technologies for government (EMG) indicators are above the average score of APEC members. The Management Optimization (MO) indicator of Thailand gets the same level of United States, the best country in the global ranking and also in APEC. Amongst ASEAN countries, Thailand is placed below Singapore. However, the GCIO is better than those of Singapore, the best country in ASEAN region. Moreover, the National Portal (NPR) indicator of Thailand is lowest among these regions.

3 E-Government Development

The Ministry of Information and Communications Technology (MICT) is the main body responsible not only for the ICT master plan but also for the National e-Government policy formulation. MICT presented Thailand Information and Communication Technology (ICT) Policy Framework (2011-2020) is ICT2020 which was released on May 2011. In 2016, Thailand government announced the draft of Digital Economy Development plan along with Digital Government Development plan. The digital economy sets the framework and direction driving
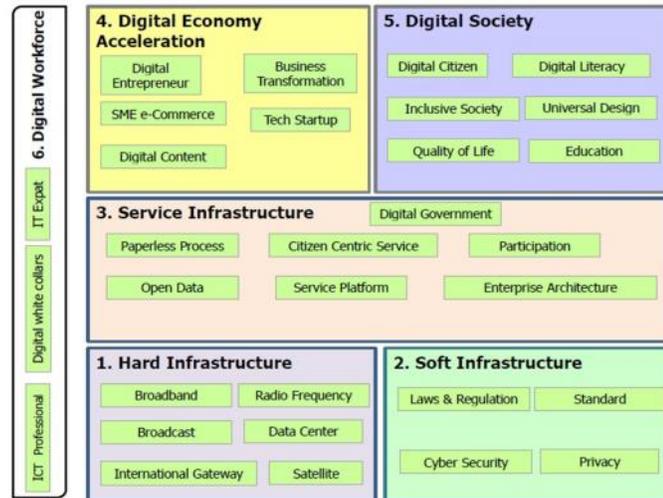
Digital Economy Strategy of Thailand

the economy and society as a whole; while the Digital government development plan provides more detail for the government sector moving toward digital economy. The strategic framework "Digital Thailand" for promoting a digital economy consists of four areas: Digital Commerce, Digital Entrepreneur, Digital Innovation, and Digital Content. Emphasis will be placed on five strategies, namely, Hard Infrastructure, Service Infrastructure, Soft Infrastructure, Digital Economy Promotion, and Digital Society.

Digital Government development plan has been established by Electronic Government Agency (Public Organization) (EGA) with takes the roles to develop and integrate information and communication technology systems to achieve establishing e-Government which is the country's key strategy to effectively leverage government's capabilities of management and public service systems. Digital Government Plan 2016-2018 has characters with 1) Government Integration; 2) Smart Operations; 3) Citizen-centric Services; 4) Driven Transformation. In addition, there are 4 digital government strategies define as 1) Developing the capacity to support government services; 2) Elevation of Citizen's Quality of life; 3) Enhancing the capacity of business sectors' competitiveness; 4) Increasing national security and public safety.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 34.9% of people in Switzerland were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 8.2% have fixed-broadband subscriptions, and wired broadband subscription has reach 79.9%.

4.2 Management Optimization [MO]

Although Thailand scores highly in termss of optimization awareness, the development of an EA framework remains average. There is significant work to put interoperability under the control of

MICT. The present Thailand Information and Communication Technology (ICT) Policy Framework (2011-2020) is ICT2020 which was released on May 2011.

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and their URL Address. All of those services were investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e-Procurement, e-Tax, and e-Customs are the best performers among five online services.

In terms of complexity level, all online services have reach interaction level where the citizen can obtain the service without necessarily visit to the government office. Initial stage of interaction with government through the portal. In addition to that, all Online Service have implemented security measures such as Site Authentication, and Password Protection for obtaining the services. However, it is still limit to use SSL as security measure when login to system.

To measure the level of convenience, the third party application result has showed that all portals are below the average considerably in terms of speed. Thus, their access speed considerably slows to access, according the big size of page that use many picture and not using the web cache. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 27 List of Online Services

Online Service	URL
e-Procurement	http://www.gprocurement.go.th
e-Tax	http://www.rd.go.th/
e-Customs	http://e-tracking.customs.go.th/ETS/index.jsp
e-Health	http://ict.moph.go.th/
One-Stop Service	https://www.govchannel.go.th/

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. Thailand has several websites collectively which make up government online presence. The digital portal of the Thai government is www.egov.go.th that provides daily information and e-Government connectivity for citizens. The portal is available only in the national language Thai. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is below average on both from PC and from Mobile Device. It scored below average in terms of page speed.

4.5 Government CIO [GCIO]

The Chief Information Officer (CIO) is a bureaucratic position mentioned in ICT Master Plan 2002 - 2006. In Thailand, CIOs are appointed at all levels except town/city level. A Government CIO office is established at national level. There are several organizations for the CIO, such as the CIO Association

of Thailand (CIO and IT persons from both government and private sectors) and the International Academy of CIO in Thailand. In addition, The National Electronic and Computer Technology Center (NECTEC) also studies about CIOs. EGA has e-Government Academy that also coordinates with other organizations to hold CIO related activities like seminars, conferences, and workshops. For the purpose of the realization of Smart Thailand, the ICT 2020 also emphasizes the important role of CIOs in termss of both private and public sectors.

4.6 E-Government Promotion [EPRO]

The e-Government Promotion & Development Bureau (Under MICT) was in charge of e-Governmente-Government promotion in Thailand. Now, it is charged to EGA. And, The National Information Technology Committee, NECTEC, and the IT Operations Support Office are government entities involved in assessing the progress of e-Governmente-Government. However, ministries, local governments, and some state-owned companies in telecommunications are also involved in promoting e-Governmente-Government.

4.7 E-Participation [EPAR]

In general, all interest groups have online access to essential administrative information. As of November 2014, current Thai government led by General Prayut Chan-o-cha has released official Facebook webpage of National Council for Peace and Order (NCPO) in order to be alternative communication between Thai people and current government. In addition, there is no application where the citizen can directly communicate to the government. The absence of e-participation portal significantly impacts the score of this indicator.

4.8 Open Government Data [OGD]

Since 2013, Thailand government has appointed EGA to develop Thailand Government Open Data "https://www.data.go.th/" and Open Application "https://apps.go.th/". These projects are still in an ongoing process. It is limited of dataset, and it contains links and descriptions for about 552 datasets and has 211 applications as one the end of May, 2016. To keep the information update, EGA authorize all government agencies to publish their data to the open data portal on behalf of the state, and EGA also has seminar and event to promote Government open data. In addition, for Thailand increasing of Government open data means showing the political will to fight against corruption by publishing as much information as possible in free access for citizens, however it is also creating new economic opportunities and helping better business decisions be made through open data.

4.9 Cyber Security [CYB] (7.6/10)

Thailand has The Electronic Act 2001 as the core of its cyber law. This act delivers the legal framework for the validity of digital signature and electronic transaction. On 18 July 2007, the Computer Crime Act B.E.2550 (2007) came into force. Now, Thailand is in the process of establishing new legislation of the government's digital economy policy. The Cybersecurity Bill, one of the legal instruments proposed is under review, and the Bill specifies the establishment of a National Cyber Security Committee (NCSC) which will be chaired by the prime minister to provide national level cybersecurity policy to protect prevent and combat cyber threats.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). G-Cloud is an IaaS that utilized cloud computing technology for managing resources of government, and it has been certified by ISO / IEC 27001: 2013 that ensure the information security management system. Thailand now is preparing to establish "Government Big Data Testbed committee" that involved EGA. However, the evidence shows that Big Data is not officially launched. In addition, EGA by Research & Development team is working on some research and published some papers on IoT issue. And many of prototype project that provided by EGA is ongoing.

5 Some Highlights

Thailand has the impressive point on Management Optimization, Government CIO, and Online Service. A new plan of ICT2020, taking into account of the past experience, current status and future challenge to be expected, was issued by MICT for the purpose of policy continuation in 2011. All the directions will lead Thailand to a country in 2020 where 95% of the population will have access to broadband, the economy will be service and creativity based type, ICT value will be of significance to the whole economy while more than half population will be aware of the importance of ICT. A Government CIO office is established at national level. Even though all government units have a CIO, most CIOs still lack knowledge, understanding and skills in technology. There are several organizations for the CIO, such as the CIO Association of Thailand and the International Academy of CIO in Thailand.

The use of emerging technology and e-Participation are the weak point of Thailand. However, the use of Cloud Computing is high that there have been accumulated number of 129 different organizations using G-Cloud from the total number of 259 Cloud Computing-based system or project. According, Thailand still does not have election yet, the e-Participation score is low. Thailand prepared the plan by establishing the "Government Big Data Testbed committee" that involved EGA, NSTDA, NECTEC, DoH and Thammasat University. The objective is considering the Big Data plan. Moreover, in 2015, the Government Big Data Conference 2015 and the Hackathon events in Big Data which organized by EGA is a highly successful and is renowned both in the public and private sectors.
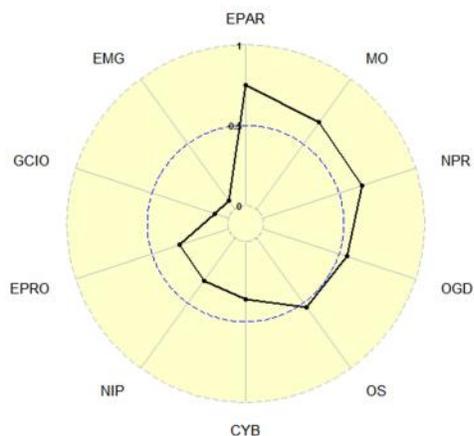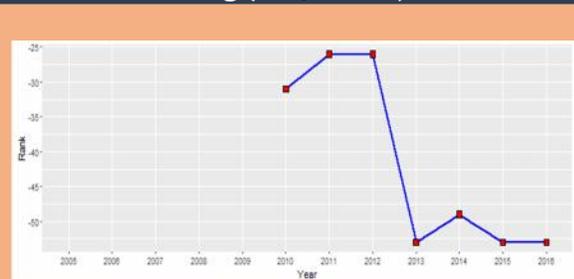
Tunisia

1 General Information

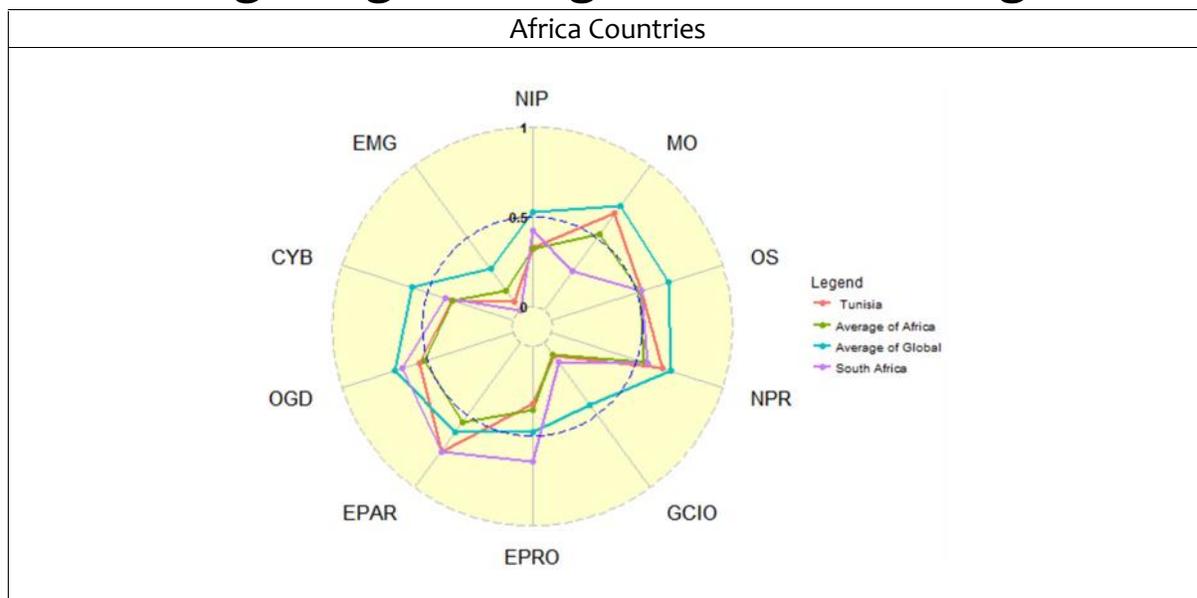**Area:** 163,610 km^2
Population: 11,037,225
Government Type: Republic
GDP: $11,600

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region

Africa Countries

Legend
- Tunisia
- Average of Africa
- Average of Global
- South Africa

Among Africa Countries, all indicators except e-Government Promotion (EPRO) and the use of Emerging ICT on Government (EMG) indicator are above with the average score of Africa region. In addition, the Management Optimization (MO), National Portal (NPR) and the use of Emerging ICT on Government (EMG) indicator of Tunisia are better than those of South Africa, the best country in Africa region.

3 E-Government Development

In 2010, the Tunisian government issued the e-strategy 2010-2015. It is a part of the dynamics of the Tunisian Government for the development of the knowledge economy and the introduction of Technologies of information and Communication "ICT" in Tunisian. The Tunisian government focuses on two complementary objectives: the improvement of the citizen-administration relationship and the development of Tunisian enterprises' competitiveness. The achievement of these two objectives rests on the development of an efficient integrated administration in the service of citizens and enterprises, enabling better interaction with citizens and a more competitive environment for enterprises. The development of e-administration in Tunisia occupies a central place among national priorities. It is a fundamental pillar in the global and sustainable development process given the primordial role of e-administration in the improvement of public management performance and the reinforcement of service quality.
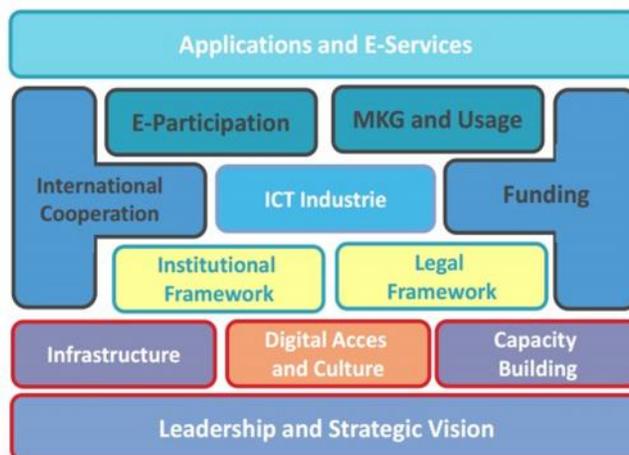
e-Government Framework

Tunisia joined the Open Government Partnership on January 2014. This is an international forum to exchange successful experiences in the field of open government and promote the progress of the member countries. The Tunisian government has embarked on the preparation of a national action plan (National OGP Action Plan 2015-2016) for the Open Government Partnership. They aim to implement a number of reforms in the area of governance and anti-corruption throughout 2015 and 2016 in collaboration with the various components of civil society.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 46.2% of people in Estonia were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 4.4% have fixed-broadband subscriptions, and wired broadband subscription has reached 47.6%.

4.2 Management Optimization [MO]

In 2010, the government issued the National Strategy for e-Administration Development for the period 2010-2014. This strategy includes a new generation of public services based on the idea of services integration and interoperability between information systems belonging to administrative structures.

4.3 Online Service [OS]

The score for Online Service is based on five investigating online services, i.e., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL

Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Tunisia's approach to promoting information society development and innovative citizen shaping has been positioning information and communication technologies as key drivers for its economy. Tunisia has well-designed and developed technology parks such as El Ghasala. Furthermore, it has strong research centers and good universities researching modern ICT tools and techniques.

For measuring the level of convenience, the third party application result has shown that three portals are above the average considerably in terms of speed. The other two portals, i.e., e-Health and One-Stop Service are slightly above the average. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Table 28 List of Online Services

Online Service	URL
e-Procurement	https://www.tuneps.tn/index.do
e-Tax	http://www.impots.finances.gov.tn/
e-Customs	http://www.douane.gov.tn/
e-Health	http://www.santetunisie.rns.tn/fr/
One-Stop Service	http://www.pm.gov.tn/

4.4 National Portal [NPR]

The Tunisian Government portal www.bawaba.gov.tn or www.tunisie.gov.tn serves as a government portal for the public administration, citizens, businesses, visitors and civil society. The portal only hosts online service information and provides links to relevant domains. The portal delivers most of its contents in its official language of Arabic, but also offers information in French. There is no English version of the portal.

4.5 Government CIO [GCIO]

The Tunisian public administration at national and local levels does not appoint CIOs or equivalent positions within the legal framework. The director general for e-Government under the prime minister can be considered the CIO at the national level. Similarly, there is no CIO related education in the Tunisian education system. It should also be noted that the private sector in the country does not appoint CIO positions.

4.6 E-Government Promotion [EPRO]

For Tunisia, it can be noted that ICT promotion, which increasingly also includes e-Governmente-Government promotion, is the main priority of government and the presidential agenda. The law of e-Government exists at the national level but not at the sub-national level.

There also seems to be growing collaboration in the non-government, private and public sectors. This synergy with the presidential leadership at the top level of administration helps to promote ICT penetration and engagement of stakeholders besides changing the nation's online connectivity culture. However the frameworks, methods and tools used to measure and evaluate e-Governmente-Government as well as oversight committees lack of adequate levels of integrity.

4.7 E-Participation [EPAR]

Tunisia is one of the most technologically developed nations in the region and has good opportunities to implement e-Participation in the country. However, there has been little action taken in this direction recently. In general, government websites provide services in Arabic and French. The national portal and other high-level government sites demonstrate interactive functionality and well thought-out design. Successful national ICT initiatives correlate with increasing awareness of participation. Availability of polls and feedback options shows that the government takes the opinions of citizens into account during decision-making processes. However there is still a lack of detailed policy declarations and there are also accountability issues.

4.8 Open Government Data [OGD]

Tunisia joined the Open Government Partnership on 14 January 2014. The Tunisian government has embarked on the preparation of a national action plan (National OGP Action Plan) for the Open Government Partnership. They aim to implement a number of reforms in the area of governance and anti-corruption throughout 2015 and 2016 in collaboration with the various components of civil society. Currently, Tunisia has released the beta version of its open government data website, "data.gov.tn", following the wave of open government data portals around the world. The aim of this portal is to open data produced by various public structures, and facilitate its reuse. The portal development will be made according to a participatory approach that involves civil society representatives.

4.9 Cyber Security [CYB]

The national governance roadmap for cyber security in Tunisia is elaborated in the National Agency for Computer Security (ANSI). ANSI is responsible for the benchmarking and measuring cyber security development in Tunisia, and also responsible for providing educational and professional training programs for raising awareness with the general public, promoting cyber security courses in higher education and promoting certification of professionals in either the public or the private sectors. And Tunisia has an officially recognized National CIRT (Tunisian Computer Emergency Response Team - TunCERT).

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Tunisia has attempted to implement Cloud Computing for Public Sector. However, the evidence shows that it is not officially launched. Other emerging technologies for government agencies are still nullity in Estonia.

5 Some Highlights

Tunisia has the impressive point on e-Participation, Management Optimization, and National Portal. On 26 March, 2011, Decree-law 41 which regulates the public access to administrative document was enacted. In 2012, there was a conference to discuss 'open data and e-participation' at the initiative of the prime ministry. The main goal for the conference was the improvement of e-participation in the public and private sectors. By opening the electronic administration, the government expects to achieve active investment and e-business. About National portal, The Tunisian Government portal

www.tunisie.gov.tn serves as a government portal for the public administration, citizens, businesses, visitors and civil society. The portal only hosts online service information and provides links to relevant domains. The portal delivers most of its contents in its official language of Arabic, but also offers information in French.

However, the use of emerging technology and government CIO are the weak point of Tunisia. Currently, the Tunisian public administration at national and local levels does not appoint CIOs or equivalent positions within the legal framework. The director general for e-Government under the prime minister can be considered the CIO at the national level. And Tunisia put CIO model with empowered to implement a holistic vision on Post 2015 Agenda. Moreover, there is no evidence about the use of Cloud Computing for delivering public services. However, Tunisia government cloud initiative was started to discuss.
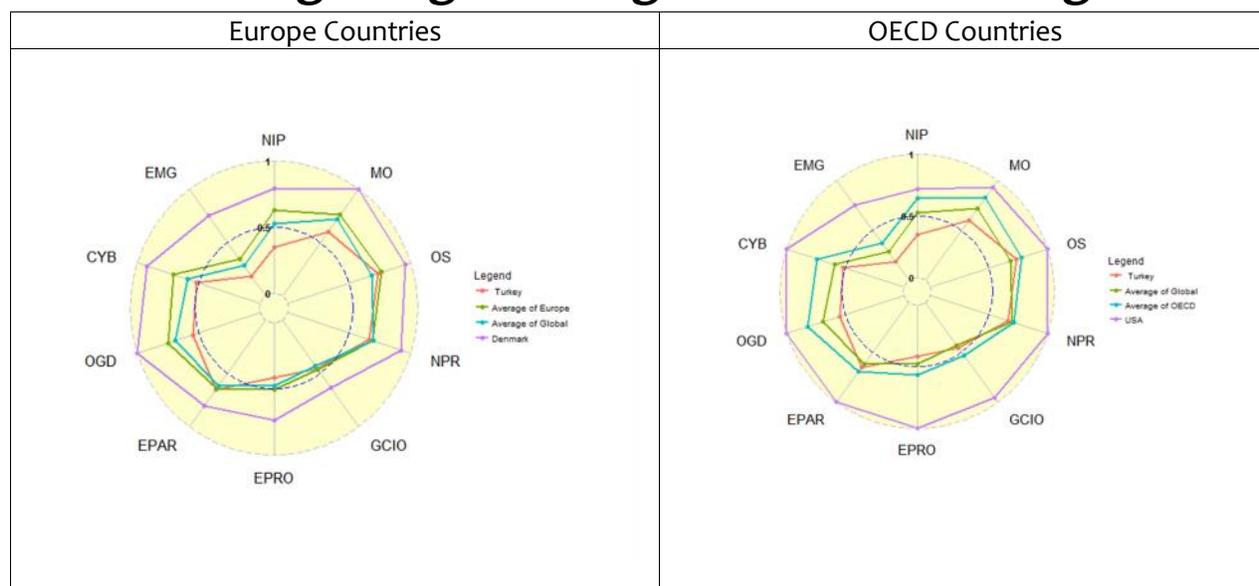
Turkey

1 General Information

Area: 783,562 km²
Population: 79,414,269
Government Type: republican parliamentary democracy
GDP: $20,500

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region
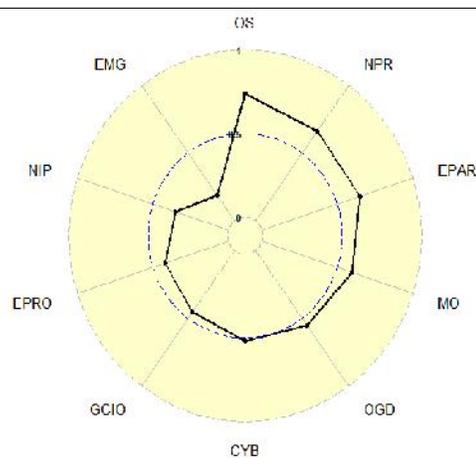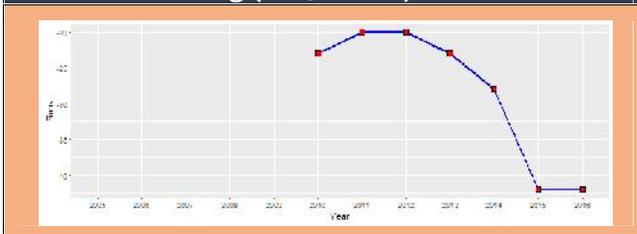
Europe Countries	OECD Countries

The performances on most of the indicators of Turkey have showed comparatively low level below average of Europe countries and OECD groups. Among all the ten indicators, Online Service has a good score and the only one exceeding average of Global.

3 E-Government Development

Turkey has launched its latest National e-Governmente-Government strategy and action plan for 2015-2019 by the Ministry of Transport, Maritime Affairs and Communication in 2015. For ICT initiative,

the Ministry of Development is responsible for the" Information society strategy and action plan". There is no official GCIO position in the government of Turkey, but three main agencies are participating in the e-Governmente-Government strategy/plan making and decision: the Ministry of Development; the Ministry of Transport, Maritime Affairs and Communications and e-Transformation Turkey Executive Committee. As the last one, the committee contains officers from different government agencies such as the Ministry of Development /Sciences/ Transportation/Education, etc. Also some members came from NGOs. According to the introduction, "The Committee is the highest level policy and decision-making, assessment and steering body in the information society Strategy implementation process."

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

According to ITU's report, approximately 51% of people in Turkey have used Internet in their daily life. About 11.7% are fixed-broadband users and the wireless-broadband users are 42.7%. Internet penetration in Turkey is in a comparatively low position compared to most of the evaluated countries.

4.2 Management Optimization [MO]

Turkey's national approach to e-Government can be characterized as centralized. The National e-Governmente-Government strategy and action plan for 2015-2019 has been published by the Ministry of Transport, Maritime Affairs and Communication, with a view to increase the pace of structural reforms and strengthens the fundamentals of the Turkish economy with a holistic approach.

4.3 Online Service [OS]

Regarding electronic transactions and identification, the Turkish government enacted several amendments to integrate e-Services into daily public life such as in e-commerce, e-signature and e-procurement legislation, chiefly within the last 5 years. For instance, there is legislation for regulating Internet broadcasts and combating crimes committed through such broadcasts. There are nine catalogued criminal offences, which can be committed through Internet publications .Nationwide implementation of electronic declarations by the Ministry of Finance is one of the first transactional level "e-Service" type services in Turkey. It was initially part of the Tax Office Automation Project (VEDOP) and is now at a third phase of development and aptly named VEDOP-3.Compared to other top priority services, current sophistication of daily life citizen services such as car registration, certification is still lacking certain quality and integration. However, there is an ongoing pilot project for e-ID card, which is expected to enable more integrated and transactional level daily life services.
Online information is provided by hospitals through their websites. Furthermore, online appointments are available at certain hospitals. Appointment for all hospitals through a central call center is possible. The Ministry of Health is also working on a one-stop-shop mechanism for online appointments.

4.4 National Portal [NPR]

The Turkish portal, www.turkiye.gov.tr, is integrated as the one stop service portal for citizens as well. It acts as a gateway for all e-Governmente-Government services and as an administrative resource. As of June 2011, the e-Government Gateway includes more than 260 services of 28 different agencies, as well as information about administrative procedures and links to the services provided directly through websites of each public agency. Although it has well-structured navigation and interface features, the website clearly lacks interactive features such as blogs, SNS, forums or polls.

On the other hand, the portal demonstrates secure transactions through mobile electronic signatures (via mobile devices) as well as non-mobile (PC or stationary device based) electronic signatures and password login. As a new functionality, users has access via has mobile handset with m-signature integration.

4.5 Government CIO [GCIO]

The Turkish public administration at national and local levels does not appoint CIOs or equally influential positions within the legal framework. Heads of IT directorates or IT departments have the main competencies of a CIO. However the quality of CIO competency varies from ministry to ministry. One ministry might have strong IT management and leadership while another ministry would have unclear objectives and an insignificant IT department. There is no whole of government perspective for contract management, strategic planning, or ICT implementation among ministries. At the local level, each municipality has an Information Technology Directorate position but with varying duties and degree of executive power. Thus, there is no clear intention to change administrative structure or attach well-defined CIO position to the public management. There is no CIO mandate the law and legislation as well as existence of the law creating the position of CIO in the Turkish Government.

4.6 E-Government Promotion [EPRO]

The national strategy for transitioning into an information society consists of social transformation, public modernization and a globally competitive IT sector. In light of this projection and taking into account tangible actions, public and private sector collaboration is growing. International and national e-Government related conferences have been organized by initiatives of both the private sector and academic institutions. At the local level there are inadequate initiatives to promote e-Services and to train citizens as compared to the interest in implementation. The central-local government collaboration required to realize an information society is lacking. Due to high percentage of school age population, there are significant initiatives and projects driven by ICT to improve the quality of education system and educational content, which helps to promote e-Governmente-Government in different levels with public-private-NGO engagement.

4.7 E-Participation [EPAR]

In general, government web sites demonstrate interactive functionality and good design, however in termss of participatory decision making processes or public discussions, national portal and other government web sites at national and local levels offer very limited public engagement. There are online channels besides dedicated phone services for both President and Prime Minister's Office to lodge a request or grievance. However, even with increased public awareness and enhanced web portals; there is not much evidence to show that the government takes the opinions of citizens in decision making processes. Taking into consideration young people, web 2.0 applications such as blogs or web forums are promising tools, which could encourage more use of e-Governmente-Government services.

4.8 Open Government Data [OGD]

The Turkish Statistical Institute posts government data regularly on its website, (http://www.turkstat.gov.tr/). These statistics come from a variety of government ministries, and can be downloaded in Excel format. The site hosts a large amount of data, particularly economic data, but it does not have advanced searching, charting, or organizational features.

4.9 Cyber Security [CYB]

In Turkey, there are several laws that are complement each other's, such as Law No. 5237, "Turkish Penal Code", Law No. 5271, "Code of Criminal Procedure", Law No. 5846, "Intellectual and Artistic

Works", Law No. 5809; "Electronic Communication Act", Law No. 5070, "Electronic Signature Act" and Law No. 5651, "Regulation of Publications on the Internet and Combating Crimes Committed by means of such Publication"

4.10 The use of Emerging ICT [EMG]

It is hardly to find information about emerging ICT launched in governmental sector in Turkey, general strategies around new technologies have not yet been organized by government. There have some private sectors talking about introducing IOT to Turkey such as the company IDC, but no official announcement of large plans about the upcoming visions within emerging ICT.

5 Some Highlights

The Turkey government has continued to complete and add amendments to integrate e-Services into daily public life, the e-Service portal (https://www.turkiye.gov.tr/) keeps upgraded various information to citizens, for specific service it can link users to corresponding agencies for e-tax, e-health, e-procedure, etc. The same as some well-prepared nations, Turkey has shown strength on "Management Optimization" and "Online Service". At the mean time the same with medium developed countries, the lack of systematic GCIO institute, less promotion on e-Governmente-Government implementation and open government initiative are the reasons for lagging behind. First of all, laying a good foundation as legal framework and sophisticated initiatives for special e-Governmente-Government objectives as well as institutional preparedness could benefit the development of e-Governmente-Government in Turkey to a great extent.

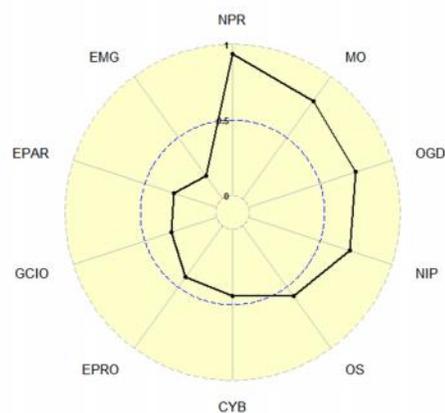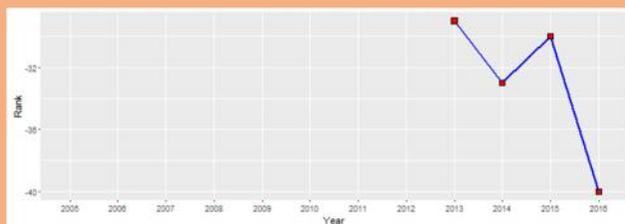# United Arab Emirates

1 General Information

Area: 83,600 sq km
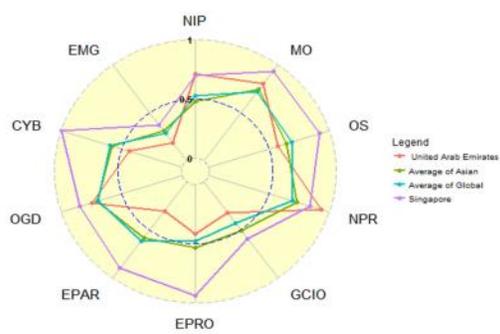**Population:** 5,779,760
Government Type: Federation of monarchies
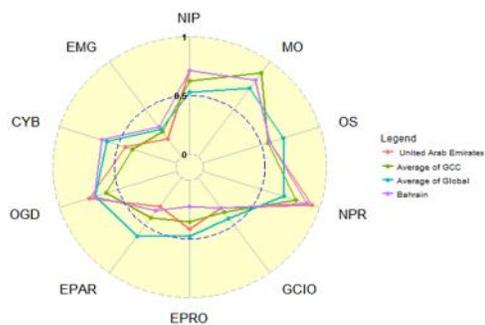**GDP:** $67,000
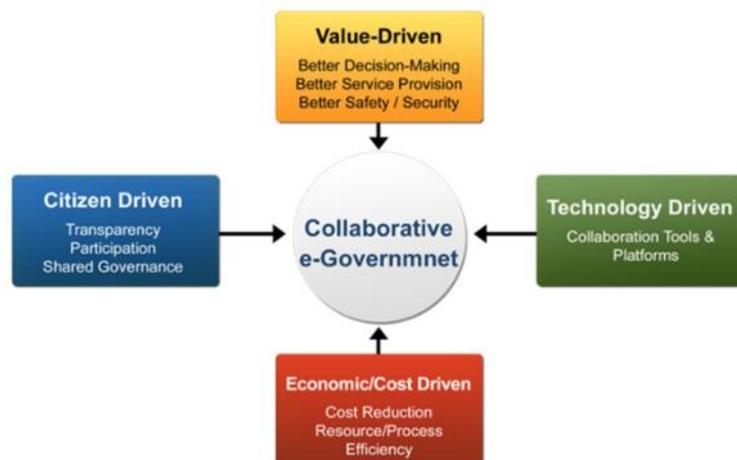**Historical Ranking (2006-20016)**

2 Positioning in a region

ASIAN Countries	Gulf Cooperation Council Countries

3 E-Government Development

The development of e-Government in UAE are to enhance the role of Federal Entities in devising effective regulations and integrated policies by efficient planning and enforcement, enhance effective coordination and cooperation among Federal Entities and Local Governments.

It focuses on delivering high-quality, customer-centric, and integrated government services, Invest in human resource capabilities and develops leaders.

Promote efficient resource management within Federal Entities and leverage dynamic partnerships. Pursue a culture of excellence through strategic thinking, continuous improvement in performance and superior results. Enhance transparency and good governance throughout the Federal Entities. Moreover, besides focusing on development of the government sector, it tackles other social, economic, and infrastructure issues, First-class Education System, World-Class Healthcare, Competitive Knowledge Economy, Safe Public and Fair Judiciary, Sustainable Environment and Infrastructure and Strong Global Standing.

The next phase for the UAE – which is seeking to establish itself as smart government leader in the region – will be to win users over to the latest apps and building m-government to help citizens have a better channel to apply for their services. The future is going to be about interconnecting government to government, and more collaboration on the government to citizen side.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

The UAE has a well-developed and technologically advanced telecommunications infrastructure and has high mobile telephone and Internet penetration. The Internet users are about 8,807,226 million in 2015 (93.6%) and the penetration is about 93.2%. Almost Internet connection is by broadband with the Telecommunication infrastructure developed very well. UAE has many advantages in implementing e-Government. In 2016 the broadband market in the UAE is one of the most advanced both regionally and globally. Prior to the fixed network sharing agreement introduced in late 2015, The UAE government at both federal and emirate level has been proactive in the digital economy and digital media sectors, with programs to encourage computer and Internet use.

4.2 Management Optimization [MO]

The UAE is investing heavily in adopting and implementing ICT in its government and private sectors. In the past, The UAE Federal e-Government Strategy 2012-2014 aims at building a world-class federal

e-Government that works with the federal government agencies to establish an effective and reliable information technology infrastructure and to provide electronic services to customers through multiple innovative electronic channels in line with the UAE Vision 2021 and the UAE Government Strategy 2012-2014.

The mission of Federal e-Government strategy is to innovative e-Government, committed to enhancing the competitiveness of the UAE and providing world-class multi-channel services based on the expectations of customers through a coherent and efficient government; taking advantage of an advanced digital infrastructure and highly qualified human resources within a smart framework of governance.

4.3 Online Service [OS]

E-Services in UAE are categorized for individuals, businesses, visitors, and governments. UAE government delivers e-Services through online and offline channels. Government.ae is the official portal of the UAE Government and it is the unified gateway to access e- Services provided by all the UAE government ministries and authorities in the UAE. Other channels, includes: customer service centers, phones, kiosks/public payment machines, banks, drive-thru service, post offices, Dubai metro stations, apps for smart gadgets, and the newest way is through robots and drones.

The Government provides users with transactional e-Payments, e-Health, e-Tax, e-Procurement by two-way interaction. With a huge number of e-Services are provided for citizen in UAE to avail a variety of services without leaving their home or office spaces. The portal has an advanced search facility to help people look for the services they want to access. The portal also contains a section on alternate means for accessing government services.

4.4 National Portal [NPR]

The national portal of the UAE Government is www.government.ae. It is part of the federal e-Government program and a major milestone in the process of e-Transformation in the UAE. It is one-stop services, it brings all e-Services provided by the UAE federal and local government bodies under one umbrella.

The national portal is well design, easy to use and very useful for everyone. It is available in English and Arabic, the national portal contains all necessary information for individuals, businesses, visitors, and government. It is a single entry-point for users to access the different federal and local government e-Services. The portal also facilitates to boost communication between the customers and the government representatives and e-Participation through forums, blogs, surveys, polls and social media.

4.5 Government CIO [GCIO]

In the UAE, the CIO positions are appointed at all town and city. A Government CIO office is established at national level, event that in each city they have a portal and providing e-Services to citizens. Laws on information technology and e-commerce also have been found but there is no information about the CIO laws, Government CIO position and office are indicated and established at the national level as well as sub-national level and government agencies.

There is no CIO association in UAE but they have many courses training information technology and CIO in University, there are many jobs related to CIO but almost from private sectors.

4.6 E-Government Promotion [EPRO]

Promoting the development of e-Government strategy is also aimed to promote and implement e-Governmente-Government services are secure and correct route. However, during one year of evaluation Waseda ranking could not find any new strategy for 2015, 2016. Therefore, it reduces UAE's score on this indicator and also in overall ranking.

There is no information on government agencies and private entities involved at local government level. Furthermore, there is no information on a think-tank between government and PPP.

4.7 E-Participation [EPAR]

The UAE e-Government believes in the importance of e-Participation and enabling its customers to take part in the decision-making process. The government portal clearly encourages citizens and customers to participate in government decision making process including policies and initiatives by having their say. The "Contact Government" section in the portal is dedicated to hear their say by providing many important tools, including web 2.0 tools and online direct communication with the customer. The UAE Government has launched its new federal portal, redesigned to offer many e-Participation channels, include advanced practices such as Open Data, and be a better unified gateway to access many online services provided by the UAE Government. The UAE Government has engaged multiple platforms like forums, blogs, chats, surveys, polls and social media tools like Facebook, Twitter, Flickr and YouTube to reach to the general public and engage them in active communication with the government with regard to their opinions and experiences on government services, policies.

Especially, in UAE the ranking shows there is evidence to proof that the government takes the opinions of citizens in the decision making process, and there is evidence to proof that the government inform the citizens on which decisions made based on citizens input.

4.8 Open Government Data [OGD]

http://bayanat.ae/ is an open data portal for UAE. It provides official statistics about UAE as well as many advanced features for analyzing, visualizing, and reporting statistical data over time, it also allows preparing presentation-ready for users. Individuals can select Data Catalogue to get some customized filtered or detailed data on UAE level or even emirate level for direct use and comparability. There are a lot of data can be opened, it covers demographics, education, foreign trade, health, households, labor, population, and socio-Economic datasets.

4.9 Cyber Security [CYB]

In UAE, the Telecommunications Regulatory Authority (TRA)'s Computer Emergency Readiness Team (AECert) recently underscored the role of cyber security in ensuring public safety amid rapid developments in the ICT sector and growing incidents of harmful cyber-attacks. AECert also emphasized the need to raise more public awareness and educate society about information security, the attack risks and prevention methods.

In 2014, The National Electronic Security Authority, NESA, has officially announced the publication of a range of key strategies, policies and standards to align and direct national cyber-security efforts in UAE. NESA is a federal authority responsible for developing, supervising and monitoring the implementation of U.A.E. cyber-security strategies, policies and standards.

4.10 The use of Emerging ICT [EMG]

Even UAE is developed country in ICT, but the use of emerging ICT is still in a mature stage. There is no information could be found on evidence that government agency has used Cloud Computing and provide the cloud service from SaaS to IaaS, and also there is no evidence that government agency has used Big Data.
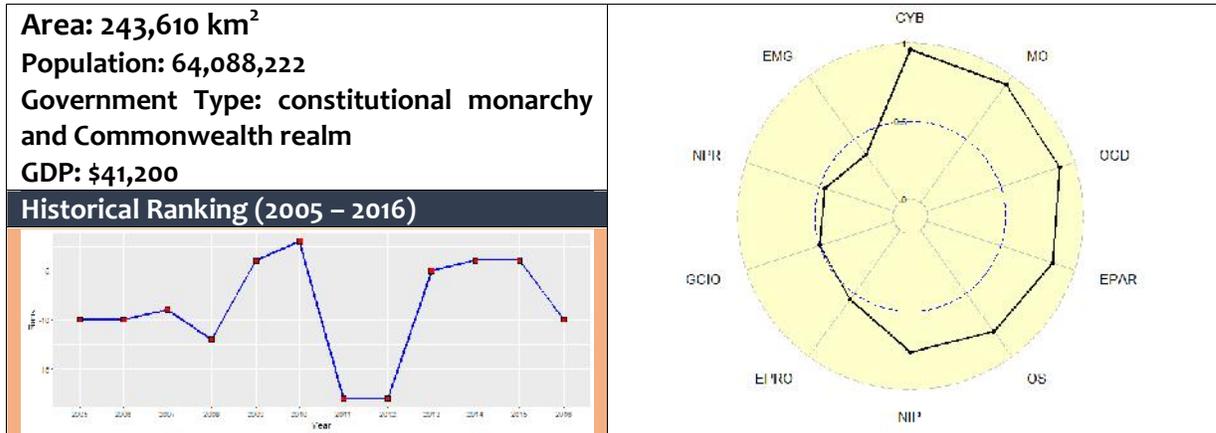
5 Some Highlights

In the UAE, the CIO positions are appointed at all town and city. A Government CIO office is established at national level, event that in each city they have a portal and providing e-Services to citizens. Laws on information technology and e-commerce also have been found but there is no information about the CIO laws, Government CIO position and office are indicated and established at the national level as well as sub-national level and government agencies.
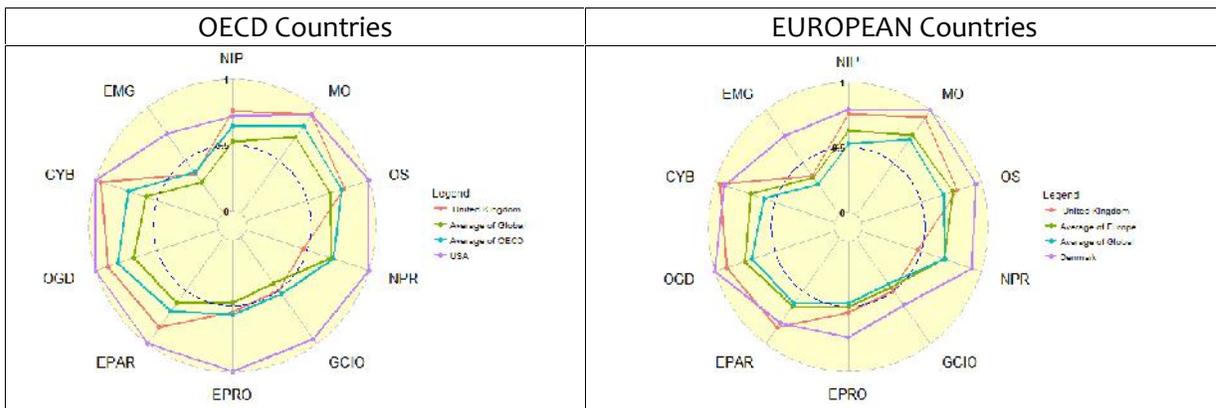
The official portal of the UAE government is the unified gateway for all information and services provided to the public. It was divided into four categories: services for individuals, services for businesses, services for visitors and services for all. The Government provides users with transactional e-Payments, e-Health, Employment and Labor, Religious Affairs and Society as well as Business activities allow two-way interaction between the user and government.

United Kingdom

1   General Information

Area: 243,610 km²
Population: 64,088,222
Government Type: constitutional monarchy and Commonwealth realm
GDP: $41,200

Historical Ranking (2005 – 2016)

2   Positioning in a global organization and a region

OECD Countries	EUROPEAN Countries

UK is one of the leaders in e-Governmente-Government among OECD and European countries. The UK government has scored greater results in all indicators than the average of OECD and European. Only National Portal shows a lower score in comparing with OECD and European's mean. The UK also shared the top position with the USA and Denmark in Network Infrastructure Readiness, Management Optimization and Cyber Security.

3   E-Government Development

The UK has a long history of e-Government development. The Government Digital Strategy released
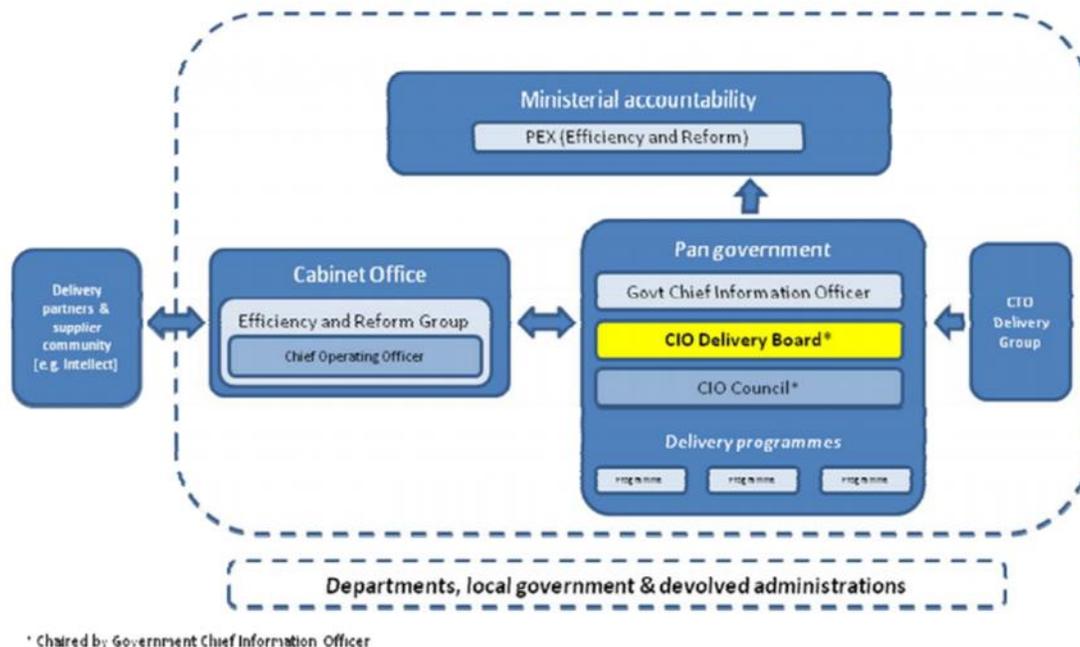

Figure 9: E-governance structure.

Source: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/85968/uk-government-government-ict-strategy_0.pdf

in 2011, updated in 2013 by the Cabinet Office, sets out how the government will become digital by default. April 2014, with the launching of new projects which were funded £1.5 million (about €1.8 million) from the Release of Data fund, the government strived a huge step to unlock data from public bodies and increase transparency (European Union, 2014).

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

According to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU), Internet users in UK account for 91.6% of total population. About 37.4% have fixed-broadband subscriptions, and 98.7% of the population has a wireless broadband connection.

4.2 Management Optimization [MO]

UK has launched its Government ICT Strategy since 2011 focusing on several critical targets such as reducing waste and project failure, and stimulating economic growth; creating a common ICT infrastructure; using ICT to enable and deliver change; and strengthening governance. In terms of digital government, the Government Digital Strategy was published by the Cabinet in 2012, with the

ultimate goal focusing on "how government will redesign its digital services so well that people prefer to use them".

To achieve those targets, the UK government has concentrated on developing the UK government ICT reference architecture (UKRA) to provide interoperable platform in which ICT solutions can be shared and reused across government agencies. The architecture consists of the Business Reference Model, Information Reference Model, Application Reference Model and Technical Reference Model. In addition, a new model of Government Shared Services was introduced as one of the efforts to ensure cost reduction target among government agencies.

4.3 Online Service [OS]

The score for Online Service is based on five pillars, which are: e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service. These services were assessed based on three major factors such as Level of Complexity, Level of Security, and Level of Convenience. Table 1 lists the online services and its URL Address.

With the Digital Service Standard came into force, UK has obtained a very high level on digital service, reflected by most of services' complexity are provided at the highest level (transactional). All services are integrated into a single gateway with adequate security mechanisms were fully implemented ranging from basic authentication as Password protection to complex methods like digital certificate or secured socket layer. Of the five pillars, Tax and Customs are the most comprehensive services, while Procurement is still at its beta testing period for the new application so-called ContractFinder, which was launched in February 2015. For Health, NHS (http://www.nhs.uk/) is the biggest provider in e-Health services, with lots of transactional services such as My Vision Online or Patient Access.

In termss of convenience level, the results from Google PageSpeed (https://developers.google.com/speed/pagespeed/insights) denote a reasonable page speed on all portals. Proper guidance and customer supports are also provided for end users.

Table 29 List of Online Services

Online Service	URL
e-Procurement	https://www.contractsfinder.service.gov.uk/
e-Tax	https://www.tax.service.gov.uk/
e-Customs	https://online.hmrc.gov.uk
e-Health	http://www.nhs.uk/
One-Stop Service	https://www.gov.uk

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. The official portal of the UK Government is https://www.gov.uk/ which replaced for the previous version direct.gov.uk by October 2012. The new version has been introduced as the best place to find government services and information in simpler, faster and clearer manner. The website of 24 government ministerial departments and 331 other public agencies are being gathered at gov.uk. By doing this, citizens, business and government officers are believed to easily find public services in one place. However, lacking some country's information such as demographic, culture

resulted in a medium score in NPR for UK.   Regarding technical aspect, the result of Google PageSpeed™ Insight showed that the website performs quite well for different devices.

4.5 Government CIO [GCIO]

UK government established the Government CIO Council since 2010 to empower the leadership in the area of e-Governmente-Government development. The council was leaded by Cabinet Office and was shaped by gathering all CIOs from public sectors at all levels with the mission to "creating and delivering a government-wide CIO agenda to support the transformation of government and to build capacity and capability in IT-enabled business change ".

However, since 2013, UK government has abandoned the role of cross-departmental chief information officer. The responsibility for governance of technology projects was moved into the Government Digital Service. The reason behind this action, according to Mike Bracken, the executive director of the Government Digital Service is to focus more on driving business performance based on meeting user needs.

4.6 E-Government Promotion [EPRO]

There are not much evidences found in UK's e-Governmente-Government promotion programs, due to the country has reached a high position in digital government development and citizens are quite familiar with e-Governmente-Government initiatives.

Regarding support mechanism, UK Government has a comprehensive legislation framework and strategies for e-Governmente-Government development from central to local governments. There are reports on digital government progress published every 3 months, showing what government has achieved against the strategy's objectives.

4.7 E-Government Participation [EPAR]

UK citizens frequently interact with their government and proactively participate into government's decision making process. This is due to a huge portion of populations (almost 90%) are online users and there is a clear opportunity for government to deliver digital services to them. All information related to government structure, legislation, policy and budget are open to citizens. UK government agencies also utilized the strength of social media to reach their citizens instantly, allowing them to contribute their voices and ideas to the government's policies. Statistics shows that in the past 12 months there have been 636 completed consultations where the government takes into consideration all responses and opinions of citizens into decision making process.

4.8 Open Government Data [OGD]

April 2014, with the launching of new projects which were funded £1.5 million (about €1.8 million) from the Release of Data fund, the UK government strived a huge step to unlock data from public bodies and increase transparency (European Union, 2014). With the presence of the Open Government Partnership UK National Action Plan 2013 to 2015 setting out a series of commitments, the UK government is making progress to improve transparency, participation and accountability.

At the local government level, there was a so-called the Local Authority (LA) Incentive Scheme running until March 2015 with the purpose providing monetary encouragements for councils to publish data on specific categories in standard tabular formats. This project was allocated funding

(£721,360) from the Cabinet Office's Release of Data Fund, focusing on the priorities of the UK Open Data community.

4.9 Cyber Security [CYB]

UK has ratified several laws related to cybersecurity. Some of them are as follow:

- Data Protection Act (1998)
- The Privacy and Electronic Communications (EC Directive) Regulations 2003
- Electronic Communications Act (2000)
- Electronic Commerce Regulations (2002)

In five years, from 2011 to 2016, the UK Government has financed a National Cyber Security Programme of £860 million to deliver the 2011 National Cyber Security Strategy[57]. Some activities included in the program: the launch of "10 Steps to Cyber Security" in 2015 together with new guidance for businesses: "Common Cyber Attacks: Reducing the Impact"; "Think Cyber – Think Resilience" seminars for around 700 policy makers and practitioners from local authorities; the Foreign Secretary publicly confirmed the Centre for Cyber Assessment (CCA) to provide assessments of cyber threats and vulnerabilities to policymakers; provide briefing and training to public sector staff in information security roles; and so on.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). The UK has strong capabilities in high technology manufacturing, telecommunications and digital services which could place the country among the leaders in reaping benefits from using emerging technologies. The UK Government has established the private Government Cloud Computing Infrastructure called G-Cloud which includes Infrastructure-as-a-Service (IaaS), Middleware/Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS). For IoT, the UK government has published a review[58], considering this technology as the way to transform citizens' life and deliver great benefits to economy.

5 Some Highlights

Most of indicators are at very high score which reflects a well-developed e-Governmente-Government situation. The main focus of digital government strategy is on how to improve users' experience with online services and reduce digital divide.

Being one of the countries with a high level of e-Governmente-Government development, the UK government actually did not need to put much efforts on broadcasting e-Governmente-Government initiatives. Instead, a bunch of policies and guidelines were developed to uniform all e-Government initiatives such as: Guidelines for UK Government Websites, Quality Framework for UK Government

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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/516331/UK_Cyber_Security_Strategy_Annual_Report_2016.pdf

58 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/409774/14-1230-Internet-of-things-review.pdf

Website Design, e-Government Metadata Standard Version 3.0, e–Government Interoperability Framework and so on.

The UK government is aiming to enhance public services quality by issuing the Digital by Default Service Standard which mandates all government agencies to follow when developing new digital services. This standard covering 5 different stages of service development: discovery, alpha, beta, live and retirement. As the result the country has reached a very high rank on online service delivery indicator.

Having a high level of capabilities in technology, infrastructure and telecommunication, the UK Government has a great opportunity to reap the benefits from emerging technologies such as Big Data or Internet of Things to transform the national economy and citizens' life.
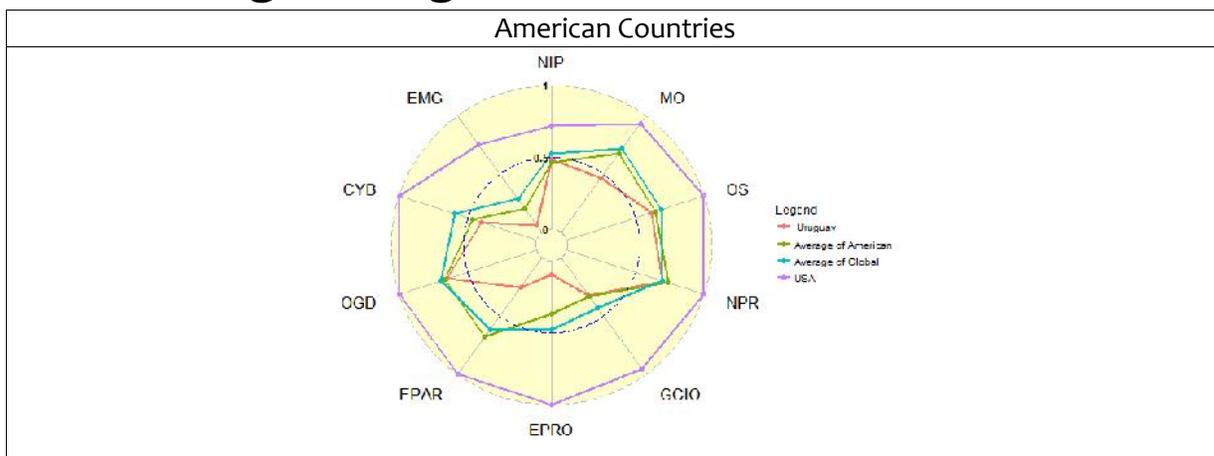
Uruguay

1 General Information

Area: 176,215 km² [59]

Population: 3,341,893 [60]

Government Type: Presidential Republic [61]

GDP: $ 21,800 [62]

Historical Ranking (2005 – 2016)

2 Positioning in a region
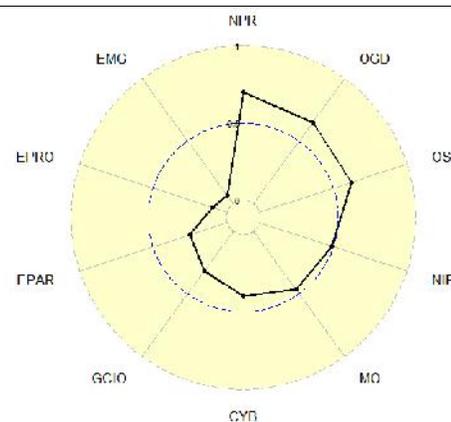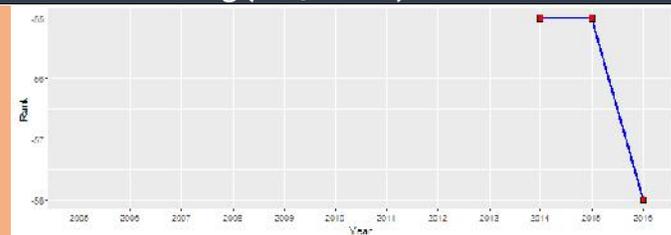
American Countries

Among American Countries, Uruguay has a better score than the average score of American countries in Open Government Data. As shown on the above picture, Uruguay is very low on the e-Government Promotion, e-Participation, and the use of the Emerging ICT. However, despite the lack

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[59] https://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html
[60] https://www.cia.gov/library/publications/the-world-factbook/rankorder/2119rank.html
[61] https://www.cia.gov/library/publications/resources/the-world-factbook/fields/2128.html
[62] https://www.cia.gov/library/publications/the-world-factbook/rankorder/2147rank.html

basic infrastructure, Uruguay has been trying to take the benefit of National Portal for creating demands of citizen for more advance e-Governmente-Government services. This also applies to the Online Service which is on the average of American countries.

3 E-Government Development

e-Government in Uruguay is formally led by Agency for the Development of Government Electronic Management and Information Society and Knowledge (AGESIC). AGESIC has mandate to generate, plan and implement e-Governmente-Government projects with emphasis on improvement of public service delivery.
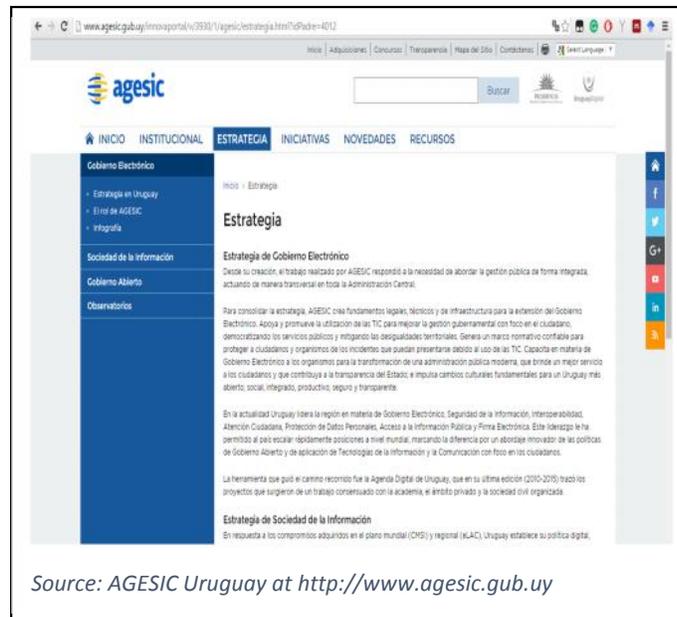
AGESIC hold a strategic role in e-Government in Uruguay. Not only technical aspect but also providing government office with assistance on financial aspects. In addition to that, President has appointed Director of Agency for the Development of Government Electronic Management and Information Society and Knowledge (AGESIC) to act as a Government CIO by Presidential Decree. There is a strong leadership for e-Government development in Uruguay.

Source: AGESIC Uruguay at http://www.agesic.gub.uy

In all, Uruguay has put all e-Government trend into their e-Government Strategic Plan. The strategic plan is developed under "Program to Support e-Government Management". Not only does the strategy has targeted the citizens' participation but also how to create interoperability system among government institution.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 61.5% of people in Uruguay were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 24.6% have fixed-broadband subscriptions, and 59.8% of the population has a wired broadband connection.

4.2 Management Optimization [MO]

In 2010, Uruguay has launched the Uruguay Digital Agenda 2011-2015. The Digital Agenda contains Strategic Initiatives, Action Areas, and Objectives. The Agenda has set clearly the responsibility of each government agencies; central and local government. There are Action Areas that embody the Digital Uruguay. These are Access, Education, e-Government, Productivity, Health, and Environment.

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Among these five Online Service, e- Health is the only Online Service in Uruguay that cannot be investigated during the period of survey.

In terms of complexity level, most of investigating Online Service in Uruguay has reach a transactional in which user can start the transaction from applying to receiving the service through the portal. All Online Service have implemented security measures such as SSL, Site Authentication, and Password Protection for obtaining the services.

To measure the level of convenience, the third party application result has showed that all portal is above the average in terms of speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. In addition to that, all clickable objects on the portal work as they should do.

Online Service	URL
e-Procurement	https://www.comprasestatales.gub.uy
e-Tax	https://www.efactura.dgi.gub.uy/
e-Customs	https://vuce.gub.uy
e-Health	N/A
One-Stop Service	http://tramites.gub.uy

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of Uruguay (http://portal.gub.uy/) contains proper information for local citizens and foreigners. Information about Uruguay is available on the portal. User can find information about demographic, and government. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is above average both from PC and from Mobile Device. However, the portal does not provide the user with some functionalities such as news, inquiry form, and Social Network integration.

4.5 Government CIO [GCIO]

Uruguay government established the Agency for e-Government Development (AGESIC). AGESIC take a significant role for providing a sponsorship and leadership on e-Government. AGESIC is considered as a GCIO for nation-wide. The role of head of AGESIC is similar to the role of a CIO. Unlike the strong Organization of GCIO, there is no adequate evidence related to GCIO activities; forum, development program, and formal regulation.

4.6 E-Government Promotion [EPRO]

e-Government Promotion is a part of AGESIC activities. Funding for e-Government Promotion is provided by AGESIC and included in AGESIC Budget. However, there is no activities regarding e-Government Promotion in Uruguay. This situation is similar to the one in any developed countries where the IT Culture has been embraced in the society. However, Uruguay is not considered as a

developed country, besides, Uruguay is still struggling to realize Digital Uruguay. Moreover, without any efforts to increase the citizen awareness on e-Government, the huge investment in developing e-Government in Uruguay could become meaningless where citizens do not use the e-Services simply because they do not know how to use it and they do not know that the e-Service does exist

4.7 E-Participation [EPAR]

E-Participation in Uruguay is relatively low, compared to other indicators. There is no evidence about how the government proceed the citizens' comment.

4.8 Open Government Data [OGD]
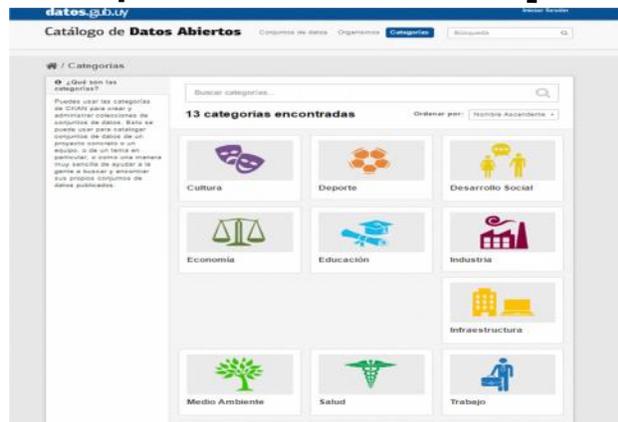
In 2000, Uruguay has launched Public Information Act to participate in the Freedom of Information Act movement around the world. To strengthen the implementation of these act, Uruguay has established Open Data Portal (https://www.catalogodatos.gub.uy/group) to provide public with accessible government information. AGESIC is responsible to keep the information always current.

4.9 Cyber Security [CYB]

Uruguay has ratified several laws and regulations related to cybersecurity. Some of them are as follow:

- Ley No. 18331 about Personal Data Protection
- Ley No. 18331 about Personal Data Protection
- Ley No. 13.362, article 73
- Ley No. 13.362, article 73
- Chapter 197 Anti-Terrorism (Financial and Other Measures) Act
- Chapter 194 Computer Misuse Act
- Chapter 153 Official Secrets Act
- Chapter 108 Evidence Act
- Guidance for Information Security on The Internet

In addition to these laws, AGESIC is the only agency responsible for Cybersecurity in Uruguay. AGESIC, into some extents, collaborate with Uruguay CERT (CERTuy).

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). Uruguay has plan to use Cloud Computing for Government. This plan has not implemented yet. Other emerging technologies are still not common and there is no evidence to prove that Uruguay implemented such technologies.

5 Some Highlights

Among ten indicators in the current ranking, the National Portal, Open Government Data and Online Service are the top three indicators in Uruguay. National Portal Uruguay contains useful information for local and also foreigners such as country information, tourism, and link to available e-Services.

Uruguay government has put Open Data as one of priority initiatives in their agenda. As one part of Open Data initiatives, government set an API standard so that other parties are able to use the single data for many purposes.

There are still so many areas in e-Governmente-Government development in Uruguay. Any initiatives and programs related to e-Government Promotion and Public engagement are some indicators that are difficult to find.
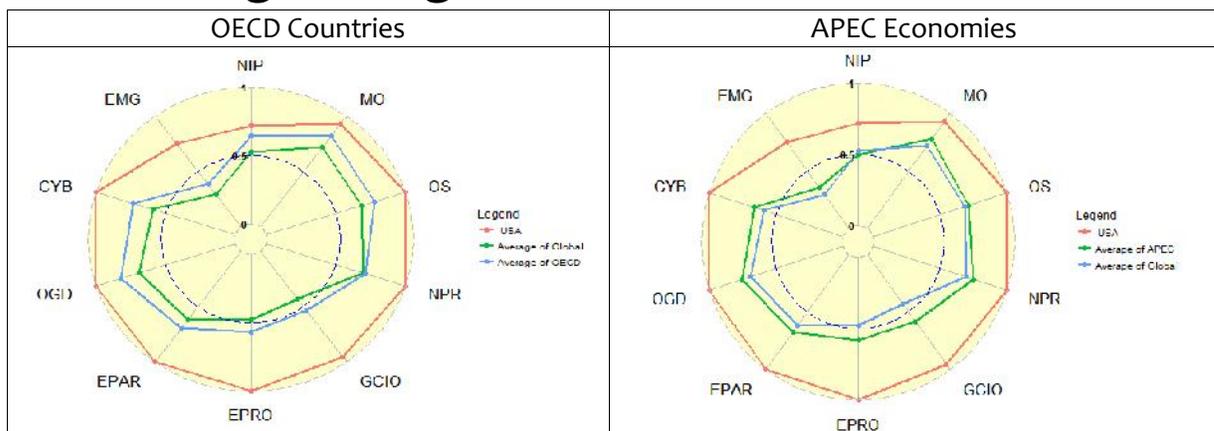
United States of America

1 General Information

Area: 9,826,675 km² [63]
Population: 321,368,864 [64]
Government Type: Federal Presidential Republic[65]
GDP: $56,300 [66]
Historical Ranking (2006-2016):

2 Positioning in a region

OECD Countries	APEC Economies
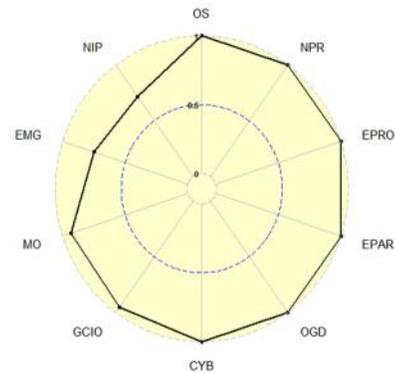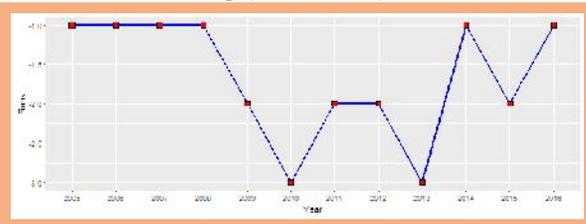
3 E-Government Development

The U.S. has continued to improve its open-data and online service offerings. Healthcare.gov, for example, which was infamously flawed at launch, operated much more smoothly in 2015. Data.gov, analytics.usa.gov, Census.gov and other open data sites continued to become more user-friendly.

ICT continues to provide new and innovative ways for U.S. citizens to interact, get involved and become empowered. Public participation enhances the government's effectiveness by improving the

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[63] https://www.cia.gov/library/publications/the-world-factbook/rankorder/2147rank.html
[64] https://www.cia.gov/library/publications/the-world-factbook/rankorder/2119rank.html
[65] https://www.cia.gov/library/publications/resources/the-world-factbook/fields/2128.html
[66] https://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html

quality of its decisions through collaboration. Innovative tools can be used to create unprecedented openness in the Federal Government through increased citizen participation to make this type of collaboration a reality.

On the U.S. national portal, www.usa.gov, citizens can use many online services including e-tax, applying for a driving license, filing a complaint, finding a local doctor, applying for a passport or getting travel advice. The portal's design makes it easy for citizens to find both broad, common information, as well as specific, personalized services.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Internet access in the United States is largely provided by the private sector and is available in a variety of forms, using a variety of technologies, at a wide range of speeds and costs. By 2004, three quarters of Americans had Internet access at home. The United States has over 67.7 million people subscribed to the top broadband speed.

In the U.S., around 146.7 million people use social networking services at least monthly, representing nearly 60% of Internet users. Some changes regarding across-the-board-improvements on key metrics underlying user performance have been identified including three primary improvements in residential broadband service.

4.2 Management Optimization [MO]

E-Government objectives are focused on high-priority areas for improving the internal operations and management. Most objectives are intended to help Interior better execute administrative and supporting functions that exist across entities. These functions, while in many cases part of the "back office", play critical roles in accomplishing the missions for which Interior is responsible. They are also crosscutting and have impacts across the Department and all mission-related activities.

The usage of ICT in the U.S. is improving day by day in internal processes and the government's computerization efforts and the level of ICT integration has been very good in the last couple of years. Standardization of service procedures and information systems in order to achieve internal effectiveness and efficiency of governmental operations can be constrained by many reasons.

4.3 Online Service [OS]

In this indicator we examine the laws of American cyber security and e-Transaction as well as e-Services that the U.S. government provides to citizens and enterprises. Available e-Services include an e-Tender system, e-Tax systems, e-Voting, e-Payment system, Social Security services, Civil Registration services and e-Health systems.

To enhance the security and resiliency of the cyber and communications infrastructure of the United States, a new Cybersecurity Act was issued in 2012 and it focused on protecting ICT critical infrastructure, Information sharing, governmental and private networks. The current statutes for required interfaces will be enhanced and revised. The Electronic Transactions and Information Law which was enacted in the U.S. regulates all matters pertaining to information and transactions in all

electronic forms. The Law regulates cyber activity in the U.S. It provides a general outline, and requires further elaboration through government regulations.

4.4 National Portal [NPR]

www.usa.gov is the U.S. Government's Web portal for citizens. It presents a wide range of information resources and online services from various government sources, accessible from a single point. It is also known as the National Portal of the USA and is a gateway to improve the communication experience between the government and the public. Moreover, it provides information that helps the public to better understand government structure. The well-organized portal serves as a platform that assists the public to find desired information. To improve users' browsing experience, the portal also allows users to create government accounts that allow each individual user to customize the portal as they desire. The website contains accessibility features, a live chat platform, and the chat hours operation services are conveniently available every weekday except holidays. This provides a one-stop-shop for all government information and services. It comprehensively lists all public services, forms, tools and transactions that the government provides in a user-friendly manner.

4.5 Government CIO [GCIO]

The U.S. CIO position was established within the White House's Office of Management and Budget (OMB) to provide leadership and oversight for IT spending throughout the Federal Government. In addition, each Federal agency has its own CIO, as established by the Clinger-Cohen Act.

The CIO in government is a very important indicator in the world e-Government ranking, not to mention its importance in improving American e-Governmente-Government platforms. Tony Scott has served as the U.S. GCIO since February of 2015, and has focused on modernizing American efforts, especially regarding cybersecurity and information policy.

4.6 E-Government Promotion [EPRO]

The digital interactions between the U.S. government, citizens, businesses, employees and other governments improved from couple of years ago. This clearly results from the efforts to develop and promote electronic Government services and processes by the establishment of an Administrator Office of Electronic Government within the Office of Management and Budget. The promotion of the use of the Internet and other information technologies to increase opportunities for citizens to participate with the U.S. Government and promoting interagency collaboration providing electronic Government services, where these collaborations would improve the services provided to citizens by integrating related functions and the use of internal electronic Government processes.

To provide effective leadership of the Federal Government, there have been efforts to develop and promote electronic Government services and processes by establishing an Administrator Office of Electronic Government within the Office of Management and Budget. e-Government promotion has reduced the cost and burden for businesses and government entities

4.7 E-Participation [EPAR]

ICT provides innovative ways for American citizens to interact, get involved and become empowered and these relate to more traditional approaches. Public participation enhances the government's

effectiveness by improving the quality of its decisions through collaboration. Innovative tools can be used to create unprecedented openness in the Federal Government through increased citizen participation. This program includes: Citizen Services Dashboard, Open Government Dialogue Platform, Challenge.gov, and the Citizen Engagement Platform.

The U.S. enhanced its e-Government in this indicator. In the national portal, citizens can use many online services which include paying taxes, submitting tax returns, applying for a driving license, making a complaint, applying for a passport or getting a travel advance. It is a very convenient portal for citizens.

4.8 Open Government Data [OGD]

As a priority Open Government Initiative for President Obama's administration, Data.gov increases the ability of the public to easily find, download, and use datasets that are generated and held by the Federal Government. Data.gov provides descriptions of Federal datasets (metadata), information about how to access the datasets, and tools that leverage government datasets. The data catalogs will continue to grow as datasets are added. Federal, Executive Branch data are included in the first version of Data.gov. The site has undergone continuous improvements since then.

4.9 The use of Emerging ICT [EMG]

The United States government believes the security of computer systems is important to the world for two reasons. The increased role of Information Technology (IT) and the growth of the e-Commerce sector, have made cybersecurity essential to the economy. Also, cybersecurity is vital to the operation of safety critical systems, such as emergency response, and to the protection of infrastructure systems, such as the national power grid. Based on then-DHS Secretary Janet Napolitano's testimony to the Senate in 2012, in 2011 alone, the DHS U.S. Computer Emergency Readiness Team (US-CERT) received more than 100,000 incident reports, and released more than 5,000 actionable cybersecurity alerts and information products. Twitter, the Wall Street Journal, New York Times, and the Department of Energy and many other prominent companies have reported that their systems had been breached. Furthermore, classified government data has been leaked to the press and the public in several high-profile cases. Current efforts are being made to secure sensitive data to prevent future breaches.

5 Some Highlights

Notable highlights include the U.S. Citizenship and Immigration Services (USCIS) portal, which allows applicants to check their immigration status instantly along with typical wait times, and the Open Government Initiative. The USCIS portal is consistently rated among the most accessed websites in the U.S. government, according to the official Open Analytics counter.

On the local government front, sharing best practices can particularly improve the provision of benefits for low-income individuals by state governments. Millions of federal dollars are spent annually on state or local IT that supports these services, and the Advance Planning Document (APD) process allows states to obtain approval for the portion of the costs of acquiring new online systems that the federal government contributes. The current system contains important mechanisms to hold states accountable for making smart choices about which systems are developed, but it may also encourage siloed systems, which might add greater costs for later integration as well as biasing

states against migrating to solutions that could be more cost-effective in the long term. To address this gap, The Office of Management and Budget (OMB) should work with relevant agencies to modernize the APD process to encourage governments to develop enterprise-wide solutions.

Though more than 75% of Internet users have visited a U.S. government website, reports consistently show that public sector websites lag the private sector. Additionally, the government has failed to meaningfully integrate lessons learned from best practices of leading online government services into its operations. Because public sector websites lag the private sector in usability and design, the Federal Web Managers Council should benchmark the design and usability of government websites against leading industry best practices. The Office of Management Budget should continually recommend specific improvements that agencies should make, highlight best practices in its annual E-Government Report to Congress and deploy the E-Government Fund to help replicate best practices across the federal government. The U.S. government has already made some steps in this direction, but more should be done in the coming years.
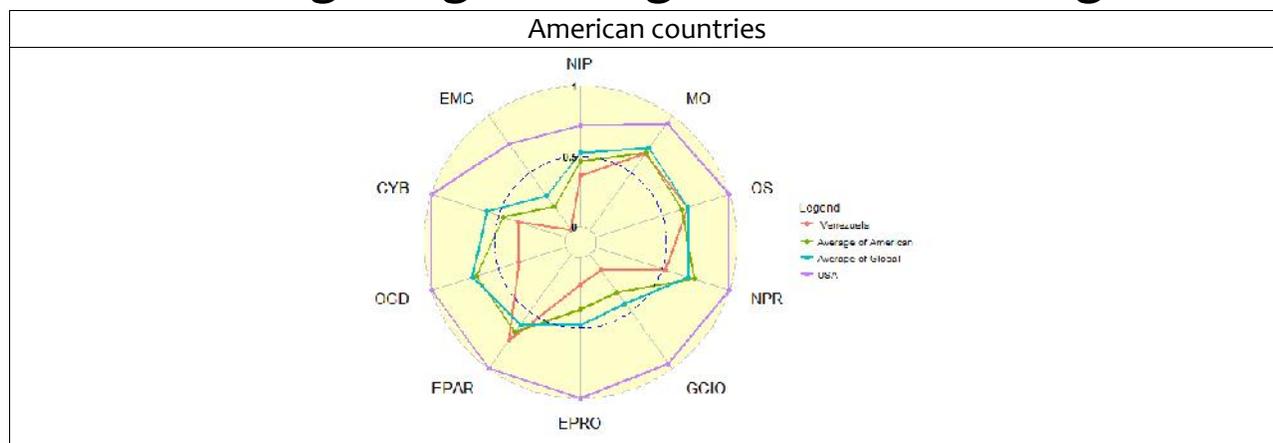
Venezuela

1 General Information

Area: 912,050 km^2 [67]
Population: 29,275,460 [1]
Government Type: Federal Republic [1]
GDP: $16,100 [1]

Historical Ranking (2005 – 2016)

2 Positioning in a global organization and a region
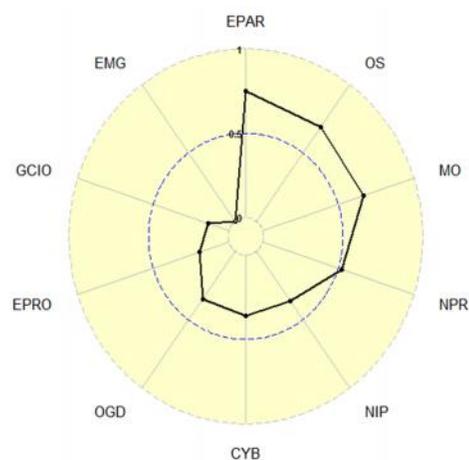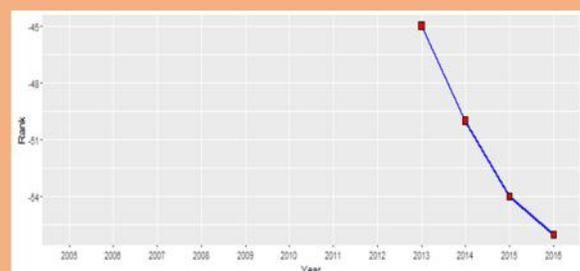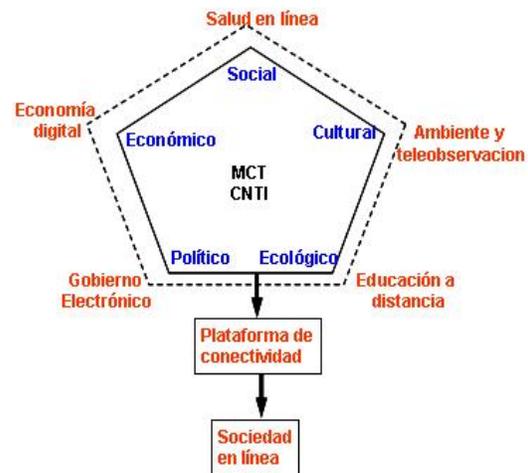
American countries

Among America Countries, an only e-Participation (EPAR) indicator is above with the average score of America region. And Venezuela is placed below USA, the best country in America region.

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3 E-Government Development

Since 1999, Venezuela has a Ministry of Science and Technology (MCT) which, in 2009 and through the merger of various Venezuelan ministries, was renamed the Ministry of Popular Power for Science, Technology and Industry (MCTI). The MCTI is responsible for forming and maintaining the National System of Science, Technology and Innovation (SNCTI) to promote processes of research, innovation, production and transfer of knowledge, with relevance to fundamental problems and demands affecting Venezuelan society. Currently, MCTI suppurated to become the Ministry of Popular Power for Communication and Information (MINCI) and merged to the Ministry of Popular Power for University, Science and Technology Education

Structure of Venezuela ICT Plan

(MPPEUCT). Venezuela's Government has an information technology national plan and Telecommunication plan, and the last version is ICT Plan 2007-2013.

The Electronic Government seeks rapprochement and exchange between government and citizen, relying on ICT for transformation of the Venezuelan State, of Public Management, structures and processes of government. The Venezuelan e-Government portal is "http://gobiernoenlinea.gob.ve/", this portal developed and administered by the National Center of Information Technologies (CNTI) under MPPEUCT. However the portal has only static information, news and links to other government websites.

4 By Indicators

4.1 Network Infrastructure Preparedness [NIP]

Approximately 57% of people in Estonia were Internet users in 2014, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). About 7.8% have fixed-broadband subscriptions, and wired broadband subscription has reached 43.9%.

4.2 Management Optimization [MO]

Venezuela's Government has an information technology national plan and Telecommunication plan, and the last version is ICT Plan 2007-2013. However, there is no evidence of the existence or new of e-Government strategies or an e-Government master plan.

4.3 Online Service [OS]

The score for Online Service is based on five investigating online services, i.e., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry. Table 1 lists the online services and their URL Address. All of those services were investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience. Venezuela is only providing e-Procurement and e-Health. Among these Online Services, e-Procurement has the highest score, compare to other online services. In

terms of complexity level, most of Online Service in Costa Rica has reached only information provider in which user can find the information and do download form through the portal.

For measuring the level of convenience, the third party application result has shown that portals are above the average considerably in terms of speed. The e-Procurement is slightly above the average. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights.

Table 30 List of Online Services

Online Service	URL
e-Procurement	http://rncenlinea.snc.gob.ve/
e-Tax	N.A
e-Customs	N.A
e-Health	http://www.mpps.gob.ve/
One-Stop Service	N.A

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. The Venezuelan e-Government portal is "http://gobiernoenlinea.gob.ve/", but the portal has only static information, news and links to other government websites. And the other "http://www.presidencia.gob.ve/", the president's government website, offers information on policies and programs, budgets, laws and regulations, and other topics of key public interest. In technical aspect, the result of Google PageSpeed™ Insight showed that the website performance is lower than average both from PC and from Mobile Device. In addition, the portal does not provide the user with some functionalities multi language, link to other online service, and blog.

4.5 Government CIO [GCIO]

There are no specific laws or mandates for CIO positions in Venezuela. There are no CIO associations as well as not CIO training course are offered by any university or training center.

4.6 E-Government Promotion [EPRO]

For e-Government promotion in Venezuela, President Chávez issued decree number 825 dated May 10, 2001 to develop the e-Government process. He also issued the telecommunications, data messages and electronic signatures law as well as a technology and innovation law. Telecommunications Law (OTA) (2000) instrument aims to "establish the legal framework regulating telecommunications in general, to guarantee citizens the human rights of communication and offer the implementation of telecommunications business activities necessary to achieve it.

4.7 E-Participation [EPAR]

Venezuela's Bolivarian Democracy brings together a variety of perspectives on participation and democracy in Venezuela. An interdisciplinary group of contributors focuses on the everyday lives of Venezuelans, examining the forms of participation that have emerged in communal councils, cultural activities, blogs, community media, and several other forums. In order to achieve smooth communication between the government and the citizen, using social network services now plays an important role. Twitter "https://twitter.com/gobenlineave" is now available in Venezuela's national

portal. This feature encourages citizen e-participation in Venezuela. In addition, citizens may contact the government or President through the website "http://www.presidencia.gob.ve/".

4.8 Open Government Data [OGD]

There is no evidence about the Venezuelan government's efforts on developing open government or open data.

4.9 Cyber Security [CYB]

Venezuela is a special country in that they have non-extradition rights as far as the US is concerned. Cybercrime is illegal in country, but is actually (under the table) encouraged. The government is happy to support criminal groups acting in the U.S. (and the UK and AU) from Venezuela. Basically, as long as nothing is done against the citizens of Venezuela, no criminal sanctions are filed against the cartels.

There is no evidence of the existence of a national master plan or strategy relating to cyber security. However, The VenCERT is the presence of Cyber Security Response Center of Venezuela. Its main objective, as a government CERT is the prevention, detection and management of incidents generated in the information systems of the National Public Administration and Public Entities in charge of the management of the National Critical Infrastructure.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). There is no evidence about the Venezuelan government's efforts on developing the use of emerging ICT on government.

5 Some Highlights

Venezuela has the impressive point on E-Participation. Venezuela's Bolivarian Democracy brings together a variety of perspectives on participation and democracy in Venezuela. An interdisciplinary group of contributors focuses on the everyday lives of Venezuelans, examining the forms of participation that have emerged in communal councils, cultural activities, blogs, community media, and several other forums.

However, Venezuela still has many weaknesses to develop e-Government. The use of emerging technology, Government CIO and e-Government Promotion are the weak point of Venezuela. And also other indicators are still low. There are no specific laws or mandates for CIO positions in Venezuela. There is no evidence of the existence of an emerging technology use in government. The score of e-Government Promotion is so low that only National Center for Information Technologies (CNTI) that is a committee to support e-Government. Moreover, there is no evidence about the Venezuelan government's online service. And there also is no evidence about the Venezuelan government's efforts on developing open government or open data.
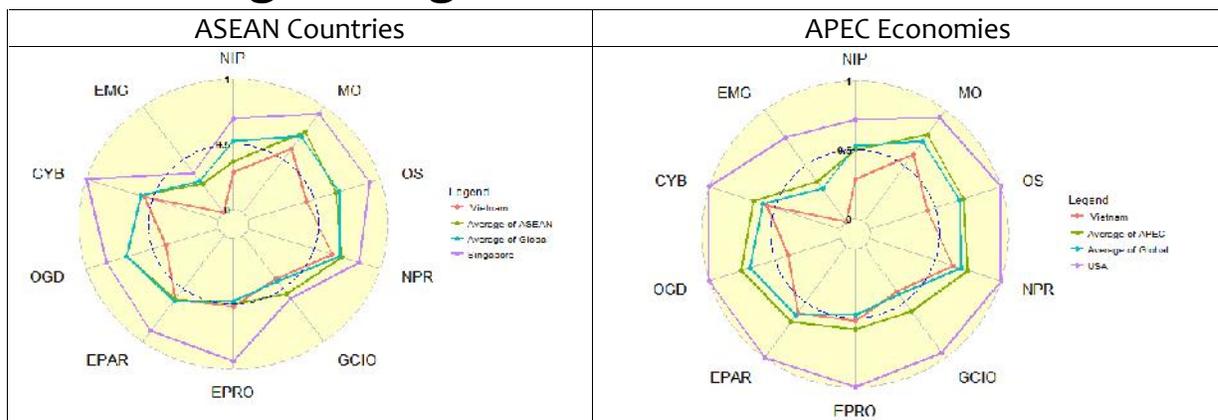
Vietnam

1 General Information

Area: 331,210 km²
Population: 94,348,835
Government Type: communist state
GDP: $6,100
Historical Ranking (2005 – 2016)

2 Positioning in a region

ASEAN Countries	APEC Economies
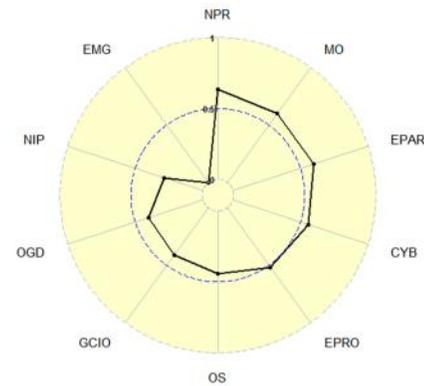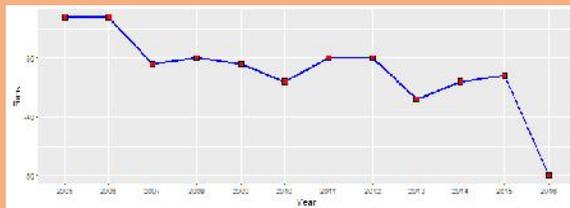
This year Vietnam's overall e-Governmente-Government score experienced a significantly decrease. Among ASEAN Countries, Vietnam shows little progress on e-Governmente-Government development. The country scores lower than ASEAN's and the world average on almost of indicators except e-Governmente-Government promotion. The similar phenomenon when comparing Vietnam with APEC economies.

3 E-Government Development

ICT development has been one of the priorities of Vietnamese government since 2000. On October 2000, the Directive 58-CT / TW on embracing ICT for national industrialization and modernization came into force, making ICT becomes the top priority for the national socio-economic development. In this period, Vietnamese government emphasized on promoting administration reform, developing

the national information network, increasing Internet penetration rate and utilizing IT in the state administration operations. The most notable ICT project were approved by the Government in this period was the Project 112 on computerization of state administration in 2001-2005 with the total funding being around 3.800 billion VND. In September 2001, the Prime Minister approved the state administrative reform program in the 2001-2010 period.

The year of 2015 was considered as an important milestone, marking by the officially announcement of the first legal document on e-Governmente-Government of Vietnamese Government through the Resolution 36a/NQ-CP dated October 2015. The resolution places priorities on ensuring the effective operations of state agencies, better serve people and businesses, and improve the nation's competitiveness.

4 Indicators

4.1 Network Infrastructure Preparedness [NIP]

The total of Internet users in Vietnam accounts for 50% of the population, according to the Measuring the Information Society Report 2015 from International Telecommunication Union (ITU). Among them, around 31% people have a wireless broadband connection, while the figure for fixed-broadband subscriptions is only 6.5%.

4.2 Management Optimization [MO]

Until 2015 the Vietnamese Government published the first official legal document on e-Governmente-Government. It was the Resolution 36a/NQ-CP dated October 2015 signed by the Prime Minister. The resolution lays the foundation for e-Governmente-Government development in Vietnam, with priorities given to promote the development of online public services, IT infrastructure and human resources during 2015-2017. The major targets set in the period are pushing administrative reform, utilizing IT in management and provision of public services. Drawing upon these targets, several measurable actions are prioritized: develop the information system to connect government agencies at all level; establish the national one-stop-service portal; promote IT application in administration reform to enhance the national competitiveness and facilitate business environment; and improve ICT infrastructure capacity to deliver Internet connection to remote areas.

Vietnamese government has successfully implemented several information systems in central government agencies, for examples, the Treasury and Budget Management System in Ministry of Finance (project TABMIS sponsored by World Bank), the electronic customs declaration system (project VNACCS/VCIS system partially funded by Japanese government from 2012) in General Department of Customs, and the in General Department of Tax. In addition, until 2015, almost ministerial-level agencies have implemented basic applications such as human resources management system, document management system, one stop shop application, and so on. All these projects aim to reduce the burden of application process for citizens and enhance public sectors efficiency.

4.3 Online Service [OS]

The score for Online Service is based on an investigation of five online services:on an investigation of five online services:., e-Procurement, e-Tax, e-Customs, e-Health, and One-Stop Service for Citizenry.

Table 1 lists the online services and its URL Address. All of those services was investigated using three factors, i.e., Level of Complexity, Level of Security, and Level of Convenience.

In termss of complexity level, only online service in Tax and Customs reached the transactional level in which user can totally conduct their businesses online. Organization or enterprise who want to declare their tax online will need to have a bank account belonging to one of banks that have the cooperation relationship with General Department of Tax. The General Department of Customs has launched the project named VNACCS/VCIS in 2012 with the support from Japanese government, in order to provide an effective tool to support customs departments national wide in cargo clearance services and customs management. In order to declare customs, enterprises need to download and install client software and connect to VNACCS/VCIS system. Payment can be made by bank transfer or directly at customs offices. One stop service gateway is under planning progress.

To measure the level of convenience, the third party application result has showed that all portal is above the average in termss of speed. The third party application for assessing the portal is the application from Google named Google PageSpeed™ Insight on https://developers.google.com/speed/pagespeed/insights. For public procurement, the electronic procurement portal only works on Internet Explorer. The portal also supports https protocol with a certificate provided by Korea Certificate Authority.

Online Service	URL
e-Procurement	http://muasamcong.mpi.gov.vn
e-Tax	https://nhantokhai.gdt.gov.vn
e-Customs	http://www.customs.gov.vn
e-Health	N/A
One-Stop Service	N/A

4.4 National Portal [NPR]

The score for National Portal is based on three factors, i.e., Information (Content), Technical, and Functionality. National Portal of Vietnam (chinhphu.vn) contains proper information for local citizens and foreigners. Information about the country, government structure and latest government's activities are also available. In termss of technical aspects, the result of Google PageSpeed™ Insight showed that the portal performs at average speed and operates well with both PC and Mobile devices. The portal is also equipped with several basic functionalities such as search capability and site map.

4.5 Government CIO [GCIO]

Currently, the government body responsible for the overall e-Governmente-Government development at national scope is the Ministry of Information and Communication. There is a Government CIO Council established in 2011 with the members are the directors of ICT departments in all provinces. To date, the council has demonstrated its roles in several actions such as promulgating instructions in building ICT planning for local governments, applying technical standards for local portals or using state budget for applying ICT in government agencies. Besides, there are CIO-equivalent positions appointed with the roles to promote ICT development at local government level.

4.6 E-Government Promotion [EPRO]

There is a national strategy on ICT development every year. And it is mandated on provinces to endorse similar strategy at local level. There has not been a separate financial mechanism for ICT development. Funding for ICT projects is deducted from the Science Technology fund.

4.7 E-Government Participation [EPAR]

Vietnamese citizens seem not to be aware about government's plans on e-Governmente-Government although they are supposed to be the center point in any e-Governmente-Government project. This is due to e-Governmente-Government projects were used to be designed and developed mostly based on suppliers' perspectives.

Private sectors are the most proactively participated users in e-Governmente-Government initiatives with 98% of total companies lodging tax via Internet in 2015. In the same year, the number of firms participating in electronic customs declarations was 35,020, accounting for 98.13% of all businesses. These are the results of government's aggressive efforts in recent years to promote the tax and customs modernization process.

4.8 Open Government Data [OGD]

Currently the management, exploitation and usage of national data are facing with lots of challenges. For instance, there is no existence of a national population data, however practically there has been several separate databases related to the population such as civil, labor, health insurance, driving license, and so on which are managing by different agencies. The statics on socioeconomic are published limitedly without reusing or redistribution. Data from a few sectors such as environmental resource has not been managed well, resulting in fragmentation, inconsistent and duplication. Under specific circumstance, data can be exchanged among different government agencies.

4.9 Cyber Security [CYB]

With the strong growth of ICT, the Vietnamese government is putting more effort into ensuring the safety and security of cyber environment. The Law of Information Technology was approved on 2006, establishing the basic principles for this purpose. In termsIn termss of institutional, the Vietnam Computer Emergency Response Team (VNCert) was established in 2005 under the Ministry of Information and Communications with the duties to give warnings on computer network security and advise the Ministers in the safety and security management of state agencies.

There are few national regulations relating to information safety came into force such as: The directive 28-CT/TW, on 16-9-2013 of the Party Central Committee's Secretariat (XI) to enhance the network information security and Decree No. 72/2013/ND-CP, validated 15-7-2013 of the Government in management, provision and use of Internet services and online information.

4.10 The use of Emerging ICT [EMG]

This indicator uses three current technologies for measuring as the scoring items. These technologies are Cloud Computing, Big Data, and Internet of Things (IoT). No information was found regarding to the utilization of emerging technologies within government agencies.

5   Some Highlights

Vietnam started to connect to the Internet world in 2000. At the time, only 0.3% of the population were Internet users in Vietnam. This figure has grown to 48.3 million, accounting for more than half of the population in 2015, ranking 7th in Asia. After two decades, the ICT industry is playing an important role in socio-economic development of Vietnam. Recently, Vietnam stands in the top 10 most attractive outsourcing environments in the Asia-Pacific region; the total IT industry revenue reached 33 billion USD and the total employees working in the IT sector was over 440,000 in 2013.

This year, Vietnam has its highest score on Management Optimization, which reflects the efforts of government in utilizing ICT in state administration bodies' operations. The Resolution No. 36a / NQ-CP issued by the Government on October 2015 identifies general visions on e-Governmente-Government such as: promote the development of e-Governmente-Government; improve the quality and efficiency of the activities of State agencies to serve citizens and businesses better; improve Vietnam's position on United Nation e-Governmente-Government ranking; and publicize the activities of state agencies in the network environment. Inheriting achievements accumulated from previous periods, the IT utilization in state agencies have shown optimistic results.

However, online service delivery is still very limited, despite of a high rate of InternetInternet penetration. Most of online services are at interactive level, calling for necessary activities of the government to boost the administration reform process. Lack of consistent direction in e-Governmente-Government implementation, especially in local governments, resulted in the highly fragmentation in e-Governmente-Government initiatives and imped collaboration and data sharing among agencies.

Cyber security is another weak point of the country as the lack of necessary security mechanisms and legal framework made online transactions become more vulnerable to cyber threats. Alongside with the fast growth in ICT, high-tech criminal status in Vietnam tend to be more complicated. This in turn will become the barrier preventing citizens and businesses in interacting with governments via online way.

Although there has been some progress from the Vietnamese government on e-Governmente-Government development, the outcome is still far from meeting expectations. This implies that the government should pay attention not only to technical investments but also to other indispensable determinants such as leadership commitment, legislative framework, inter-cooperation among government agencies and strict supervision from independent bodies.