



Empirical Investigation on Adoption of E-governance Services in Developing Countries and Ethical Issues

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Abstract- *E-government is a tool and technologies for the use of information and communication to improve and development of government activities and their transformation. The endeavor to adopt e-government can be mapped as some logical sequential stages. E-government is necessary for the developing countries as most of the developing countries do not have the required basic infrastructures and technologies for going online. This paper presents that government's communication efforts have positive impact on public trust level. This study is focused on e-governance implementation in developing countries such as south Asian countries including Nepal and influence of ethical issues. The findings of this study indicated that the governments all around the world are stirring toward providing public services through electronic avenues. E-government provides opportunities to deliver various services more effectively and better serve citizens. In developing countries, e-government initiatives provide services that have been previously inaccessible to their people.*

Keywords: *E-governance, public participation, public service delivery, ethics*

I. Introduction

E-governance has the potential to change the face of government thoroughly. A mature and effective government has the capacity to form new methods and techniques for participation in government electronically combining together citizens, businesses, and all levels of government in a country [31]. E-government can be used as a tool to provide faster and better communication, increase competition, minimize unrestricted power by efficient services, and allowing public to conduct transactions among themselves. The governments all over the world are moving toward providing public services through electronic means. E-governance has included as information-age model of governance that seeks to realize processes and structures for harnessing the possibilities of information and communication technologies (ICTs) at various levels of government and the public sector for providing good governance [5, 28, 42]. Means and Schneider (2000) [36] define e-government as the relationships between governments, their customers and their suppliers by the implication of electronic means. The ultimate goal of e-governance is sharing of information between government agencies to conduct government-to-government (G2G) transactions so as to simplify the navigation of government-to-citizen (G2C) and government-to-business (G2B) transactions [49]. The basic principle of e-government is that people can communicate with government officials and access government services via the internet and other information technologies. The introduction of e-governance provides operational processes, flowing information held by government agencies into electronic means. The e-government activities can be well understood through four broader of perspectives such as e-service, e-management, e-democracy and e-commerce [13]. There exists four domains of e-government namely governance, ICTs, business process re-engineering and e-citizens.

The United Nations (UN) and the American Society for Public Administration (ASPA) formulated the different models of e-government development in 2002 [55]. The models have five-stages. The first stage is 'emerging' stage where electronic government presence is established through internet. The second stage is 'enhanced', in which the number of government web sites increases in number and become more active. The users can download forms and interact with officials through the web in the 'interactive' stage. The next stage is 'transactional' stage, when the users have the facility to make online payments for transactions. The final stage is known as 'seamless' stage, where e-services are integrated across agencies. The e-governance movement in developed countries is mostly generated by the availability of internet based technology, through which it becomes possible to access government organizations remotely with cheap cost. But, for internal operations, government organizations were already using ICT based systems [47].

Majority of the developing countries do not have the basic infrastructure and technologies for going online and in the absence of Internet infrastructure. Individuals do not have a choice connecting to the web [45]. A country needs to make sure of availability of infrastructures and knowledge for going online. The basic infrastructures include computers, telephone lines, mobile phones, broadband connections and so on. The higher level of access of these resources in a country will create

a supporting environment for going online. A public access to the available facilities and knowledge need to be ensured. E-government as a vehicle of modern paradigms of administration and politics that can be integrated meaningfully into existing measures aimed at promoting public-sector reform, democracy, and economic development [25].

The purpose of this paper is focused on trust of people towards government through electronic communication and e-governance implementation in developing countries such as Nepal and influence of ethical issues. Many governments in the world are developing more complicated ways to promote active public participation in governmental activities, offering them more effective access to e-government services. With this change and the rapid growth of ICT, the paradigm has shifted from traditional government to electronic government. According to Gauld et al. (2010) [20] governments around the world are motivated to promote public interaction because of the accessibility and affordability of ICTs. E-government services offer people's transparency in the process of governance, such as time savings through efficient services; simplification of procedures; improved office management; and friendly attitudes of workforce. E-government development only implements a new IT system but also aims to improve public service delivery, improve access to information and services, and increase government transparency and accountability [12, 53]. E-government services can vary from the simple to the complex services and transactions at various departments. The delivery of e-service with the support of ICTs, thus, can be in different formats. It can be shifted from e-government portals, e-voting, information kiosks to electronic stampings etc.

II. Related works

The success of e-government depends upon the public desire to adopt this innovation [7, 16]. Governments need to investigate and understand the factors that influence people to use e-government services instead of traditional communication. Many governments still face the problem of a low-level of adoption of e-government services by their citizens [23, 4]. A number of e-government researches focuses on the supply side (e.g., government infrastructures and policies), not on the demand side (the citizen's perspective). Some researchers [26, 60] have indicated that the e-government literature ignores the fact that human beings have to use these systems. Majority of the previous study has pointed out issues in e-government development and delivery [20, 26, 35]. Some studies have categorized nations in terms of technology or policy development [20, 17, 32] and others have investigated national and local e-government services along with development progress [40].

The successful implementation of e-government services is crucial for governments of developing countries [23]. Akman et al. (2005) [1] pointed out that the success of e-government adoption depends on people. Similar to any other innovations, the establishment of e-government brings a number of challenges for citizens as well as for governments [61]. These challenges involve lack of awareness of e-government services, access, trust, security concerns, and the digital divide (Cater and Weerakkody 2008; [7, 29] and are obstacles that public must surmount in the implication and adoption process. Some studies conducted by Choudrie and Dwivedi (2005) [9] discovered that the influence of these challenges varies in different countries in the implementation of e-government services. Belanger and Carter (2008) [8] investigated that although governments are increasing e-services, people are still more likely to use traditional methods. Furthermore, Kumar et al. (2007) [34] focused this dilemma, finding that the rate of adoption of e-government has decreased below expectations around the world, though some countries are doing better than other nations.

Previous researches seeking to identify success factors of e-governments established that resolving technical factors such as compatibility and complexity of the system is insufficient for successful e-governments. Nour et al.(2007) [41] suggested efficiency, effectiveness, access, accountability, equity, empowerment and participation, transparency, availability of services, responsiveness and integrity as critical goals of an e-government, and investigated a relationship between these goals and contextual components such as the level of democratization and degree of e-government readiness. These studies explain that an e-government is considered successful when it realizes these visions and goals. Moon and Norris (2005) [39] found that e-government initiatives are adopted with more ease and less resistance if the concerned authorities are approachable to the innovation. On the other hand, implementing an e-government is more difficult if stakeholders consider new managerial and technological approaches as a threat to their power or position [27]. Organizational changes may be important as success factors in developing countries, as shortage of skilled manpower or computer applications in developing countries are largely caused by lack of coordination among stakeholders [21].

Developed countries take advantage from e-government services, but there is still much space for improvement [54]. A number of challenges involved in the adoption of e-government services still exist, which leads to the low levels of the adoption of e-government services. Some researchers [54, 8, 19, 22, 23, 34, 53] have proposed the necessity for more study in the area of e-government adoption. E-government services are believed to bring positive changes with businesses and public. As such, e-government services help to improve the competitiveness of business environment to create intelligent customers, helping businesses save time, enabling a good tool in dealing with corruption. In spite of growing investment globally, adoptions of e-government have been slower than government's expectations [2]. People who had previously used e-government services are returning back to the traditional method, because citizens only adopt e-government, if they believe it to be trustworthy. Public should have a higher level of trust in government and the Internet in order to trust e-government [50]. Trust in technology is the belief that technology can be used to perform desired task satisfactorily. E-government adoption can only take place, when people have a high level of trust both in government as well as in the Internet citizen's lack of awareness regarding benefits of e-government have contributed to the declining rate of e-government adoption [43,

52]. Effective and prompt communication is necessary to make public awareness, knowledge, perceptions, and trust towards e-government services [51].

Developing countries attempt not only to improve public services but also to increase control over people through e-governments [33]. An international development organization also uses an e-government as a tool of driving political reforms and improving market-oriented frameworks in developing countries [25, 33]. Developing countries may worth enhancing a government’s ability by improving public services. In the context of e-government, several researchers emphasize the need for incorporating socio-technical approaches in designing and delivering e-government services [14, 15]. Damodaran et al. (2005) [14] for instance, stated that e-government service delivery according to the needs of the citizens “requires the development of socio-technical sub-systems, combining technology and communication processes which meet the task needs of citizens and the procedural and legal requirements of local government” (p. 9). Dawes (2009) [15], while presenting an e-government framework, affirmed that in addition to tools and technologies, governments must take into account values and policies, and human, organizational, institutional, and societal factors; an infrastructure that suit future e-government.

III. E-governance in Nepal and other developing countries

Nepal is located in the southern region of the Asian continent. South Asian countries are similar in a variety of ways, such as geography, IT infrastructure, literacy rate, and e-government services development and adoption. According to Almakki (2009), [3] Asian countries have challenges, such as the lack of good IT infrastructure as well as cultural issues. E-government is in its infancy in the developing nations, where countries share common challenges in the implementation of e-government services. The goals of the e-government of Nepal are to increase efficiency, effectiveness, transparency, and accountability in enhancing delivery of public services to its people. ICT infrastructure and networks are the backbone to implement e-governance. Nepal Telecom Company (NTC), the state-owned telecom operator, has been the major builder and operator of the national telecom network. NTC along with other private companies provide telecommunication services in the country. They provide the services of land line phone, GSM mobile, C-phone, sky phone, sky data, internet, V-SAT and ADSL. As compared to other sectors, the telecommunication facilities have been enhanced considerably in recent years. The growth of telecom facilities in Nepal is satisfactory but still the rate of use of internet is low. In the meantime, more than 35 internet service providers are providing services and total international internet bandwidth used is in the ratio of 1: 2.25 with 58 Mbps and 122 Mbps for uplink and downlink. More than 8% rural village development committees have lack of telephone facility. Majority of telecom facilities are centered in urban areas of the country.

In five years, all the government agencies in Nepal would be interconnected via network and Nepal will provide public-centric and transparent services for its people [44]. It will establish the knowledge-based society through this. At the end, Nepal will maximize the use of ICT to create values for individuals, organizations and all other parts of society, and create synergy effect through networking. According to the latest E-Government survey by the United Nations (UN), progress in online service delivery continues in most countries around the world. The UN E-government survey 2012 [55] found that many countries have put in place e-government initiatives and ICT applications for the people to further enhance public sector efficiencies and streamline governance systems to support sustainable development. Among the e-government leaders, innovative technology solutions have gained special recognition as the means to revitalize lagging economic and social sectors [56, 57].

Table 1. E-government Rankings in South Asia; Source: UN (2012) [55]

Country	World e-government ranking			E-government 2012
	2008	2010	2012	
Maldives	95	92	95	0.4994
Sri Lanka	101	111	115	0.4357
India	113	119	124	0.3829
Pakistan	131	146	156	0.2823
Bhutan	134	152	152	0.2942
Bangladesh	142	134	150	0.2991
Nepal	150	153	164	0.2664
Afghanistan	167	168	184	0.1701

Table 1 shows the e-government ranking in South Asia as per the UN e-government survey. In 2010 and 2012, UN e-government world surveys ranked Nepal 153rd and 164th, respectively. However, the South Asian region regressed in the 2012 survey and remains far below the world average. Maldives showed the highest ranking in the region. In developing countries, one of the most important reasons for the low-level adoption of e-government services is that the needs and requirements of citizens are ignored. These findings show that like other South Asian countries, Nepali e-government services are still in the developing stage. The government needs to improve its various instruments to attract potential users and determine the influential factors in existing e-government services.

Table 2 E-readiness Index

Country	2010 Index	2008 Index	2010 Ranking	2008 Ranking
Maldives	0.4392	0.4491	92	95
Shrilanka	0.3995	0.4244	111	101
India	0.3567	0.3814	119	113
Pakistan	0.2755	0.316	134	131
Bhutan	0.2598	0.3074	146	134
Bangladesh	0.3028	0.2936	152	142
Nepal	0.2568	0.2725	153	150
Afghanistan	0.2098	0.2048	168	167

Table 2 shows e-readiness index of south Asian countries. Nepal secured 150th position out of 192 countries in 2008 and 153rd position in 2010.

Table 3 Results of Developing Countries, (Source: Hakro, 2009) [24]

Explanatory variables	Coefficients and t-statistics	
	Tax/GDP	-0.056** (-1.841)
Govt. expenditure/GDP		-0.476* (-10.046)
Initial GDP/Head	-0.00006 (-0.428)	-0.0004* (-2.609)
Investment/GDP	0.170* (6.802)	0.164* (7.331)
Growth rate of labor force	0.372* (3.855)	0.369* (4.366)
Fixed Effects		
Azerbaijan	1.861	7.722*
Bangladesh	-1.513*	0.763
Cambodia	-1.697	1.646
China	2.600*	8.476*
India	-0.190	5.390*
Indonesia	-0.658	3.238*
Kazakhstan	-1.862*	5.173*
Kyrgyz Republic	-4.682	4.495*
Lao PDR	0.728	10.113*
Malaysia	-1.104	6.027*
Mongolia	-3.976*	5.545*
Nepal	-2.248*	2.062*
Pakistan	-0.833	4.503*
Philippines	-3.153*	2.054**
Sri Lanka	-0.745	3.618*
Tajikistan	-8.131*	-1.585
Thailand	-0.154	5.574*
Turkmenistan	-0.060	2.000
Turkey	-0.806	4.818*
Uzbekistan	-0.356	5.768*
Vietnam	7.505*	10.260*

Note: t-statistics values are reported in parenthesis are reported in parenthesis *Indicates significance at 5% level
 **Indicates significance at 10% level

Most of the variables are statistically significant at below five percent level of significant except initial GDP per head in tax equation as shown in Table 3. The result presents that both variables tax and government expenditure as fraction of GDP are negatively influences growth rate of GDP, as one fraction point increase in tax and government expenditure will lead to 0.056 and 0.475 percent respectively reduction in growth rates of GDP. The most important and second largest in magnitude towards growth rate is growth rate of labor force, as one percent increase in labor force leads to 0.37 percent increase in growth rate of GDP in both the equations. In the same manner, investment has positive effect on growth rate, as one fraction point increase in investment to GDP leads to almost 0.17 percent increase in the growth rate by both the equations. The lower part of the table shows the fixed effects of every nation, these values are the intercept terms of the equations, elaborating the comparison between the countries. In the tax equation most of country coefficients are insignificant and negative, while in the government expenditure equation except few they are positive and significant.

In the comparison of SAARC region online service index consists very low. Nepal secures seventh position in SAARC region. As per the Report of UNDP (2010) [54], India is successfully maintained first position with 0.3683 index and Bangladesh achieving second position with 0.3556 Index in SAARC regions (Fig. 1).

Comparison Chart of Online Service Index of SAARC Countries

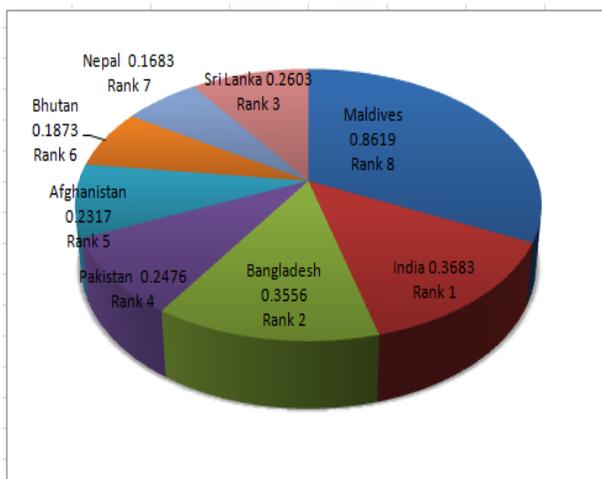


Fig. 1. Comparison Chart of Online Service Index 2010, Source: United Nations E-government Development Knowledge Base, <http://www.unpan.org/egovkb> [58]

The human capital is an important part of e-government adoption in the country. In the perspective of Nepal human capital is not well improved for the development and implementation of e-government system. United Nations E-Government Knowledge Base Report 2010 [37] indicates that human capital index of Nepal is low. The index is 0.582 and Nepal comes up in fourth position among SAARC nations and 153rd position in World Rank. Human Capital index is a fundamental base of e-government development and adoption. The e-government participation index of Nepal is also very low in the comparison between SAARC countries. Nepal is yet to gain success to maintain satisfactory position in e-government participation index. Nepal's e-government participation index is 0.0571 and rank is sixth. Pakistan secured first position among SAARC region countries. In this connection, e-government participation is the reason of e-government implementation problem.

Table 4 ICT Distribution Situation of SAARC Countries (Sources: M.I.S., Nepal Telecom Central Office- 2010, Nepal Doorsanchar Company Limited [38])

SAARC countries	Internet user in % population	Total computer user	Computer user %	Total mobile
Afghanistan	1.76	110743.3	0.39	7898900
Bangladesh	0.36	3511145	2.25	50400000
Bhutan	0.72	17347.64	2.51	251000
India	7.00	36789349	3.18	601223402
Maldives	18.09	80218	20.24	435600
Nepal	1.75	137104.2	0.48	4200000
Pakistan	1.06	768145.7	0.44	97579940
Srilanka	5.46	801812.1	3.76	11082500

Literacy is an important and necessary step of development and implementation of e-government. Nepal is in fourth position with 56.5% of literacy rate among SAARC countries. Maldives and Sri Lanka have maintained first and second position with 97% and 90.8% of literacy rate. According to Central Intelligence Agency, The World Factbook – 2010, the rank of per capita income of Nepal is 7 out of eight countries and world rank is 206. There may be the many reasons in low per capita income in Nepal. The per capita income of Nepal is US\$ 1200. Therefore, this is a big challenge for the implementation of e-government system in the country.

As compared with least developing countries for e-government adoption, Nepal has been in satisfactory position. There may be a number of reasons and issues on e-governance development. Korea government and Asian Development Bank are helping to Nepal for the development and implementation of e-government system. E-government master plan was already prepared but yet to be implemented. Development in online service delivery continues in most countries around the world. The United Nations E-Government Survey 2012 [55] finds that many have put in place e-government initiatives ICT applications for the people to further develop public sector efficiencies and reorganize governance systems to maintain sustainable development. Among the e-government leaders, modern technology solutions have gained special recognition as the means to invigorate lagging economic and social sectors. The overall conclusion that emerges from the 2012 Survey is that while it is significant to continue with service delivery, governments must increasingly begin to reconsider in terms of e-government and e-governance. An important feature of this approach is to broaden the scope of e-government for a transformative role of the government towards consistent, coordinated, and integrated processes and institutions through which such sustainable development takes place.

IV. E-government ethics

The E-governance ethics delivers a way for use of electronic records and electronic signatures in government and its agencies by promoting efficient delivery of government services. E-governance is a step towards better administration by facilitating transparent, speedier, responsive and non-hierarchical system of governance. Better administration tends to effective management of delivery of governmental services and this comes from managing e-governance ethical processes. The e-governance application needs to make the trust of public. It needs to ensure that the data and transactions of the information are safe. The information shared by the public should also remain safe and the privacy of the people needs to be preserved. Whenever an individual gets into any transaction with a government agency, he discloses out a lot of individual information, which can be misused by the private sector and anti-social elements. Thus, the public should be ensured that the information flow would pass through reliable channels and secured network. The nature of trust in e-governance was examined in by Chopra and Wallace (2003) [10] entitled “Trust in Electronic Environments.” Trust is considered a crucial element with regard to social capital, and exists on four levels: the individual (psychological), the interpersonal (one to another), the relational (social glue), and the societal (functioning). The first ethnographic research on social networking sites, was Danah Boyd’s study on Friendster [6]. Some important ethical issues concerning to e-governance are e-communication legislation, e-commerce legislation, e-procurement legislation and database legislation [46]. The e-governance implication needs to make the trust of people. It needs to make sure that the data and transactions of the information are safe. Trust in cyberspace emerges as an important factor, once the communications networks enable unprecedented level of convenience in the workplaces and homes, i.e., online shopping and e-transaction, which may affect the quality of life in a positive way [11, 30]. E-government implementations must reflect on security and privacy to ensure information systems and individual rights are respected. Generally security refers to protection of the information systems resources and controlling access to the information itself [18]. The online culture of disclosure holds important promises for people, including empowerment of themselves and others, the creation of communities of support around shared struggles and the development of a broad ethical sense of responsibility with respect to privacy [48]. Good governance is one of the most important public concerns that the government can deliver to its people. It is one of the fundamental reasons why we have governments and we agree to abide by roles and responsibilities which fall under different forms of governance.

V. Discussion and conclusion

The starting point towards e-government of developing countries is from ensuring the availability of infrastructures and the knowledge supporting the enhancement of e-government, and ensuring the access of the general people to those facilities. There is a low level of adoption of e-government services in developing countries such as Nepal. One of the major reasons is that the citizens lack knowledge about the new e-government services. Awareness is a crucial issue for the use of e-government services. The developing countries should raise awareness throughout the country regarding their e-services through different advertising channels. The empirical results demonstrated out that the respondents share adverse views about updated websites and the satisfactory provisions of electronic resources. In this regard, the government e-services and websites should be updated on a regular basis and incorporated with online chats in which citizens can communicate with experts to gain immediate information about all e-government services. Ethical issues such as greater authentication and identification procedures are necessary for citizens to develop high levels of trust including awareness, security, and privacy of personal information. The successful introduction of e-governance depends largely on the first applications, which should be relatively cheap, easy to implement, easy to use, secured and also should involve a relatively important number of users.

Government should change their focus of attention to evaluate e-government master plan and develop new strategies and leadership for e-governance. Public awareness programs on ICT should be organized to develop a mechanism for quick monitoring and track the progress of the e-government project and ensure reliability, privacy and security. The popularity of ICT is increasing but still implementation is big problem in developing countries. The basic foundations such as human resource, ICT Infrastructure, literacy, awareness, commitment and funds must be improved for the implementation of e-governance. Rural connectivity and ICT use in the rural areas should be expanded through use of technologies such as WiFi, WiMAX, and Voice over Internet Protocol (VoIP). The public expectations and their participation should be considered to success the e-governance. The success of e-government system implementation in the country highly depends on the awareness about the program of development and implementation of e-government. The government of Nepal has been investing significant part of resource in e-government development and implementation projects. The capacity building guidelines take into account of the fact that different districts are at different levels of readiness for e-governance and have different levels of objective. So, the role of the capacity building team is at the program level to provide leadership and vision including policy formulation, preparing roadmaps, prioritization, preparing frameworks and guidelines, monitoring progress and capacity management.

Once e-government services are developed to include people to learn about the rights and to enjoy its convenience, e-government services are creating more well-educated citizens. It can be noticed that such limitations in e-government service is having negative impact on business environment of developing countries such as Nepal. People can participate in policy-making, reach their constituents, and achieve information and services for daily activities from any location if the web sites are favorable to their needs. Besides that, both government and public can reduce the expenses arising from direct, physical government-government interaction. So, the government needs to cultivate the standards of web site design and exploit the benefits offered by ICTs to promote good governance through e-government in the country. In the meantime, the e-government should continuously develop through learning, investing, and developing guidelines and standards to promote successful web site design techniques to meet public expectation.

Successful implementation of e-governance can be more challenging for developing countries. As such, e-governments of developing countries may face primary obstacles, such as lack of basic IT infrastructures, appropriate IT applications and IT professionals, from which developed countries with sufficient resources would not suffer more. Developing countries were reported to have comparatively limited technological and human resources and potentially less efficient management skills of these resources, thus may have to take more hazards compared to industrialized countries in implementing the e-governments. Successful implementation of e-governments can be a very crucial issue for these decision-makers among developing countries, as the failure of these e-government initiatives can bring grievous impact on their political stability. Countries were willing and able to implement e-governments when they had sufficient technologies, and infrastructures and skilled IT human resources. This inconsistency may come from the differences between measures of success, satisfaction and the e-government performances and the e-government readiness index.

The advantage of e-government and internet for the poor people living in secluded and remote areas without access to electricity, telephone, internet, or ICT facilities could be seriously considered. Clustering villages around strategic internet networks access points can offer a cost-effective way to provide connectivity and access at reasonable cost. Community linkages to government-run educational and information sites will be useful to deliver access to information on public sector operations such as job opportunities and business expertise. Adoption of e-government is very difficult system for the development of information dissemination to public level. If governments have successes to provide such type of system to citizens, it will bring lots of changes in the country. Implementation of e-government has changed the way of living of the people in many nations. If government has successfully implemented e-government system in the country, it can change living standards of people.

The findings of this study have managerial implications for developing countries implementing e-governments. The fact that changes in work place is the most important factor that affects overall success, satisfaction, and performance of an e-government implies that it is important that the organization needs to reengineer its structure and work process. It is so far equally important to influence stakeholders to accept such changes by assuring that an e-government is not a threat but a benefit to them. Developing countries need to satisfy a certain unique requirement while fulfilling some conditions that are similarly required for developed countries to accomplish successful e-governments. Developing countries like Nepal needs to develop an ecosystem for the growth of IT sector, effective implementation of policies provisions and strategies must be targeted at making Nepal a competitive destination. Future studies may apply other methodologies, such as in-depth interviews, to understand the theme in a more detailed and comprehensive manner.

References

1. I. Akman, A. Yazici, A. Mishra and A. Arifoglu. E-Government: A Global View and an Empirical Evaluation of Some Attributes of Citizens. *Government Information Quarterly* 22(2), pp. 239-257, 2005.
2. S. Al-Shafi and Weerakkody, V. *The Use of Wireless Internet Parks to Facilitate Adoption and Diffusion of E-Government Services: An Empirical Study in Qatar*. Proceedings of the 14th AMCIS, Toronto, Ontario, Canada. August 14-17, 2008.
3. Almakki, R. *Communities of Practice and Knowledge Sharing in E-Government Initiatives*. The University of Manchester, 2009.
4. F. Bélanger and L. Carter. Trust and Risk in E-government Adoption. *Journal of Strategic Information Systems* 17(2): 165-176, 2008.
5. K. Bedi, P.J. Singh and S. Srivastava. *Government@net: New Governance Opportunities for India*, New Delhi: Sage Publications, 2001.

6. D. Boyd. *Friendster and Publicly Articulated Social Networks*. In: Conference on Human Factors and Computing Systems (CHI 2004), Vienna: Association for Computing Machinery, 2004, "Social Network Sites: Public, Private, or What?" (2007), http://kt.flexiblelearning.net.au/tkt2007/?page_id=28.
7. L. Carter and F. Bélanger. The Utilization of E-Government Services: Citizen Trust, Innovation and Acceptance Factors. *Information Systems Journal* 15(1), pp. 5-25, 2005.
8. L.Carter and V. Weetakkody. E-government Adoption: A Culture Comparison. *Information Systems Frontiers* 10(4), pp. 473-482, 2008.
9. J. Choudrie and Y. Dwivedi. A Survey of Citizens' Awareness and Adoption of E-Government Initiatives, the 'Government Gateway': A United Kingdom Perspective, Retrieved by <<http://www.iseing.org/egov/eGOV05/Source%20Files/Papers/CameraReady-5-P.pdf>>, [accessed 21.04.2011], 2005.
10. K. Chopra and W.A. Wallace. *Trust in Electronic Environments*, In: Thirty sixth Hawaii International Conference on System Sciences (HICSS), Maui, Hawaii, 2003.
11. I. Chung. *Roles and Impacts of It on New Social Norms, Ethical Values and Legal Frameworks in Shaping a Future Digital Society*. Proceedings of the NSF/OECD Workshop, January 31, 2007. Washington D.C.
12. C. Ciborra and D. Navarra. Good Governance, Development Theory, and Aid Policy: Risks and Challenges of E-Government in Jordan. *Information Technology for Development* 11(2), pp. 141-159, 2005.
13. E.M. Cook LaVigne, M.F. Pagano, C.M. Dawes and T.A. Pardo. *Making a Cast for Local Government*. Center for Technology in Government, New York:University of New York, 2002.
14. L.Damodaran, J. Nicholls and A. Henney. The Contribution of Sociotechnical Systems Thinking to the Effective Adoption of E-Government and the Enhancement of Democracy. *The Electronic Journal of e-Government* 3(1), pp. 1-12, 2005.
15. S.S.Dawes. Governance in the Digital Age: A Research and Action Framework for an Uncertain Future. *Government Information Quarterly* 26(2), pp. 257-264, 2009.
16. Z.A. Ebrahim. *The Adoption of E-Government in the Kingdom of Bahrain*. School of Information Systems, Computing and Mathematics: Brunel University, 2005.
17. Y. Elsheikh. A. Cullen and D. Hobbs. E-Government in Jordan: Challenges and Opportunities. *Transforming Government: People, Process and Policy* 2(2), pp. 83 - 103, 2008.
18. Z. Fang. E-government in Digital Era: Concept, Practice and Development. *International Journal of the Computer, the Internet and Management* 10(2), pp. 1-22, 2002.
19. J. Fu, C. Farn and W. Chao. Acceptance of Electronic Tax Filing: A Study of Taxpayer Intentions. *Information & Management* 43(1), pp. 109-126, 2006.
20. R. Gauld, S. Goldfinch, S. and S. Horsburgh. Do They Want It? Do They Use It? The 'Demand-Side' of E-government in Australia and New Zealand'. *Government Information Quarterly* 27(2), pp. 177-186, 2010.
21. D. Gichoya. Factors Affecting the Successful Implementation of ICT Projects in Government. *The Electronic Journal of e-Government* 3(4), pp. 175-184, 2005.
22. D. Gilbert, P. Balestrini and D. Littleboy.. Barriers and Benefits in the Adoption of E-government. *International Journal of Public Sector Management* 17(4), pp. 286-301, 2004.
23. B. Gupta, S. Dasgupta and A. Gupta. Adoption of ICT in a Government Organization in a Developing Country: An Empirical Study. *Journal of Strategic Information Systems* 17(2), pp. 140-154, 2008.
24. A.N. Hakro. Size of Government and Growth Rate of Per Capita Income in Selected Asian Developing Economics. *International Research Journal of Finance and Economics* 28, pp. 52-66, 2009.
25. C.V. Haldenwang. Electronic Government (E-Government) and Development. *The European Journal of Development Research* 16(2), pp. 417-432, 2004.
26. R. Heeks and S. Bailur. Analyzing E-government Research: Perspectives, Philosophies, Theories, Methods, And Practice. *Government Information Quarterly* 24(2), pp. 243-265, 2007.
27. R. Heeks. Causes of E-government Success and Failure: Factor Model. E-government for Development (www.egov4dev.org/causefactor/htm), 2003.
28. D. Holmes. *E-government: E-business Strategies for Government*. London: Nicholas Brealey, 2001.
29. Z. Huang. A Comprehensive Analysis of U.S. Countries E-government Portals: Development Status and Functionalities. *European Journal of Information Systems* 16: 149-164, 2007.
30. Z. Irani, M. Al-Sebie and T. Elliman. Transaction Stage of E-government Systems: Identification of its Location and Importance'. *Proceedings of the 39th Hawaii International Conference on System Science, Hawaii.*, 2006.
31. T. Jaeger. The Endless Wire: E-government as Global Phenomenon. *Government Information Quarterly* 20(4), pp. 323-331, 2003.
32. R.C. Joseph and P.I. Jeffers. E-Government Maturity in the Caribbean Nations. *Journal of Global Information Technology Management* 12(1), pp. 52-70, 2009.
33. S. Kalathil. Dot.Com for Dictators. *Foreign Policy* 135: 42-49, 2003.
34. V. Kumar, B. Mukerji, I. Butt, I., and A. Persaud. Factors for Successful E-government Adoption: A Conceptual Framework. *Electronic Journal of e-Government* 5(1): 63-76, 2007.
35. K.T. Liou. E-Government Development and China's Administrative Reform. *International Journal of Public Administration* 31(1), pp. 76-95, 2008.
36. G. Means and D. Schneider. *Meta-capitalism: The E-business Revolution and the Design of 21st Century Companies and Markets*. New York: John Wiley & Sons Inc., 2000.
37. MIS Report 2010. Nepal Telecom Authority, 32.
38. MIS., Nepal Telecom Central Office, 2010. Nepal Doorsanchar Company Limited (ntc.omd.mis@ntc.net.np)
39. M.J. Moon and N. Donald. Does Managerial Orientation Matter? The Adoption of Reinventing Government and E-government at the Municipal Level. *Information Systems Journal* 15, pp. 43-60, 2005.
40. D.F. Morris and M.J. Moon. Advancing E-Government at the Grassroots: Tortoise or Hare? *Public Administration Review* 65(1), pp. 64-75, 2005.
41. M.A. Nour. A Context-Based Integrative Framework for e-Government Initiatives. *Government Information Quarterly* 25, pp. 448-461, doi: 10.1016/j.giq.2007.02.004, 2007.
42. R.W. Okot-Uma. *Electronic Governance: Re-Inventing Good Governance*. London: Commonwealth Secretariat, 2000.
43. W. Pilling and H. Boeltzig. *Moving towards E-government -effective Strategies for Increasing Access and Use of the Internet among Non-Internet Users in US and UK.*. Proceedings of 8th annual International Digital Government Research Conference, May 20-23, Philadelphia, USA, 2007.

44. K. Purusottam and S. Shakya. E-government Implementation in Nepal : A Challenges. *International Journal of Advanced Research in Computer Science and Software Engineering* 2(1), pp. 2118-2122, 2012.
45. R. Rose. A Global Diffusion Model of e-Governance. *Journal of Public Policy* 25(1), pp. 5-27. 48 Models of E-Government: Some Missing Links for Developing Countries, 2005.
46. S. Sachdeva. *Twenty Five Steps towards Successful E-governance*. National Institute for Smart Government (NISG), India. <http://www.indiaegov.org/knowledgeexchg/25stepstoegovsuccess.pdf>, 2008.
47. K.B.C. Saxena. Towards Excellence in E-governance. *International Journal of Public Sector Management* 18(6), pp. 498-513, 2005.
48. R. Silverstone. *Media and Morality: On the Rise of the Mediapolis*. Polity Press, Cambridge, MA. ISBN: 780745635040, p. 215, 2007.
49. G. Singh, R.D. Pathak and R. Naz. E-governance for Improved Public Sector Service Delivery in India, Ethiopia and Fiji. *International Journal of Public Sector Management* 23(3), pp. 254-275, 2010.
50. S.C. Srivastava and T.S.H. Teo. Citizen Trust Development for E-Government Adoption and Usage: Insights from Young Adults in Singapore. *Communications of the Association for Information Systems* 25(31), pp. 359-378, 2009.
51. M.L. Teerling and W. Pieterse. *Multi-Channel Marketing: An Experiment on Leading Citizens to Online Public Services*. The proceedings of the 10th International digital government research conference May 17-20, Puebla, Mexico, 2009.
52. T.S.H. Teo, S.C. Srivastava and L. Jiang. Trust and Electronic Government Success: An Empirical Study, *Journal of Management Information Systems* 25(3), pp. 99-131, 2009.
53. L. Tung and O. Rieck. Adoption of Electronic Government Services among Business rganizations in Singapore. *Journal of Strategic Information Systems* 14(4), pp. 417-440, 2005.
54. UN, 2010. United Nation E-Government Survey. Retrieved by <<http://unpan1.un.org/intradoc/groups/public/documents/UN-DPADM/UNPAN038853.pdf>>, [Accessed 15.01.2011].
55. United Nations (UN) and American Society for Public Administration (ASPA) 2002. *Benchmarking E-government: A Global Perspective*. New York: U.N. Publications.
56. United Nations (UN) 2008. *United Nations E-government Survey*. New York: U.N. Publications.
57. United Nations Development Programme (UNDP). *Human Development Report 2009*. New York: U.N. Publications, 2009.
58. United Nations E-Government Development Knowledge Base, <http://www.unpan.org/egovkb>.
59. United Nations E-Government for the People. E-Government Survey 2012. Available online <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan048065.pdf>
60. P. Verdegem and G. Verleye. User-centered E-Government in Practice: A comprehensive Model for Measuring User Satisfaction. *Government Information Quarterly* 26(3), pp. 487-497, 2009.
61. E. Zakareya and Z. Irani. E-government Adoption: Architecture and Barriers. *Business Process Management Journal* 11(5), pp. 589-611, 2005.