E-Governance: A Key to Good Governance in Cambodia

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Abstract
The paper examined E-Governance, a key to good governance in Cambodia by focusing on the evolution and the barrier progresses of E-Governance in Cambodia. It employed deductive and exploratory approaches along with some interviews with key informants to ensure the impediments in adoptions and implementation of E-Governance in Cambodia. The findings indicated that E-Governance involves people, processes, and results in SMARTER from using Information and Communication Technologies (ICTs) at various levels of the government and other institutions for the purpose of enhancing governance by improving the accountability, transparency, participation, efficiency, and effectiveness of both public and private sectors. The results from the reviews, documents, interviews, and discussions suggested that it be clear the Royal Government of Cambodia (RGC) has achieved certain developments in ICTs though there were some challenges in which effective strategies and actions should be considered to enhance the efficiency of ICTs application as well as implementation of E-Governance in Cambodia.
Keywords: E-Governance, Good Governance, Human Resource Development, E-Governance's Evolution, E-Governance's Barriers, Cambodia

1. Introduction
On 31st December, 2015 is the date that ASEAN countries will be integrated as ASEAN Economic Community (AEC) (Sen, Prime Minister of Cambodia, 2014). After the integration, the community will try its best to enrich ASEAN with one same vision, mission, and destiny. For Cambodia, evolving and implementing of E-Governance are very important in this country to adapt itself beforehand. Over a decade, the Royal of Government of Cambodia (RGC) headed by Samdech Akheamohasenapadei Decho Hun Sen has been trying to determine how to achieve good governance in both public and private sectors. Administrative, legal, and judicial systems have been carefully reformed to strengthen Human Resource Development, Rule of Law, E-Governance, Good Governance, Democracy, sustainable macro-economic growth, and anti-corruption efforts and especially to meet the requirements of ASEAN constitution as well as those of the AEC charter. As we noticed, the E-Governance of two local-level democracy systems of the RGC namely Decentralization and De-concentration (D&D) was carefully applied in Cambodia in 2001 and 2008, but they were reformed during 2009-2012 (Niazi, 2011). Its mission is to make better of the structures, new mechanisms, and administrations of the local governments and to demand good governance.

2. Literature Review
The purpose of implementing E-Governance is to enhance Good Governance. Good Governance is generally characterized by participation, transparency, and accountability (UNESCO, 2011).

2.1. E-Governance
E-Governance, meaning "Electronic Governance", is using Information and Communication Technologies (ICTs) at various levels of the government and the public as well as private sectors and beyond, for the purpose of enhancing governance (Okot-Uma 2000; Bedi, Signh and Srivastava, 2001; Holmes, 2001; Palvia, Shailendra C.Jain; Sushil S. Sharma, 2006). E-Governance also involves new styles of leadership, new ways of debating and making decision on policy and investment, new ways of taking people's comments into consideration, and new ways of organizing and delivering information and services by using ICTs. This can improve information, encourage citizens' participation in decision-making processes, and make the government more accountable, transparent, and effective (UNESCO, 2011).

There are three fields of implementation of E-Governance:**(A) E-Administration** refers to improving of government processes and internal affairs of the public sector with new ICTs-executed information processes;**(B) E-Services** refers to improved delivery of public services to citizens; **(C) E-Democracy** implies greater and more active citizen participation and involvement enabled by ICTs in the decision-making processes (ITA, 2015) .

According to World Bank (WB), E-Governance refers to the use ICTs to serve people and improve interactions in business, industry, and citizen empowerment through access to information or efficient government management. The benefit of this is that it can increase transparency, corruption-free governance,

greater convenience, revenue growth, and cost reductions. Finally, the author review that E-Governance or "Electronic Governance" is the application of Information and Communication Technologies (ICTs) to the processes of government functioning in order to bring about Simple, Moral, Accountable, Responsive, Transparent, Effective, and Reinforcing (SMARTER) governance. So E-Governance it can be called E-Governance SMARTER and its short form is E-G (SMARTER).

2.2. Good Governance (GG)
Good Governance is among other things participatory, transparent, and accountable. It is also effective and equitable, and it promotes the rule of law, ensuring that political, economic, and social priorities are based on broad consensus in the society. Moreover, good governance enables an organization to do its work and fulfill its mission (Subramanian, 2012). According to (WB, 2004), GG is epitomized by predictable, open, and enlightened policy, making a bureaucracy imbued with a professional ethos. GG is also an executive arm of the government accountable for its actions which are strong civil society participation in public affairs, and all behaviors under the rule of law.

The United Nation Development Program (UNDP) notes that, "GG is among other things of accountable, transparent and participatory. It is also effective and equitable. And it promotes the rule of law. The GG ensures that political, social, and economic priorities are based on broad consensus in society and that the voices of the poorest and the most vulnerable are heard in decision-making over the allocation of development resources (WB, 2013). Noticed that the Royal Government of Cambodia's Rectangular Strategy, Phase I (2004-2008); Phase II (2008-2013); Phase III (2013-2018) aim to enhance economic growth, employment, equity, and social justice. The core of the strategy is *Good Governance* by focusing on four areas: (1) Anti-corruption efforts; (2) Law and judiciary reforms; (3) Public administration reforms; (4) Armed forces demobilization (Sen, The Rectangular Strategy of The RGC, 2004, 2008, 2014)".

To sum up, Good Governance should be defined as the governance of SMARTER resulting in efficiency of public and private sectors.

3. Research Methodology
As Punch argued, the assessment or evaluation can best be structured as a series of inquire questions if the research is the assessment of an intervention designed as a solution to some problems. Thus, the current research is framed in the form of inquire questions which can lead to an effective model of the research process (Punch, 2006).The research adopted deductive and exploratory approaches from books, publications from some national and international journals, electronic sources, reports, websites, and sound recordings. NiDA is the institution for ICTs development in Cambodia, and Ministry of Posts and Telecommunications of Cambodia is one of the most important places to conduct the research. Moreover, 25 people were randomly selected as informants for interview and group discussion to clearly indicate the evolutions and hurdles of development of ICTs application as well as implementation of E-Governance, the key to good governance in Cambodia for over three decades. The study took place only in Cambodia from 1979 to 2015.

4. Findings and Discussions
4.1. The National ICTs Policy of Cambodia
National ICTs Vision of Cambodia is well placed to become a globally competitive, knowledge-and information-based society, capable of providing ICTs-based solutions to enhance sustainable socio-economic development in order to integrate ICTs activities in the government (public) and private sectors and to ensure national optimal economic and social stimuli through achieving community framework agreements, which helps promote awareness against global warming. To provide a conducive framework (legal and regulatory) for the public and private, infrastructure investments in E-Commerce capacity should be build by promoting the growth of national ICTs and by developing regionally competitive ICTs experts. We can achieve the objectives of ICTs development by: (1) creating and providing a national framework and policy that will enable ICTs to contribute towards the achievement of national development goals; (2) providing universal services and accessibility to information and communication facilities in the country that will inevitability lead towards global competitiveness in output and productivity; (3) transforming Cambodia into knowledge-based society through the implementation of proper ICTs (Sinawong, 2011).
National ICTs Policy of Cambodia approached to five areas:
    (A)Legal and Regulatory Frameworks will promote the use of ICTs to encourage transparency, competitiveness, and efficiency in public and private sectors. National ICTs Development Authority (NiDA) will be a promoter and regulator of ICTs services. NiDA encourages all agencies to actively implement their ICTs plans, promotes deregulation of the telecom and other relevant ICTs sectors, and supports the use of broadband and more value-added ICTs services.
    (B) Human Capacity Development will support the use of ICTs for formal and non-formal education

including skills development and adult learning regardless of gender, age, ethnicity, disability, or location in Cambodia. It will not only mandate the Ministry of Education Youth and Sports (MoEYS) to provide basic ICTs training to all teachers, but also promote and support more Community Information Center (CIC) in the country. Moreover, radio and television as teaching and learning tools will be promoted for all citizens, and standard ICTs curriculum in educational system is to be introduced throughout the country.

(C) Content Development will support the E-Government system and mobilize resources for its expansion to every province in the country. Suitable policy directives will be developed to encourage each agency to promote quality content on ICTs systems. Government will support and encourage its agencies to develop respective networked application systems. NiDA will oversee the standardization of these application systems in order to integrate within the umbrella of the E-Government system already in place. The RGC will continuously monitor and ensure that official information and content about the country are homogenous and correct. The RGC should develop and support a standard Khmer UNICODE-based characters system to be adopted in all ICTs applications and systems. The RGC is committed to broaden the capacities of rural areas to develop and manage the content of ICTs systems. Government will establish appropriate and legal instruments to check and control any indecent use of ICTs such as viruses, spams, web squatting, frauds, copy right violation, unauthorized entry, denial of services, privacy infringements, misleading media content, and inappropriate broadcasting (Seng, 2008). The RGC will streamline a standard reporting system for all public service activities.

(D) ICTs Infrastructure: The RGC will continuously install and upgrade reliable and appropriate ICTs infrastructures throughout the country. It will actively promote private sector and foreign investments in the ICTs infrastructure sector and establish the Cambodia's Network Information Center known as CAMNIC. NiDA will work closely with the Ministry of Posts and Telecommunications of Cambodia (MPTC), Camnet, and the Asia-Pacific Network Information Center (APNIC) to carry out and manage this activity. The RGC will allow and streamline the use of Voice over Internet Protocol (VoIP), Session Initiated Protocol (SIP), and any other latest technologies throughout the country. The RGC will support and encourage all universities and government agencies to establish computer networks and install other ICTs systems. NiDA, as a promoter and regulator of ICTs activities in the country, shall be responsible for managing Country Code Top Level Domain – ccTLD (.kh). Therefore, NiDA shall work closely with all relevant agencies.

(E) Enterprise Development: Import tax rate on ICTs equipment and systems will be reduced. The RGC will allow 100% equity shareholding of ICTs enterprises by foreign partners. The RGC will support, encourage, and also promote E-Commerce facilities. The RGC will provide special support to small and medium enterprises to adopt and use E-Commerce systems. The RGC will take appropriate measures to ensure efficiency, privacy, security, and reliability of E-Commerce systems based on international interoperable standards, especially for electronic payment. The RGC will introduce reforms and re-organization of banking and financial institutions to boost credentials and trust for the new economy. The RGC will work out supportive policies on local production of ICTs hardware. The RGC will put in a special investment package guidelines for investors in the ICTs sector. The RGC will encourage financial institutions such as banks to devise lending mechanisms to promote loans for small entrepreneurs in the ICTs sector (Seng, 2008).

4.2. The Evolution of E-Governance in Cambodia

The major events which facilitated the development of E-Governance in Cambodia by concerning application of ICTs are as the following (NiDA, National Information Communication Technology Development Authority Cambodia, 2013):

- ➢ *1979: The Royal Government of Cambodia (RGC) got victory from Kampuchea Democratic (E-Governance in government functions was unclear).*
- ➢ *1991: Paris Peace Agreement (It was a symbol of yellow line for the RGC to practice the first stage of ICTs application as well as implementing E-Governance in Cambodia).*
- ➢ *1992*: Ministry of Posts and Telecommunications of Cambodia (MPTC)**,** Fixed Phone, and International gateway.
- ➢ *1992*: Casacom, 900 GSM - Mobile Phone, also known as SAMART (016) - (about 100,000 subscribers); Camtel, Analogue Mobile Phone (about 1,000 subscribers); (1995) Camintel, Fixed Phone and Wireless Local Loop (WLL) (9,000).
- ➢ *1993*: Camshin,Wireless Local Loop (WLL);(1998) Camshin, GSM 900 - 1800 Mobile Phone (about 200,000 subscribers).
- ➢ *1995*: The Royal University Phnom Penh initialized IT and won "The Best IT Education Institute" in 2011.
- ➢ *1997*: CamGSM, GSM 900 - 1800 Mobile Phone (about 600,000 subscribers).
- ➢ *2000*: Agreement on E-ASEAN was signed on November in Singapore. The agreement focused on ICTs infrastructure development of ASEAN to promote E-Commerce, E-Service, investment in ICTs, and human resource development for E-Governance (Sen, Speech of Samdech HUN Sen (Opening

Ceremony on E-Government for Minister Council), 2004).

➤ *2000*: National ICTs Development Authority (NiDA) was established in Cambodia. It is the authority responsible for making ICTs policies and strategies to not only promote ICTs for all public institutions, private sectors, and government ministries but also organize and administer the E-Government.

➤ *2001*: Cambodia was classified as *emerging*, a readiness country, characterized by the need to build basic ICTs infrastructures and ICTs literate workforce (according to ICTs readiness assessment by ASEAN).

➤ *2002*: Government Administrative Information System (GAIS) computerized the administrative by: *(1) Electronic Approval System:* allowing government ministries to exchange document internally and externally, lower the use of office equipment, and make administrative affairs (electronic approval, electronic mail, online posting information, storing and managing documents, etc.) easy and fast; *(2) Real Estate Registration:* keeping track real estate transaction including price and tax paid; *(3) Resident Registration:* keeping trace and record of resident, family composition, and jobs for compulsory education for school age children and collecting income tax; *(4) Vehicle Registration:* keeping trace of vehicle ownership, tax paid, and safety inspection; *(5) Presence of Government on the World Wide Web:* the National homepage of the government provides information about government of Cambodia, King, Prime minister, Senate, National Assembly, organizations, and other news or institutions.

➤ *2003*:The government adopted a policy to use ICTs as a potential enabler for national socio-economic and social development by: *(1)* promoting the use of modern technologies to enable responses to the current needs in all sectors; *(2)* Using ICTs to serve and meet the daily needs of the people in short term; *(3)* Promoting the use of ICTs in public sector to provide quick responses, efficiency, transparency, and good governance; *(4)* Cambodian ICTs policy following with the digital divide opportunity which focuses on five core development agendas of Wide Area Network (WAN) - first stage, Phnom Penh-WAN (1) and Ministries-WAN (27); second stage, Provinces-WAN (23); third stage, Districts-WAN (185); fourth stage, Communes-WAN (1.622); last stage, Villages-WAN (13.866).

➤ *2004*: The RGC put ICTs sector into Rectangular Strategy for Cambodia Development Phase II by setting up six technical measures: *(1)* investment to other infrastructure, fiber cable optic to rural areas; *(2)* proposing national standard for construction planning and operation of ICTs (standard systems and norms for using computer technologies and internet); *(3)* promoting and increasing broadcasting systems; *(4)*providing open opportunities to private sectors for development ICTs; *(5)* upgrading human resource in ICTs for better implementation of E-Governance; *(6)* increasing awareness of ICTs for the whole country by preparing ICTs programs from primary school to university on Information Technology (IT) and carrying out the public progresses (Sen, Speech of Samdech HUN Sen (Opening Ceremony on E-Government for Minister Council), 2004).

➤ *2006*: The RGC established the National Strategic Development Plan (NSDP) during 2006-2010. It consists of all aspects and sectors of the nation's development including the use of ICTs in all aspects of governance and the government. For the Cambodian ICTs sector growth in long term running, what Cambodia short/medium and long term priority needs are the ICTs projects that employ Cambodian nationals, civil servants, web designers, IT consultants, system engineers, hardware technicians, and some other specific needs such as:*(1)* standardization, inter-connectivity, and inter-operability; *(2)* wider distribution of the Khmer Unicode and development of local contents and applications; *(3)* IT security awareness and protection from viruses, illegal attacks, etc. *(4)* increased computer literacy through offices and educational system; *(5)* affordable last-mile solutions to reach out to rural villages (Miyata, UNDP 2006).

➤ *2009-2013*: There was an administrative reform by promoting ICTs to serve people ensuring their well-being and the prosperity of the nation through the public administration as an effective public service provider for service receivers, citizens (CAR, 2014).

According to NiDA, E-Government Project Phases are divided into four phases: *Phase 1* (2000-2004), Governmental AIS (Administrative Information System) enhancement; *Phase 2* (2004-2008), Provinces AIS enhancement (part1=10 provinces); *Phase 3* (2009-2012), Provinces AIS enhancement (part2=14 provinces); *Phase 4* (2013-2017), Rural AIS enhancement.

The New National ICTs Policy-2015 (ASEAN integration year) aims to achieve the following objectives (NiDA, National Information Communication Technology Development Authority, 2014)**:**

• Provide a clear ICTs legal framework for every citizen and key stakeholders.

• Enhance the national awareness level of ICTs as to the role and potential of ICTs, with emphasis on sustainable development, in the empowerment of people and in enhancing governance.

• 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 of the Cambodian between the populations living in the capital and those in the provinces/rural areas, which is closely linked to the existing digital divide of information accessibility (development of basic infrastructure on a nationwide level).
- Increase the competitiveness of Cambodia's 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 ICTs.
- Encourage the development of the national ICTs industry by facilitating the widespread adoption of ICTs applications and implementation of ICTs development.
- Provide the availability of ICTs access points in all areas and implement cost-effective ICTs.
- Reduce public administration costs and improve the quality of public services of Cambodia governance through the application of ICTs.
- Forward locally the development of human resources necessary for the adoption of ICTs and a national ICTs industry.
- Enforce the WID (Women in Development) within the scope of ICTs.
- And enforce the awareness of the role ICTs 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 ICTs Policy.

To achieve the objectives stated above, the ICTs Policy (year 2015) incorporates the following measures: by NiDA

(1) **ICTs Framework:**

(A) ***Develop a national ICTs legal and regulatory framework to ensure national economic and social stimuli:*** It contributes to the development of the Cambodian economy through the strategic national adoption of ICTs, achieved by consolidating a system to facilitate this. Overall, it also divides ICTs into key related sectors and encourages the establishment of ICTs strategies as well as ICTs legal and regulatory framework for each sector such as E-Government, E-Commerce, E-Industry, E-Society, and E-Education for the appropriate and effective application of ICTs. Aligned with Cambodia's constitutional stipulation, legislative, and regulatory environment and consistent with regional and global best practices, it is necessary to establish and maintain an enabling legal and regulatory framework.

Key Point: To enable the earlier achievement of the ICTs Policy-2015 objectives, the identity of NiDA as the organization in charge of promoting ICTs policy is recognized, and the partnership between NiDA and other line-ministries is enforced. The jurisdiction of each line-ministry and agency related to ICTs is clarified in detail. Moreover, for each respective field, ICTs policy, strategy, and/or an action plan on short- and long-term basis are developed. These matters are included in the ICTs legal and regulatory framework.

(B) ***Develop measures to achieve the E-ASEAN Framework Agreement, as well as to ensure efforts to keep pace with the ASEAN level of ICTs technology through the promotion of a national ICTs innovation:*** ICTs makes a commitment that the RGC has done its work for the international community, especially among the ASEAN region. Compliance with international frameworks (such as WTO and WIPO) is pursued while prioritizing the E-ASEAN framework, ensuring a commitment at the regional level. The set timeframes for national strategies comply with those set for promoting ICTs policy. In addition, investments in the development of the necessary human resources receive emphasis. At this time, the establishment of an ASEAN economic community (goal scheduled for December 2015 ASEAN integration) is imminent, and new advances in technology and innovation are constant. There is no area in which Cambodia country appears to lag behind in term of its level of technology. For this reason, gathering information on new technologies as well as the development of human resources such as ICTs engineering and R&D is consistently promoted. These progresses can be accelerated only through the implementation of ICTs capacity building in both human resources and infrastructures. It is necessary to increase the number and capability of the ICTs skilled Human Resource (HR) bases for Cambodia. In case of infrastructures, efficient and sustainable national ICTs infrastructures are promoted which are appropriate with the majority's needs, and complaints of regional and international standards should be taken into account in terms of adequate accessibility and cost reduction as a primary objective.

Key Point: The most important primary objective for Cambodia is to not lag behind the ASEAN level of ICTs development. With respect to the necessary HRs, for the time being, Cambodia needs to rely mostly on international (private and public) supports. (This point is developed in detail as ICTs Cambodia's strategies). However, selecting the appropriate adoption of ICTs is one of the keys to successes in accelerating the development of the ICTs in Cambodia.

(C) **ICTs Service:**

(a) Improve government services through the application of ICTs: E-Government is improved with a well-established information security system. By means of this facility, it is possible to provide a considerable amount of information on the country and its government; therefore, facilitating two-way communication between the government and the citizenry or vice versa is no more a problem. Through the application of ICTs, the public administrations administer their activities more effectively and also provide services for the public more conveniently. The RGC is responsible for implementing these measures, ensuring that adequate policies are put in place to maintain the national information security system. The establishment of an E-Government backed by a reliable information security system will also make the RGC more effective, efficient, trusted, and transparent. The public sector, which becomes the first user of E-Government, is able to obtain information regarding the public administration and its activities. E-Government is established to ensure a greater transparency in Government and as a means of providing services nationwide. By adopting E-Government, much cost could be reduced for both the providers and the users; productivity of the public administration will increase, and the most importantly inter-individual as well as inter-institutional cooperation is enhanced, allowing for more effective communications. Developing and promoting E-Government will be able to increase the accountability, transparency, and participation of the public and private sectors' administrative management. However, it is necessary to keep in mind the existence of certain groups might be adversely affected by the introduction E-Government.

(b) Support the use of ICTs in the private sector and the growth of E-Commerce: the application of ICTs among small and medium enterprises is encouraged, and necessary basis is developed for an optimal E-Commerce environment for business. To successfully achieve this, necessary legal and regulatory framework is established, and proactive initiatives are taken to encourage ICTs adoption. The definitions and rules regarding digital signatures, electronic commerce, and electronic payment are the basics of E-Commerce, and as such they are a part of public campaigns, and related information is transmitted to the population. Moreover, necessary legal environment for E-Commerce is developed, and additional incentives for the private sector are adopted.

(c) Encourage the growth of a national ICTs industry and its links among the ASEAN region: a national ICTs industry (manufacturing and development of ICTs-related devices and software applications) is fostered and developed to maintain a relatively high level of technology among the regional ASEAN. Jurisdiction of ICTs industry development lies with the Ministry of Industry and Handicraft (MoIH). Provided the prevailing situation, the first step to be taken is to loosen regulations on foreign capital inflow, along with some additional incentives. Accordingly, the development of a national ICTs industry driven basically by foreign enterprises is promoted. Discussions are required regarding whether to mention the partnership with foreign enterprises inside the National ICTs Policy. Engaging in technology transfer, the first five years of ICTs development is devoted to attracting foreign enterprises to Cambodia for ICTs development, and an environment conducive to technology transfer for the people of Cambodia shall be created. To develop and ensure a supply of human resources based on strict guidelines, regulating information security is treated as an urgent priority of Cambodia's ICTs.

(D) **ICTs Infrastructure:**

Develop a reliable national ICTs infrastructure: The basic ICTs infrastructure is developed nationwide to reduce information accessibility gaps currently existing among the Cambodian population. In particular, the RGC seeks to develop an information infrastructure (network development), as well as applications and services to be delivered through the new infrastructures. A "meeting opportunity" is basically required to discuss and consider the roles of sharing and co-existence with international institutions and assistant countries. Also, the functions of the Project Implementation Unit (PIU) are urgently required.

(E) **ICTs Development:**

(a) Enhance the level of ICTs literacy among the population: Towards the development of an E-Society in Cambodia, the key players are given with equal opportunities for the acquisition of ICTs education. The application of ICTs also extends to the educational field benefiting schools and other educational institutions. The specialized instructions of ICTs are promoted as well. First, the training of educators with the capabilities to focus on the actual educational field is undertaken in order to achieve an "ICTs education for Cambodian people by Cambodian people". Second, facilities are provided to expand and develop the teaching of ICTs at all levels of formal and informal education and training in the national system. Third, ICTs training is promoted and supported for political decision makers, community and civil society leaders, as well as private and public sector officials. Fourth, special attention is given to facilitate new learning systems and ICTs access opportunities for women and youth, the disabled and disadvantaged, and illiterate people, in order to address social imbalances.

(b) Develop regionally competitive ICTs experts and ICTs savvy human resources: It is strongly

demanded to develop a pool of ICTs experts and other personnel for the national industry as well as for the sectors where ICTs applications are to be implemented. To maintain a respectable ICTs level among the ASEAN region, it is necessary to ensure the supply of national ICTs experts. Training programs orientated towards the development of experts rich in specialized knowledge and skills are strongly promoted, along with the creation of a vast pool of brilliant ICTs experts. To keep up with the efforts of developing an ICTs infrastructure and a competitive ICTs industry in the country, the training and development of ICTs experts is an urgent issue. The RGC enforces the development of action plans related to the training of experts for both short and long terms. The initial step for the Cambodian Government is to create a position of Government Chief Information Officer (GCIO), to oversee the development of a core human resource of skilled ICTs workers within the country, and to raise their status as needed.

(c) Support WID (Women in Development) in the ICTs Sector: In order to develop a pool of ICTs experts for the national industry and related sectors, it is essential to involve, within the process, the presence of women. Specifically in the ICTs field, women are still not being involved as they should receive. As stated and agreed at the "International Convention on the Elimination of all forms of Discrimination against Women", men and women are equal and therefore they are equally treated in the work place. As demonstrated in many countries, women are well capable of performing actively in specialist fields. Cambodia's biggest asset is in its people, therefore assuring the performance of both men and women is crucial for the development of the country as a whole. It would be a waste of good human resources not to utilize women suited to the ICTs industry. Furthermore, developing a suitable environment for women to work in is equally important. The RGC develops a resource pool of ICTs women experts and other personnel. As well, the development of action plans related to the training of women experts for short and long terms is encouraged.

(F) **Commitment to Global Issues:**

Encourage an awareness of ICTs as a tool for fighting global warming: The RGC actively pursues initiatives through the development of ICTs to combat global warming, which is already at a critical stage. By finding applications for ICTs, a low-carbon dioxide society with reduced environmental footprint is created. Specifically, this strengthens the commitment to make the private sector, public institutions, and general public more aware of the close relationship between the national challenge of ICTs applications and measures to stop global warming. The Government of Cambodia raises its national profile before the international community by means of promoting ICTs development as one of their most important measures in their efforts to reduce global warming. In addition, the effects of global warming (including droughts, torrential rain, and floods) represent an urgent issue for the Cambodian people (NiDA, National Information Communication Technology Development Authority, 2014).

Current Technologies in Cambodia: *Fixed Phone:* (TDM, Soft Switch, Optical Fiber, Copper, and Satellite); *Mobile Phone:* (GSM 900, GSM 1800, 3G, CDWA, and 4G); *Internet*: (Dial Up, xDSL, 2.5G/3G (WCDMA), CDMA, WiMAX, and FTTH(MPTC, Sithy, Sieng, 2011, 2014).

4.3. The Barrier Progresses in Implementing E-Governance in Cambodia
E-Governance has been improved from year to year. However, there are still some hurdles in implementing E-Governance in Cambodia by concerning applications of ICTs as following (NiDA, National Information Communication Technology Development Authority Cambodia, 2013):
- the RGC's competency of public administrative management by implementing ICTs to constantly meet the evolving needs of the people and international competitiveness;
- the change of behavior and attitude of the service providers and service receivers;
- the rule of law in the framework of effective public service providers, transparency, and accountability;
- coordinating sectorial reforms with national reforms;
- harmonizing and aligning development partner's support, financial resource mobilization, and management;
- and the development and deployment of human resources to sustain implementation that were the challenges of Cambodia in implementing E-Governance (Bunthoeun, 2010).

According to JICA's and NiDA's survey report (2009), survey on ICTs development in some ministries showed mixed results (widened gap). Some stayed or reached a score level of "advanced", "average", and "behind". Low score levels are due to unawareness of the use of ICTs, no nomination of high-rank officers for responsibility, and less budget allocation for ICTs development. The following are some challenges found:
(1) **ICTs management unit/personnel:** unready (understanding concept, retaining skilled ICTs personnel, salary and incentives, and women engagement).
(2) **Leadership in ICTs promotion:** long-term commitment and cooperation (negative attitude towards ICTs usage, inadequate authority of ICTs personnel (empowerment), lack of collaboration across government agencies (duplication), and information sharing on personal relationship).

(3) **ICTs literacy:** half of the government staff have only basic skills, and are unwilling to work.

(4) **Lack of basic infrastructure:** National Information Infrastructures are needed for safety, security, and cost benefit.

(5) **Lack of expertise:** for Local Area Network (LAN) and Wide Area Network (WAN) for inter-ministry, ICTs equipment procurement to ensure quality control and standards.

(6) **Internal and external resource difficulties funding in ICTs promotion**: low capacity to create proposals.

5. Conclusion and Recommendations

Good Governance is noticed to be an ideal which is difficult to achieve in its totality. ICTs, finance, other resources, and sustainable operations must be carefully taken into consideration for implementing E-Governance to ensure the development and deployment of human resources. As we have already reviewed, E-Governance is the application of ICTs of government functions in SMARTER. In reality, Cambodia today is trying to develop ICTs for the purpose of E-Governance for Cambodia, E-ASEAN for the region, and E-Globalization for the world. From the reviews of interviews and discussions, it is believed that governance by using ICTs can make the governance itself better (Nasy, 2014). E-Governance is an application of governance which is an important key to Good Governance (GG) in Cambodia for national and local level governance. Moreover, E-Governance is a key to good governance, while the GG is also a high potential key to alleviate poverty for Cambodian people (Vannak, 2014). Nowadays, for Cambodia in the time of modern high technology of globalization, E-Governance is a key to good governance, and the GG is the most important sector for poverty reduction of the Royal Government of Cambodia Strategy (Vanna, 2014). Due to the necessity of the ICTs application, all leaders and managers who are first prioritized are trying to pay great attention and to adapt themselves to ICTs. For any staff and Cambodian youth, he or she should try hard to update his or her literacy on ICTs to be on the day of world's development. The results from this paper should be referred as preliminary findings, and prospective empirical study is strongly suggested.

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