Development and Delivery
of Livelihood-based e-Service
For ASEAN Women

2014

Glossary

ADB   Asian Development Bank
AMS   Asian Member State
APC   Association of Progressive Communications
CIC   Community Information Center
CLC   Community Learning Center
CBO   Civil Society Organisations
EFA   Education For All
GBV   Gender Based Violence
GAIS   Government Administrative Information Systems
ITU   International Telecommunication Union
IVR   Interactive Voice Response
JFIT   Japanese Funds-in-Trust
JICA   Japan International Cooperation Agency
KOICA   Korea International Cooperation Agency
MAFF   Ministry of Agriculture Forestry and Fisheries
MOC   Ministry of Commerce
MCFA   Ministry of Culture and Fine Arts
MEF   Ministry of Economy and Finance
MOEYS   Ministry of Education Youth and Sports
MOE   Ministry of Environment
MFAIC   Ministry of Foreign Affairs and International Cooperation
MOH   Ministry of Health
MIME   Ministry of Industry Mines and Energy
MOInfo   Ministry of Information
MOInt   Ministry of Interior
MOJ   Ministry of Justice
MLVT   Ministry of Labour and Vocational Training
MLMUPC   Ministry of Land Management, Urban Planning & Construction
MOND   Ministry of National Defence
MONASRI Ministry of Parliamentary Affairs and Inspection
MOP   Ministry of Planning
MPT   Ministry of Post and Telecommunication
MPWT   Ministry of Public Works and Transport
MRC   Ministry of Religions and Cults
MRD   Ministry of Rural Development
MSAVYR   Ministry of Social Affairs Veteran and Youth Rehabilitation
MOT   Ministry of Tourism
MOWRM   Ministry of Water Resources and Meteorology
NII   National Information Infrastructure
NGOs   Non Governmental Organizations
NiDA   National Information Communication and Technology Development Authority
NSDP   The National Strategic Development Plan
OCM   Office of the Council of Ministers
OI   Open Institute

PAIS   Provincial Administrative Information System
PPM   Phnom Penh Municipality
RGC   Royal Government of Cambodia
SSCA   State Secretariat of Civil Aviation
SSCS   State Secretariat of Civil Service
USAID   United State Agency for International Development
WID   Women in Development

Chapter 3. Country-wise Analysis

3.2. Cambodia

Indicator	Data	
Basic Information		
1. Country name	**Cambodia**	**Source**
2. Area (km²)	181,035 Km^2	Census 2008
3. National population	14,678,000	CSED 2013
4. Rural population	11,531,000	CSED 2013
5. Key Economic Sector(s)		
6. Industry (%)		
6-1. Agriculture (%)	54.2%	MAFF 2013
6-2. Fisheries (%)	26.45%	MAFF 2013
6-3. Livestock industry (%)	14%	MAFF 2013
6-4. Other sector (forestry & logging) (%)	5.5%	MAFF 2013
7. GDP per capita	1,008 USD (WB)	ADB Outlook 2014
8. Employment (%)	82.8%	CSED 2013
8-1. Employment - Urban (%)	76.6%	CSED 2013
8-2. Employment - Rural (%)	85.2%	CSED 2013
Gender		
1. Education (% of female)	73.1%	Census 2008
1-1. Primary education (% of female)	23.9%	Census 2008
1-2. Secondary education (% of female)	15.9%	Census 2008
1-3. Higher education (% of female)	1%	Census 2008
2. Literacy (% of female)	70.9%	Census 2008
3. Labor Force Participation (% of female)	77.8%	CSED 2013
3-1. Labor force in agriculture (% of female)	50%	CSED 2013
3-2. Labor force in fisheries (% of female)	N/A	
3-3. Labor force in livestock industry (% of female)	N/A	
3-4. Labor force in other sector (% of female)	N/A	
ICT		
1. Telephone lines (%)	(420,942) 2.78%	ITU 2013
1-1. Telephone lines - Urban (%)	N/A	
1-2. Telephone lines - Rural (%)	N/A	
2. Cell phone subscriptions (%)	(20,264,514)	ITU 2013
2-1. Cell phone subscriptions - Urban (%)	91% (96% in	ITU 2013
2-2. Cell phone subscriptions - Rural (%)	72%	ITU 2013
3. Internet use (%)	6%	ITU 2013
3-1. Internet use - Urban (%)	N/A	
3-2. Internet use - Rural (%)	N/A	
3-3. Internet use - Women (%)	N/A	
4. Households with internet access	5%	ITU 2013
4-1. Households with internet access - Urban (%)	N/A	

4-2. Households with internet access - Rural (%)	N/A	
5. Telecenter (internet Café)	304	Simon, 2012
5-1. The number of Telecenters - Urban		
5-2. The number of Telecenters - Rural		

3.2.1. Current Status of e-Services

The worldwide growth of Information and communication technology advances Cambodia into a digital age. Cambodian was claimed to be the first country in the world that has more mobile phones than fixed phones or landlines, with the average of 1.3 mobile subscriptions (Simon, 2012). In 2013, the number of mobile subscribers has reach to 20 million, exceeding the total number of population by around 5 million. The number of mobile phone subscribers increase significantly from 19 to 20.2 million subscribers, between 2012 and 2013, which surpassing the total population by around 5 million (Telecommunication Regulator of Cambodia, 2014).
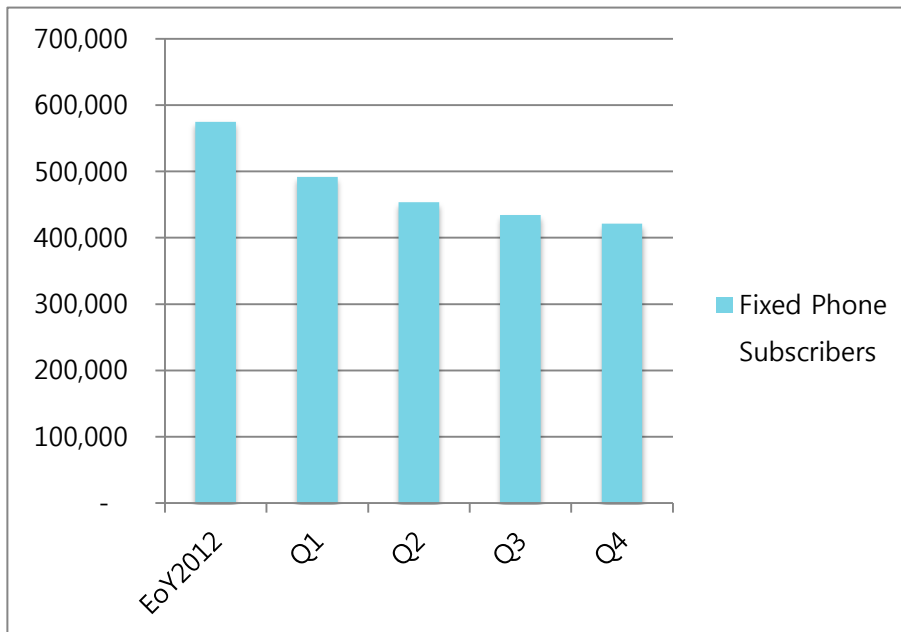
Figure 1: Mobile Phone Subscribers
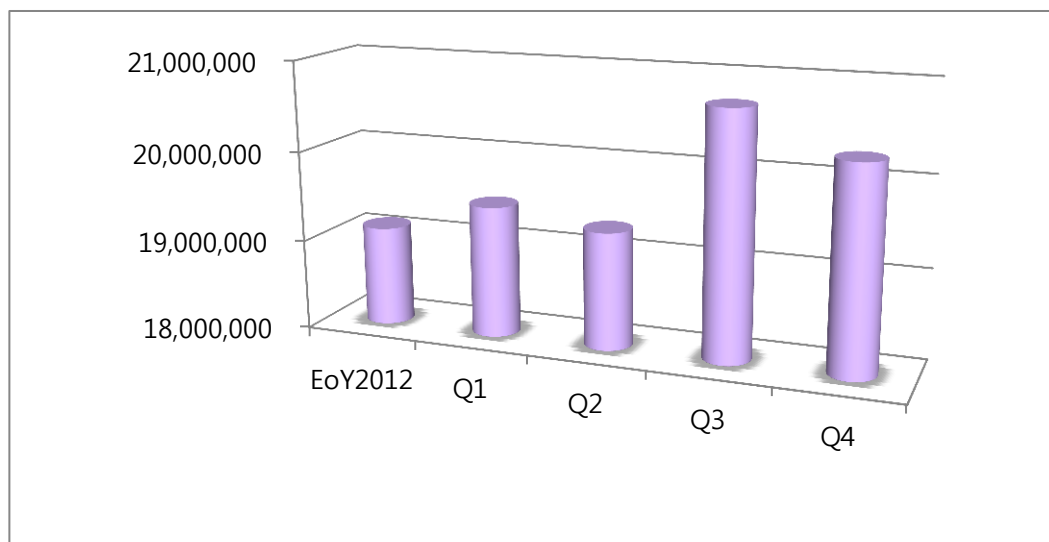
Source: Telecommunication Regulator of Cambodia

In contrast, the number of fixed phone subscribers has a sharply drop from 574,524 to 420,942 subscribers (Telecommunication Regulator of Cambodia, 2014).

Figure 2: Fixed Phone Subscribers

Source: Telecommunication Regulator of Cambodia

There is a growing up of number of people using mobile phones since the low price of mobile phones in Cambodia plus having many beneficial functions (Sokhean, 2014). While the number of mobile subscribers increasing, the number of Internet users is also jumped. Internet users per 100 people increase remarkably from 0,5% in 2009 to 6% in 2013 (World Bank, 2014). In that fact, Cambodian opposes the rank of 15th country in the world in terms of mobile's sharing of Internet activity (Simon, 2012).

Figure 3: Internet User Per 100 People
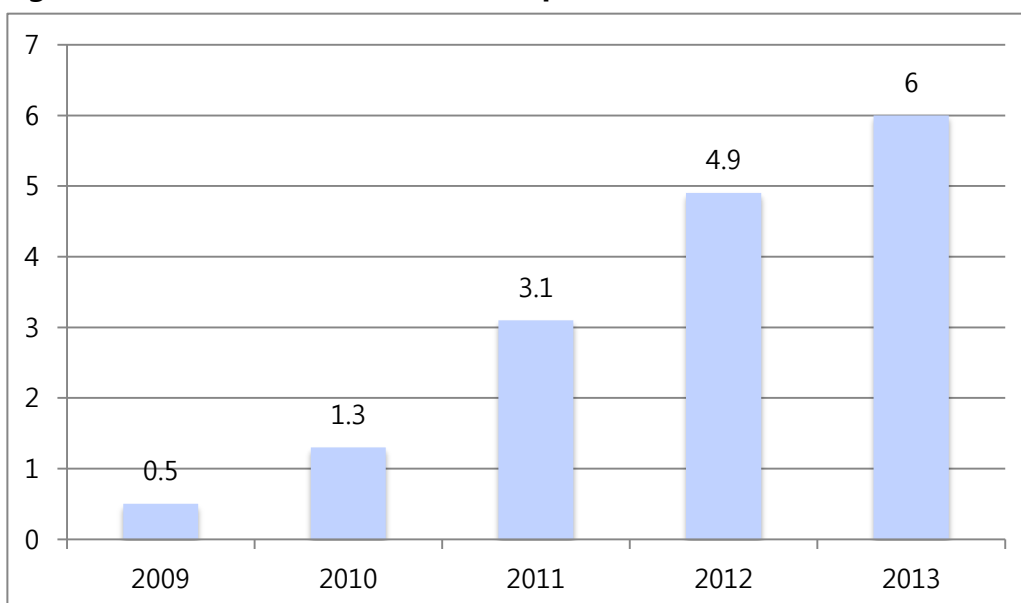
Source: World Bank data Indicator

The expansion of Internet service and the availability of functional mobile phones have brought the rapid growth of online social media like Facebook, Twistterin, WhatsApp, Youtube and so on to Cambodia. Notably, there is approximately 81% of Cambodian users access to Facebook by using their mobile devices. According to Immanuel (2014), Facebook has been found out as the most popular Social Media in Cambodia. Totally, there are around 1,420,000 users actively online every month, of which 38% are females.

Figure 4: Facebook Users
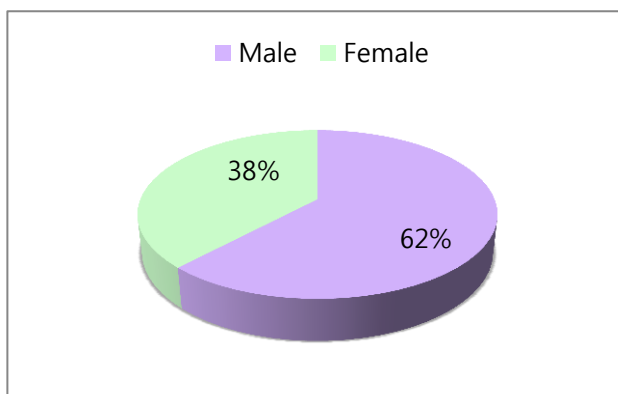
Source: Greek in Cambodia

The incredible growth of this social media has made it a valuable marketing tool for businesses regardless types and sizes. Social media networks have become the best strategy for online advertizing. Some government ministries, institutions, shops, companies, online wholesalers and retailers, service providers, have sign up Facebook pages for providing information of their activities and advertizing their products and services. Below is the list of the top Facebook pages in Cambodia.

Table 1: The Top Facebook Pages in Cambodia

	Facebook Pages	Number of Fans
1	Music	860.000
2	Art	740.000
3	Fashion	740.000
4	Travel	720.000
5	Sports	700.000
6	Movies	680.000
7	Game	620.000
8	Reading	620.000
9	Beauty	600.000
10	Auto Motor	560.000
11	Drinking & Beverages	560.000
12	Politic	540.000
13	Restaurants	460.000
14	TV Shows	440.000
15	Gardening	440.000

16	Cooking	420.000

<div align="center">Source: Greek in Cambodia</div>

A. E-Government Services

The development of Information and Communication Technology (ICT) has brought rapid change in social, economic, political and cultural transformation. It is changing the way of people's life and also changing the way of government's work. Many governments have been harnessing ICT to better their services for their people. Royal Government of Cambodia, by having aware of the potential of ICT, since 2000, has been issuing the policies to adopt and promote the use of ICT in government agencies and in other sectors and has included "promoting extensive use of Information Technology in all aspects of governance and government" in the National Strategic Development Plan (NSDP) 2006-2010.

A.1 Information Communication and Technology Policies

Royal Government of Cambodia has put lots of effort in enhancing the status of ICT services in Cambodia. A number of policies and sub-decrees have been drafted and enacted.

A.1.1 National Information Communication and Technology Policy

In achieving the development goals of ICT in NSDP and in boosting the socio-economic development, human development, poverty alleviation and in bridging the digital gap in the country, Royal Government of Cambodian (RGC) has committed to the development of a National Information and Communication Technology (ICT) Policy with its **vision** of upgrading Cambodia to become a globally competitive, knowledge and information sharing based society, being able to provide ICT base solutions to improve the sustainability of socio-economic development. To achieve the said vision, ICT policy has **mission** in integrating ICT activities in and providing a conductive legal and regulatory framework for

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The objectives of National ICT Policy:
- Provide citizen and key stakeholders a clear ICT legal framework.
- Provide awareness rising on the role and potential of ICT to the national level in the empowerment of people and in enhancing governance with the emphasis on sustainable development.
- Create a culture of lifetime learning to maximize the existing potential of Cambodian people and accelerate innovation to develop a knowledge-based system.
- Reduce the wide gap in living standards between the population living in the capital and those in the provinces, which is closely linked to the existing digital divide of information accessibility (development of basic infrastructure on a nation wide level).
- Increase the competitiveness of national industry with the establishment of an adequate business environment, and improve the quality of life and the access that Cambodian people have to convenient services through the promotion of the application and implementation of appropriate ICT.
- Encourage the development of the national ICT industry by facilitating the widespread adoption of ICT applications and implementation of ICT development.
- Provide the availability of ICT access points in all areas and implement a cost-effective ICT.
- Reduce public administration costs and improve the quality of public services through the application of ICT.
- Promote locally the development of human resources necessary for the adoption of ICT and a national ICT industry.
- Enforce the Women in Development (WID) within the scope of ICT.
- Enforce the awareness of the role ICT plays within the context of global warming, as well as the strong national position of undertaking the measures necessary to stop global warming, as the first AMS (Asian Member State) to initiate such a commitment in its national ICT Policy.

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the public and private sectors to improve social and economic motivation and the infrastructure investment in e-commerce capacity building. The **goals** of the National ICT policy focuses on creating and providing a national framework and policy for enabling the contribution of ICT towards the achievement of national development goals; providing universal services and accessibility to information and communication facilities for the global competition and productivity; and transforming Cambodia into a knowledge-based society by proper implementation of ICT (National ICT Policy, 2009).

A.1.2 ICT Policy in Education, Ministry of Education, Youth and Sport (MoEYS)

Cambodia is still at the emerging state for most of the dimensions of ICT in education, although it started to develop the plans and policies in education policy since 2004. The Ministry of Education, Youth and Sport (MoEYS), in 2004, with the technical assistance from UNESCO and financial support from Japanese Funds-in-Trust (JFIT), was the first ministry initiated the formulation of educational ICT policy and strategies in Cambodia. In 2005, MoYES started to implement the policies and strategies on Information and Communication Technology in Education in Cambodia. This policy introduces various initiatives to facilitate greater integration of information and communication technology to improve the effectiveness of education at all levels and to produce the technologically literate, productive and critically thinking workforce for the country.

There are three main goals of formulating the policy and strategies on information and communication technology in education:

> i). Increased access to basic education for all, both formal and non- formal by using ICT as one of the major tools for learning, teaching, searching and sharing information;

> ii). Improved quality of basic education and promoted independent and lifelong learning, especially for post-primary education; and

> iii). Availability of workforce with the ICT skills needed for employment and use in a knowledge-based society to ensure that Cambodia can compete and cooperate in an increasingly interconnected world (MoEYS, 2004).

The Ministry's articulation of the policy for ICT in education focuses on four main areas: a). Provide access to ICT for all teachers and students, especially at secondary level, ensuring that ICT is used as an enabler to reduce the digital gap between Cambodian schools and other schools in neighboring countries; b). Emphasizes the role and function of ICT in education as a teaching and learning tool in different subjects, and as a subject by itself. Access to information on the Internet and increased communication, via email, between schools and individuals can play an important role in the professional development of educators. In addition to radio and television as a teaching and learning tool, this policy stresses the use of the computer for accessing information, knowledge, skills, and communication; c). Promote education for all regardless of age, gender, ethnicity, disability or location through distance education and self-learning, especially for deprived children, youth and adults who lack access to basic education, literacy and skill training, by integrating ICT with radio, television, printed materials and other media; and emphasizes using ICT to increase productivity, efficiency and effectiveness of education management. Through the use of information management systems, ICT will be extensively used to automate and mechanize work such as the processing of student and teacher records, communication between government and schools, lesson planning, assessment and testing, financial management and the maintenance of inventories (MoEYS, 2004).

To enhance the effort of achieving the goals of Education For All (EFA), to apply the Education

Strategic Plan 2009-2013, and to achieve the Ministry vision "establish and develop human resources of the very highest quality and ethics in order to develop a knowledge-based society within Cambodia", as well as to make education and management more efficient and effective by the use of ICT, the Ministry of Education Youth and Sport, in 2010, has developed Master Plan for information and communication technology in education for 2009 – 2013. The general objectives of Master Plan are as follow:

      1. To increase access to basic education, tertiary education and life-long learning, both formal and non-formal, by using ICT as alternative education delivery media.

      2. To improve the relevance and effectiveness of basic education by harnessing the potential of ICT as a major tool to enhance the quality of teaching and learning.

      3. To develop the ICT-based professional skills needed by graduates for employment in a knowledge-based society and in order to ensure that Cambodia can compete and cooperate in an increasingly interconnected world.

      4. To increase the effectiveness and efficiency of Ministry and school management. Coordinated by the ICT in Education Office, each major department of the Ministry of Education, Youth and Sport will be responsible for specific objectives of the Master Plan (MoEYS, 2010).

Master Plan concentrates on increasing the preparation and employability of students by giving them ICT-based professional skills and other pre-university skills; increasing access to information and research for higher education, reaching out to more students through distance education, and improving the distribution of research and subject-based materials through a web-based clearinghouse; improving teacher training by using video and multimedia as a teacher education support materials to improve their teaching and administration skills through the use of computers and other forms of ICT; and reinforcing non-formal and informal education by creating materials for self-training for the equivalency examinations, and by developing video materials for income generation programs of the Community Learning Centers (CLC) (MoEYS, 2010).

A.2 The Current Status of e-Government Services

E-government refers to the utilizing of information technology by governments to enhance the access and delivery of information and services to citizens, business partners, professionals, other institutions, and government agencies themselves (McClure, 2000, Symonds, 2000 and West, 2004 as cited in Nripendra, Yogesh, Michael, 2012). The National Information and Communication Technology Development Agency (NiDA), that was established by the Royal Decree on 23 August 2000 has played the important role in promoting ICT in the Cambodian country. NiDA has been mandated to formulate and implement IT promotion and development policy, and to monitor all IT related projects in the Kingdom of Cambodia. NiDA has implemented e-Government projects, Government Administrative Information Systems (GAIS) and Provincial Administrative Information Systems (PAIS), which have been constructed over National Information Infrastructure (NII). Preparing the effective use of National Information Infrastructure (NII) and the need of e-government application, NiDA has been working in cooperation with JICA to prepare the e-Government Service Deployment Plan. The e-Government Service Development Plan has been divided into seven stages: i). Enabling environment, ii). Essential inter-ministry application, iii). Enhance government portal, iv). Common online interface, v). Business Portal, vi). Citizen's Portal, and vii). Enhanced e-service (National ICT Policy, 2009).

As the least developed country the Royal Government of Cambodia has put the effort to set up and enhance ICT services for its citizens. The government has equipped ICT infrastructures at the public institutions agencies and has built the capacity of government official on the use of ICT.
The survet result of United Nations (2010) stated that

"Least developed countries have no real e-ser- vices, nor are they providing citizens with transactional opportunities, ... The vast majority of the sites surveyed primarily contain e-information and the beginning stages of citizen engagement with polls and feedback forms…..".

The survey by World Bank Group (2010) shows that there was a significant improvement of ICT infrastructure in Cambodia government and there was some progress of human capital. However, the improvement of ICT in general is still some how limited. Although most of public institutions agencies have their website developed, few websites cannot be accessed, as they are currently under construction or information is not available, for instance website of the Ministry of Women's Affairs. Some web presences provided reliable and up to date information such as Ministry of Education, Youth and Sport, Ministry of Economy and Finance, Ministry of Commerce and Ministry of Interior, whereas some web presences provide static information and only activities of their ministries government such as Ministry of Post and Telecommunication. Some data and reports are not available. Although quite numbers of ministries provide reliable information, data and reports, e-service implementation within government agencies and between government, citizens and businesses is relatively low. According to United Nations (2010) although RGC has committed to boost e-government service in Cambodia, the level of its service is still very low. Compare to the South East Asia countries Cambodia is in the 8th rank follow by Myanmar and Lao People's Democratic Republic. For the world e-government development ranking, Cambodia is moving backward from 139th place in 2008 to 140th place in 2010.

Table 2: E-government Development in South-Eastern Asia

	E-government development index value		World e-government development ranking	
Country	2010	2008	2010	2008
Singapore	0.7476	0.7009	11	23
Malaysia	0.6101	0.6063	32	34
Brunei Darussalam	0.4796	0.4667	68	87
Thailand	0.4653	0.5031	76	64
Philippines	0.4637	0.5001	78	66
Viet Name	0.4454	0.4558	90	91
Indonesia	0.4026	0.4107	109	106
Cambodia	0.2878	0.2989	140	139
Myanmar	0.2818	0.2922	141	144
Lao People's Domestic Republic	0.2637	0.2383	151	156
Timor-Leste	0.2273	0.2462	162	155

Source: United Nation E-Government Survey 2010

Most government websites in Cambodia are at the stage one, have no real e-services with limited transactional aspect of e-government services. The United Nations illustrates government online services in four stages: i). Emerging information services, ii). Enhanced information services, iii) Transactional services and iv) Connected services.

Figure 5: Online Services Levels
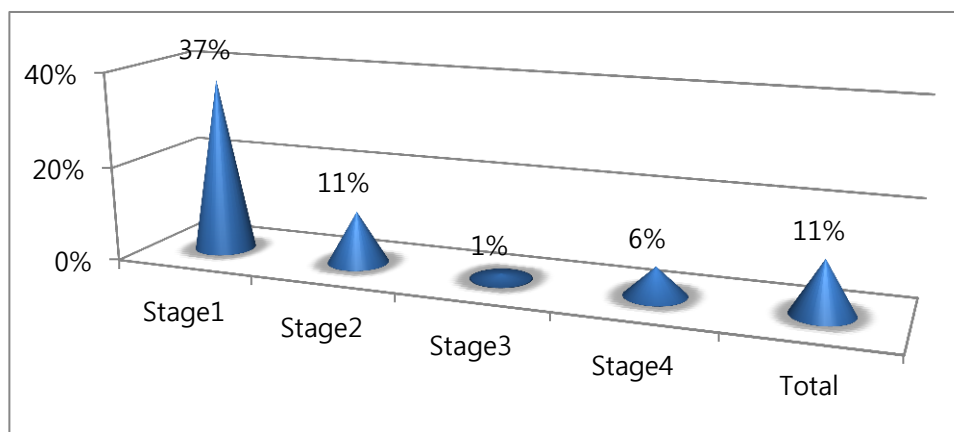
Source: United Nation E-Government Survey 2010

Broadcasting information on websites in local language is important, as most people, in both urban and rural areas, having limit capacity in English language. According to the study, there were only 12 out of the 21 existing websites provided contents and information in Khmer language, those are OCM, MOC, MCFA, MEF, MOE, MOH, MIME, MoInfo, MPWT, MRD, MOT and PPM (NiDA & JICA, 2009)

NiDA in joining with Japan International Cooperation Agency (JICA), in 2008, has conducted the study at 29 government agencies in Phnom Penh on their e-Government readiness. A year later, follow-up survey has been conducted by NiDA and JICA for assessing the progress of e-Government services deployment of each government agency whether it is on the right track. The result of the study shows that there is a minor progress in e-Government readiness. Nonetheless, it revealed that e-Government status of some government ministries remain the same. The comparison between the two studies shows the minor improvement of the e-Government readiness index in all four aspects. The average of the total index in 2008 and 2009 were 2.20 points and 2.41 points, respectively.

Table 3: Average e-Government Readiness Index Comparison between 2008 and 2009

	Pillars	Ratio 2008	Ratio 2009
1	ICT management capacity and leadership	0.64	0.70
2	Financial resource	0.51	0.56
3	Infrastructure	0.54	0.56
4	ICT literacy and experience	0.50	0.59
	Total	**2.20**	**2.41**

Source: The Follow-up Study Report on e-Government Service Deployment Plan for Royal Government of Cambodia (NiDA & JICA, 2009)

The e-Government ministries have been categorized into tree levels namely Advanced, Average and Behind. The "Advanced" level of ministries have accomplished a significant improvement; the "Average" level are endeavoring to move forward; whereas, the "Behind" level seems less motivated, which are going to face a long journey to reach the "Advance" level. The study shows that most of ministries have their e-Government ministries improved (see table 2). The ministries that received remarkable progress were reported of having support from donors.

Table 4: Advance, Average and Behind categorized of Ministries of 2008 & 2009

Category	Total Index	Result of 2008	Result of 2009
Advanced	> 2.4 points (more than 60%)	OCM, MEF, MFAIC, MoInt, MOP, MOT, PPM	MoInt, MOEYS, MOH, MOInfo, MPTC, MOT, MAFF, MLMUPC
Average	<2.4 points>1.8 point (45% above average)	MOC, MCFA, MOEYS, MOH, MIME, MOInfo, MLVT, MOND, MPWT, MRD, MOWRM, SSCS, SSCA	MLVT
Behind	<1.8 points (45% below average)	MOE, MONASRI, MOSAVY, MWA	MOE, MWA
Unknown	Not available	MAFF, MOJ, MPTC, MRC, MLMUPC	

Source: The Follow-up Study Report on e-Government Service Deployment Plan for Royal Government of Cambodia (NiDA & JICA, 2009)

A.3 The Implementing e-Services

Although e-government service is still at the first stage (UN, 2010), the Royal Government of Cambodia has made some progress on the development of its e-services on e-Visa and e-Banking.

A.3.1 E-Visa

The ministry of Foreign Affairs and International Cooperation of the Kingdom of Cambodia, in April 2006, has introduced the Cambodian e-Visa or Electronic Visa via website http://evisa.mfaic.gov.kh. On 15 August 2014, the Ministry has launched a new official website for Cambodia e-Via as www.evis.gov.kh in lieu of the current website. The new website will be effective from 19 August 2014. Thus, tourists still can apply Cambodian e-Visa through the URL of the Ministry's website at www.mfaic (MoFAIC, 2014). The e-Visa platform supports up to 25 languages worldwide. Interestingly, there is an increasing of number of e-Visa lanes in major checkpoints from the initial 5 lanes to 20 lanes. The number of e-Visa applicants has reached 55,000 applications by present. Cambodia e-Visa can be downloaded from iPhone, iPad and Android devices (MoFAIC, 2014).

A.3.2 E-Banking

E-Banking service has been firstly introduced to Cambodia by ANZ Royal, includes Internet Banking and ATM. E-baking service has been adapted by most of banks and by some Micro Institutions in Cambodia includes ANZ, ALEDA, FTB, Canadia, Campu, and Prasac …. Not all banks provide the same services of e-Banking. Each bank/micro institute offer e-banking services to customers base on the ability of the bank itself. The e-banking services that offer by in Cambodia such as Internet Banking, ATMs, Debit and Credit Cards ATM bill payment, Mobile phone top-ups, EFTPOS and Unity. Below are the e-Banking services of ANZ Royal and CLEDA Banks:

ANZ Royal Electronic Banking
- ANZ Royal Debit and Credit cards
- ANZ Royal ATMs
- Internet Banking
- E-biz
- EFTPOS
- ATM Bill Payment (for electricity bills)
- Mobile Phone top-ups

ACLEDA E-Banking Services

- ACLEDA Internet Banking: The online access banking services via desktop, laptop, telephones that are connected to the Internet. It is fast, secure, reliable, and convenient to manage money. It serves in three languages: Khmer, English and Chines.
- ACLEDA Unity: allows customers to operate ACLEDA Bank's services including ATM cardless cash withdrawal via all kinds of mobile phones and all networks.
- ACLEDA ATM
- ACLEDA VISA Debit and Credit Cards
- ACLEDA POS
- Banking Service Order via E-mail/Fax

ATMs service has been noticed on a rise between 2011 and 2013. In 2011, there were around 500 ATM machines in Cambodia, while in first quarter of 2012 and 2013 it increases to 613 and 713 ATM machines respectively. Although e-banking services have been adopted, applied and grown up, e-Banking in Cambodia is still behind some countries in the region like Thailand, Vietnam and Malaysia…(NBC cited in Rann, & Mak, 2013).

Payroll System

Ministry of Economy and Finance (MEF) was implementing the Government Public Financial Management Reform Program, and the National Treasury was sanctioned by NBC to work with private Banks. The Government Public Financial Management Reform Program helps the government budget more credible and will make the process of budget more efficient and reduce opportunity for corruption (Rob cited in Cheang, 2006). Changing the cash payments system is among program to be reformed by MEF. The cash payments system for the government officials has been gradually diminished. In 2006, the new payroll system has been started its pilot testing with several hundred officials in the Ministry of Economy and Finance (MEF) and the Ministry of Health. The new payroll system was limited to staff who had position from Deputy Director of Department and above, and who had salaries from USD 150 or more per month. After the succuss of piloting of new payroll system, the government has gradually reformed from cash payment system to new payroll system. Recently, MoU between MEF and two banks (ACLEDA and Canadia) and WING have been signed for the wage of 400,000 servants from 39 government ministries. This payroll system is scheduled to get the paid via a new electronic banking system. There were two banks (ACLEDA and Canadia) and WING (Micro Finance Institution), to provide payroll services to government staff (Muyhong, 2013).

A.3.3 Social Media/Facebook Pages

At the emerging stage, as real e-government services is still at the first stage, some government ministries have signed up Facebook pages, especially, for their agencies mainly to provide information, legal documents, Prakas, or announcements related to the agencies to citizens. In addition to Facebook pages of their ministries/ agencies, they have also signed up the Facebook personal page to show their agencies activities to the audience as well. For example, the ministry of Education Youth and Sport has Facebook page for ministry (www.facebook.com/KhMoeys) and personal Facebook page of Minister (www.facebook.com/hang.naron). The personal Facebook page provides information mostly the activities at the Ministry as well. In this regards, Facebook could serve as a part of e-services because it can provide information to the public, and people can post questions, but the rate of answering is to some extent only.

A.4 Challenges

- Having dedicated ICT office is very important in improving e-Government services. Some government agencies have been working to setup ICT offices. It was notice that some "Behind" categorized agencies that mostly do not have dedicated ICT office apparently have little ideas on how ICT can profoundly affect the performance of an organization. There is because of they were solely focusing on the technological potential of ICT only. They did not considering what ICT may bring to ensure corporate governance within the ministry (NiDA & JICA, 2009).

- Having dedicated ICT office is very important in improving e-Government services. However, without having adequate authority, the ICT governance would be poor. Some government ministries that have dedicated ICT Offices were found out to be poor in ICT governance due to inadequate authority. MoInt and MoInfo were the only government ministries with a department dedicated the ICT services to the ministry-wide. There is a limited of information sharing within units at the ministry or across ministries. Information is rarely disseminated and distributed freely, even though among the units, especially within the "Behind" ministries. Having inadequate authority of the ICT office, ICT personnel are not allowed to collect information and to involve in ICT projects of other departments (NiDA & JICA, 2009). The scope of information sharing is base on personal relationship. This practice and thinking leads the lacking of resources for data collection, and creating barriers to construct centralized information system. Therefore, strengthening the existing governance concepts within e-government is an important step towards in improving the coordination of process and system within and across government ministries, and changing the way that government operates. Additionally, it is essential to empower ICT personnel, so that they can take the initiative in ensuring the support from all relevant departments (World Bank Group, 2010). .

- Receiving low salary of civil servants is another reason of lowing down the human resource development at the government agencies. Most of the government agencies failed to retrain ICT personnel. The reasons of facing difficulties in retraining their personnel capacities includes not enough ability, low level of incentives and less courage in putting the theory into practice (NiDA & JICA, 2009). Getting better opportunities in the private sector and receiving low wages at the government agencies are disincentives for recruitment and retention of ICT professionals in government. Although some officials expressed eagerness to find better ways to provide IT support service to their staff, the retaining IT staff is difficult. The monthly payment for the IT position in government an average is around $100, while teaching position at a university is around $250, and the salary for an IT position in the private sector starting from $250-$400. Additionally, the private sector offers chances for the promotion and the increasing of salary up to $800 (World Bank Group, 2010). Therefore, young ICT graduates tend to shift their work to the private sector or have part-time jobs.

B. E-Service of NGOs

Beside the e-government, some NGOs have also provided e-services. The Open Institute is the first and the only non-governmental organization that provide computer program, e-learning and electronic channels for information sharing and discussion in Khmer language. The Open Institute was established in September 2006 and had the official register at the Ministry of Interior on December 2006. The Open Institute recognizes the participation of citizen in political and social movements, with freedom of expression and freedom of accessing to information, are fundamental for social justice and democratic.

The Open Institute was set up with its **vision** that a country in with widespread access to high quality of education, information, communication, and technology lead to a more developed and justice society. To achieve the said vision, The Open Institute has **mission** to ensure the benefits of technology for the advance social and economic in Cambodia by enabling widespread use of technology in using local language, improving access to education and quality of education in using of technology, using technology to facilitate information sharing and communication as tools to build a more equitable society, and expanding Khmer lexicography, ensuring access to all sources, and developing on existing materials. The **goals** of the Open Institute are to make the Khmer language available; to offer affordable computer applications, content management systems, training materials, and related knowledge resources; to ensure that Khmer lexicography advances at the pace needed by Khmer society, and to make information on key issues of Cambodian society widely available for enabling all Cambodians fully benefit from Information and Communication Technology by enabling the integration of ICT in the Education System; for enabling the improvement of social and gender equality through advocacy and the promotion of information sharing and communication. Open Institute has some significant programs on e-services as follow:

- **Structuring Partnerships for an Innovative Communications Environment (SPICE):** This program funded by USAID, it is set up to build partnership of technology-oriented civil society organisations (CBOs) with private sectors for utilizing the technologies to enhance the delivery of information to the public. The SPICE program, on 6 June 2014, was awarded as **the best mobile solutions for development in Asia** by the Mobile Solutions Forum in Bangkok, Thailand. The SPICE program has developed the Interactive Voice Response (IVR) applications to provide information and services by answering the phone with pre-recorded information messages. IVR is a well-established technology in western countries and it is the first large-scale deployment of this technology for development purposes to improve the lives of their beneficiaries through mobile phones. One service has been developed to inform Cambodian voters where and how to vote during the 2013 national elections. During that election, there was more than 600,000 citizens used this program.
  Another application is being used to decrease infant mortality by keeping mothers informed of potential risks during the first month of life of their newborns. Two other applications was/being designed, one is for an early-warning system for farmers facing natural disasters, second is for educating migrant workers on the opportunities and the risks of the migration. The International Labour Organization has used the platform to inform Cambodian garment workers of their legal rights. This program helps civil society organizations across Cambodia have access to highly skilled resources. These kinds of programs can also benefited to disabled people with blind to know what to do and to ethnic minorities who are not able to read, could understand their rights.

- **Khmer Software Initiative:** Khmer Software Initiative is an essential program for supporting all programs of the Open Institute. "Language will not be a barrier to access technology, development and learning" is the **vision** of this program. And its mission is to ensure that local language technology is available to as many people as possible, and to be used for the cultural, educational and economic growth.

- **Open Schools program:** With the belief that "the effective use of ICT can improve the quality of education", the Open Institute in cooperate with the Ministry of Education, Youth and Sport implement the Open Schools Program to improve the quality of education through the use of ICT.

- **Women's Empowerment for Social Change:** Women's Empowerment for Social Change is one of the programs at the Open Institute. The aim of this program is to improve social and gender equality

through advocacy and the promotion of information sharing and communication. Women's organizations and women activists can build a greater synergy through the open space for discussing and sharing women's issues on Women's Web Portal. By this program, women can exercise their rights, build capacity to be self-sufficient, and improve their participant in social, economic and political field. In addition, women will also have chance in joining discussion forum regarding the women's issues and conducting research on women and ICT.

- **ICT4D Cambodia Network:** ICT4D is stand for Information and Communication for Development. It is an approach of using various forms of communication technologies in development work to improve the life and to narrow the big gape between the developed and developing world by "accessing to new technology" and "building capacity in using ICT".

3.2.2. Country Specific (Potential) Demand for e-Services (any e-Service related to women)

Although there are quite numbers of the government ministries set up website for their agencies, yet there is any website has been designed specifically for the benefit of women. The Ministry of Women Affairs should play the important role in providing e-services to women. However, this ministry seems fail to accomplish her role and to follow the MDG. Since 2009, the ministry was rated as "the behind ministry" (survey conducted by NiDA and JICA, 2009). Until present, there has not any progress of the website development has been made. The website cannot be accessed, as it is under construction.

One of the reasons of having less public e-services for women is that there is only few numbers of women participating in ICT unit. This should be resulted from lacking of gender awareness for the level of ICT decision-making. The result from survey in 2009 by NiDA & JICA shows that out of eleven ministries, there were only two ministries had female staff at ICT unit. The social attitude towards women on involving in the technology fields is also the barrier for women participating in ICT. The survey conducted by the Open Institute in collaboration with the Ministry of Women's Affairs (MoWA) and Ministry of Education, Youth and Sport (MoEYS) in 2010 on Women and Information Communication and Technology show that the proportion of female students graduated Bachelor and Higher Degree in ICT in three majors (Computer Science and Engineering/Information Technology, Electronics and Electrical Science, and Media and Telecommunication) was less compare to men. There was only 9 percent in the year 2005-2006 and 17.4 percent in the year 2008-2009.

According to United Nations E-Government survey (2010) Cambodian has no real e-government services for providing to its citizens and the majority of websites contain e-information and at the beginning stages of engaging citizens with polls and feedback forms only. Thus, the considering of providing e-services for women would even not at the stating point. In helping the Royal Government of Cambodia to provide some e-services for women, although it's limited, some NGOs, especially the Open Institute, has provide some e-services, as listed below:

♦ **Women's Empowerment for Social Change Program** of the Open Institute is to promote gender equality in a society in which women can exercise their rights, build capacity to be self-sufficient, and improve their participant in social, economic and political life. The Women's Empowerment for Social Change Program has been implementing four programs including i). Women's Web Portal, ii). Women's Forum, iii). ICT/Computer Training and iv). Gender and ICT research. These four programs were set up to share the information of women's issues with the expectation to lobby for regulations and policies to support gender equality. This program is targeting women's organisation, female commune council members and government officials, female teachers and students.

i). The Women's Web Portal: The Women's Web Portal (http://women.open.org.kh) has been severed as a platform for the open discussion and providing the expression of interest related to gender and social development. It makes the availability and accessibility of the local news/medias. There are more than 2,000 articles related to gender issues, available on the portal, include economy and development, laws related news, health, domestic violence, social security, information technology, elections, human trafficking, editorials, gender, education, capacity building, talent of women and men, and so on. The articles on the Women's portal are regularly updated. The Women's Web Portal provides communication functioning in three means: mailing list, online forum, and web blog. Till date, there are more than 400 members of gender mailing list (gender@lists.open.org.kh) with more than 1,000 discussion posted. The online forum discussion covers more than 20 topics, while the web blog covers around 40 topics. Mailing list is found to be the most useful electronic discussion by using email system. It is one of the most convenient technological tools for discussing and sharing information and knowledge. There are two sub-mailing lists have been set up for this mailing list program (Gender and ICT and E-Learning development). The gender mailing list is for those who are working on gender related issues, while the e-learning mailing list is for those who are working in the education sector and e-learning area. There are 400 members have been registered in the Gender and ICT mailing list with around 1,000 of discussion posting; whereas, the member of the e-learning mailing list is about 170, with posting of around 400.

ii). Women's Forum: It facilitates and animates electronic and direct discussion between women's organizations and other concerned institutions/agencies to create the largest possible amount of synergies and share information among them. A series of forum have been organized for discussing the important and emergency issues related to women and social development. The participants of the forum are from NGOs, government institutions, secretariat of senate, and media agencies. The findings and recommendations from the Women's forums have been published and share with relevant ministries, senate, NGOs, media agencies and public.

iii). ICT/Computer Training: The aim of ICT/Computer training is to enhance synergies of organizations/agencies working with women. The training courses cover Khmer UNICODE, Open Office application, Internet and Email. The participants of ICT trainings include NGO staff, Government Official, Senate, Royal Palace, commune council members, Court Official, private companies and universities.

iv). Gender and ICT Research: Gender and ICT Research: The Gender and ICT carries research to explore opportunities and obstacles of women in accessing to ICT. The research's findings and recommendations to be distributed and submitted to women's organizations and government for policy formulation and further actions.

◆ **The Gender Based Violence (GBV)** of the Open Institute has been set up to empower women's organization in Cambodia in using information and communication technologies (ICT) for reporting GBV incidence, and to assist RGC's in responding and implementing the National Action Plan to End Violence against Women. The Gender Based Violence (GBV) project implemented by the Open Institute in cooperation of the Ministry of Women's Affairs and the National League of Communes/Sangkats (NLC/S), in 379 communes of 4 provinces in Phnom Penh, Battambang, Siem Reap and Kampong Thom, with more than 10,000 councilors. It is lead and funded by the Association of Progressive Communications (APC). The project has set up Ushahidi platform (http://gbv.open.org.kh/) for widely uploading and retrieving information, news, and reports related to violence against women with visualization and interactive mapping. Ushahidi is the first database system allowing public view and report GBV cases in Cambodia. Ushahidi has been developed in the

simple feature and in national (Khmer) language, which reduces barrier for users who do not have any foreign language ability, plus it is self- explanations of terms and the way of using it. Thus, it is easy for local people/commune councilors/NGOs capture the important data regarding GBV in their communities. The institutions/agencies working on violence against women and the available services can be also searchable via Ushahidi. People working on and the victim of GBV can access to laws, regulation, policies, and the information of services related to GBV there. The project has provided training courses on data collection, on using and reporting Ushahidi platform to commune councilors and NGOs staff of the Cambodia NGO-CEDAW. It has provided the tools and knowledge that key stakeholders need to record incidences of GBV online that can be viewed by the public, which help to increase awareness of GBV and help to have an immediate intervention. Gender Based Violence project has been considered as the unique project of groundbreaking e-Content in Cambodia. Gender Based Violence project in Cambodia, in August 2013, has been selected to be one of around 500 outstanding e-Content products and applications from 168 countries to enter the second round of the 2013 World Summit Award competition in e-Inclusion & Empowerment category.

3.1.3. Future Directions of e-Services

Being a least development country and low level of providing online services to the public, citizens and business, the Royal Government of Cambodia has committed some following actions:
  - Government supports and encourage all government institutions and universities to establish computer networks and install other ICT systems.
  - Government continue install and upgrade reliable and appropriate ICT infrastructures throughout the country.
  - Government to promote private sector and foreign investments in the ICT infrastructure sector.
  - Government will allow and streamline the use of Voice Over Internet Protocol (VoIP), session Initiated Protocol SIP) and any other latest technologies throughout the country.
  - Government is committed to develop the capacities of rural areas to develop and manage content on ICT systems.
  - Government will establish appropriate legal instruments to check and control improper use of ICT such as spams, viruses, web squatting, fraud, copy right violation, denial of service, unauthorized entry, privacy infringements, misleading media content, and inappropriate broadcasting.
  - Government will streamline a standard reporting system for all public service activities.
  - Government will support and encourage government agencies to develop respective network application systems.
  - Support the e-Government system and mobilize resources for its expansion to all provinces.
  - Government will continue to monitor and ensure that the official information and contents are homogenous and correct.
  - Support and promote for more Community Information Center (CIC) in the country.
  - Introduce standard ICT curriculum in educational system.
  - Support the use of ICT for formal and non-formal education, skills development and adult learning regardless of age, gender, ethnicity, disability or location.
  - Mandate the Ministry of Education Youth and Sports to provide basic ICT training to all teachers
  - Promote the use of ICT to encourage transparency, competitiveness, efficiency in public and private sectors.
  - Enhance the level of ICT literacy among the population; develop regionally competitive ICT experts and ICT savvy human resources; and support Women in Development (WID) in the ICT Sector.

Beside the government, private sectors have played the crucial roles in the development of the country's economy. Likewise, the rapid growing of mobile phones and social media has made the large contribution the social economic growth.

There will be an increasing of e-service of paying, transferring and other transaction of money via mobile phones. According to the National Bank of Cambodia cited in Don, (2012) the services of transferring money via mobile phones have a fledgling market in the Kingdom of Cambodia with about 400,000 users. WING will introduce a new service that allows people pay their restaurant bills by waving on their mobile phones in front of a terminal at the register. Near-field communications (NFC) technology to be introduced by WING's mobile platform for smaller payments, such as purchasing a cup of coffee, according to WING chief operations Officer Anthony Perkins cited in Gregory, (2012). ACLEDA Unity is preparing to expand its own mobile services, enabling people to quickly pay for things just by touching their phone to a point-of-sale terminal (Gregory, 2012).

In Addition, the rapid increase of social media users altered the behaviour of Cambodia people. The users can access media anywhere, any time, through laptops and smart phones. They, especially youth, participate and engage in information sharing and actively give feedback and comments in real time (Sotherith, I. 2012). The advertising via social media, especially Facebook has been seen as the advertising tools for business in the present and the future. There will be more and more companies operating in Cambodia are realising the value of targeted marketing strategies through social media networks such as Facebook. Local companies use Facebook to segment their audience specific to their products offering (Daniel, 2013). Similarly, E-commerce in Cambodia would set to boom in the coming years as a result of the rapid technological development and the eagerness of new generation on new technology. e-business and e-commerce will make businesses more easier, save time and low operation cost.

References

ADB (2014) Asian Development Outlook 2014: Fiscal Policy for inclusive Growth

CSES (2013). Cambodian Socio economic Survey

Daniel, C. (2013, Feb, 12), Cambodia business embraces Facebook advertising. *The Phnom Penh Post.*

Don, W. (2012). Mobile Cash gaining traction. *The Phnom Penh Post, p.9*
General Population Census of Cambodian 2008

Gregory, (2012). Mobile phone could replace credit card. *The Phnom Penh Post*

Immanuel, S. H. (2014, June 4). Geeks in Cambodia. *Facebook Statistics Cambodia 2014.* Retrieved from http://geeksincambodia.com/facebook-statistics-in-cambodia-2014/2014-07-11

ITU, (2013). Retrieved from http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx?utm_source=twitterfeed&utm_medium=twitter.co.jp

MoEYS (2004). *Policy and Strategies on Information and Communication Technology in Education in Cambodia*

MoEYS (2010). *Master Plan for Information and Communication Technology in Education, 2009-2013*

MoFAIC, (2014). E-Visa, Retrieved from http://evisa.mfaic.gov.kh

MoWA, MoEYS and OP (2010). *Women and information communication technology in education and employment*.

Muyhong, C. (2013, Dec 2), Government salaries to no longer be paid in cash. *The Phnom Penh Post.*
National Institute of Statistics. (2008). *General population census of Cambodia 2008*

National ICT Policy (2009). Policy Proposal for the Government of Cambodia

NiDA & JICA (2009). The Follow-up Study Report on e-Government Service Deployment Plan for Royal Government of Cambodia

Nripendra, P. R., Yogesh, K. D., Michael, D. W. (2012). E-government adoption research: Analysing challenges and critical success factors. *European, Miditerranean & Middle Eastern Conference on Information Systems,* (pp. 103).

Open Institute (2014). Retrieved from http://www.open.org.kh/2014-07-11

Simon, K. (2012, November o7). We are social. *Social, Digital and Mobile in Cambodia.* Retrieved from http://wearesocial.net/blog/2012/11/social-digital-mobile-cambodia/2014-07-11

Sokhean, B. (2014, Mar 27). The Cambodia Daily. *Mobile Users Top 20 Million, Internet Usage Still Rising*.

Sotherith, I. (2012, Dec, 25). VOA. Retrieved from
http://www.voacambodia.com/content/cambodia-social-media-changing-cambodian-information-landscape/1571656.html

Telecommunication Regulator of Cambodia (2014). Retrieved from http://www.trc.gov.kh

United Nation (2010). United Nations E-Government Survey 2010. (Chapter 4), *World e-government*

rankings (59-81). New York, the UN Publishing Section

World Bank (2014). The World Bank Data Indicator: Retrieved from

http://http://data.worldbank.org/indicator

World Bank Group (2010, March). Cambodia: *Review of Government Information and Communications Technologies (ICTs) Policies and Investments.*