# Czech University of Life Sciences Prague

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**E-GOVERNMENT IN NEPAL: current trends and barriers**

Bachelor Thesis

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# Declaration

I declare that I have worked on my bachelor thesis titled "E-government in Nepal" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not violate copyrights of any third person.

In Prague 17<sup>th</sup> March 2014

Prabin Lama

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# Abstract

Electronic Government (e-government) refers to delivery of national or Local government information's and services via internet or other digital means to citizens or for various businesses or other governmental agencies. The main importance of e-government is to develop positive values of every citizen in Nepal towards the process of peace and progress. Primary data is used for the research and SWOT analysis is done based on literature of e-government. The survey used in this research is questionnaire method. Questionnaire method is done using the website provided by google.docs.com. Chi-square method and Fischer's exact test are used to compare pair-wise association between government activities to the public welfare through information technology. The result shows that in every statement null hypothesis is accepted and alternate hypothesis is rejected. According to the research, most of the citizens are satisfied in e-government services. The research also finds out that there is no association of gender and age group using e-government. Based on the case study of Nepal in comparison with other South Asian countries and survey results, we can conclude that Nepal is still one of the underdeveloped countries and comes under low scoring countries for the utilization of e-government services. Citizens are also expecting improvement in the services of e-government and the speed of reply. Citizens are still unaware about the security issues of e-government.

**Keywords: E-government, Nepal, Citizens, Businesses, South Asia, etc.**

# Výtah

Elektronizace veřejné správy (e-vláda) poukazuje na dodávky národní nebo místní vlády, informace a služby přes internet nebo jiné digitální prostředky, občanským, podnikatelským nebo ostatním vládním agenturám. Hlavním významem e-vlády je rozvíjet pozitivní hodnoty každého občana v Nepálu směrem k procesu míru a pokroku. Primární data jsou používána pro výzkum a SWOT.Analýza se provádí na základě literatury e-vlády. Průzkum využívaný v tomto výzkumu je metodou dotazníku.Dotazníková metoda se provádí pomocí google.docs.com. Chi-square metoda a Fischerův exaktní test jsou využívány pro porovnání párových souvislostí mezi činností vlády a veřejným prospěchem skrz informační technologie. Výsledky ukazují že v každém prohlášení nulová hypotéza je akceptována a střídavá hypotéza je zamítnuta. Podle tohoto výzkumu je vetšina občanů spokojena se službami e-vlády. Výzkum také zjistil že není žádné spojení mezi pohlavím a věkovými skupinami které využívají e-vládu. Založeno na případové studii Nepáu v porovnání s jinými státy Jižní Asie, a také výsledků dotazníků, můžeme konstatovat že Nepál je stále jedna z rozvojových zemí a spadá pod nízce skorované co se využití e-vlády týče. Občané také očekávají zlepšení ve službách e-vlády a rychlosti odpovědi. Občané jsou stále neuvědomělí co se týče bezpečnostních záležitostí e-vlády.

**Klíčová slova: e-vláda, Nepál, Občané, Podnikání, Jižní Asie, etc .**

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# 1 Introduction

Electronic Government (e-government) refers to delivery of National or local Government information and services via Internet or other digital means to citizens or businesses or other Governmental agencies (1). The growth of e government in the global economic landscape is one of the most striking developments during the last two decades. This unprecedented growth of e-government around the world makes it an important and vital component of development strategy in both developed nations such as USA, Europe, Russia, Australia, Japan, Korea and New Zealand etc. and developing nations like India, Nepal, Bangladesh, Pakistan and South Africa. The e-government master plan has a competitive advantage in the country like Nepal in order to interconnect via network and to provide citizen-centric and transparent services for its people. If this will be implemented than country will be changed to the modern and knowledgeable society. Ultimately, Nepal will achieve a great value by maximizing the use of ICT to create values for individuals and organizations. It also includes all other parts of society, and creates synergy effect through networking. In this respect, the vision statement for the Nepal e-Government would be for citizen and government service and knowledge based society.

## 1.1 Background of e-government

The four words which are used in the function of administrative government are government, governance, e-government and e-governance. The Webern philosophy states that the constitutional legitimization provides the government a monopoly in terms of societal control. Thus, the government, in brief is taken as an institution that is formally constituted, bureaucratically organized, and usually constitutionally legitimated.

Firstly, the e-government was born out of the internet boom and now it is not limited to Internet use or publicly accessible systems for direct use by customers or citizens (2). E-government refers to the use of the by government agencies of that have the ability to transform relations with citizens, businesses, and other arms of government.

These technologies can serve in different categories such as better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The advantage of implementation of these technologies is less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions" (World Bank, 2004)

Recently, there is huge pressure for government to deliver services in an efficient and accessible manner. These IT application which deals with these pressure have been referred to as e-government. It is difficult to define e-government as it encompasses such a broad spectrum of activities.

The governance paradigm of e-government is been growing up day by day due to the necessity in public entities, civil societies, communities and citizens. The growing application of information and communication technologies (ICTs) and their subsequent use enforces government to utilize technology services. E-governance is 'the application of information Technology to the processes of government functioning to bring about simple, moral, accountable, responsive and transparent government. The role of e-government came on function for a quest of making the public institutions more transparent, accountable, and efficient for the better delivery of public services. ICT tool helps to improve government to be more effective, transparent, professional and cost-effective. Therefore, all the countries today are adopting ICTs for making their government efficient, transparent and customer friendly.

The process of introducing ICTs for their performance has been done by the public, private and the nonprofit entities. The main activity of e-policy in Nepal is to focus on using e-government especially for the delivery of programs and services and the usage of information infrastructures for improved internal administrative procedures. The e-governance initiatives have been introduced for legal document purpose and necessary institutional mechanism. However, incidence of digital divide both at individual and institutional level is common in Nepal. In this context, the paper analyses about the weakness, strength, opportunity of Implementation of E government in Nepal.

Government is seen by many parts of the community and voluntary sector as a desirable addition to the existing channels for accessing and delivering government information and services to the citizens. The challenge for governments is how to move on from focusing on service delivery to providing people-centered tools and applications. This means placing priority not just on how they delivery services to citizens, but using e-government to enrich the lives of its citizens. E-government should also be employed to improve the way public servants use public resources to support the society (3) .

## 1.2    Problem for e-government in Nepal

The government of Nepal has improved its action toward public plan after the civil war 2004-2009). The government of Nepal made a public plan by initiating master plan to reduce cost and time of service. Despites the government seems implementing the plans, key issues to implement the e-government master plan is still a major challenges for the government of Nepal. The main problem is the access of infrastructure. The lack access of transportation and communication is the main issues for implementation of master plan in a poor country like Nepal. According the statistics, 7% of the people have an access the internet. The main reason behind this is lack of communication and electricity in the country.

The transmission networks which include backbone link, microwave radio network, optical fiber network are the main issues necessary to implement e-government. Nepal has a problem such as trouble in the link, low quality of availability, frequent trouble in the link, low capacity of links. The present scenario of the infrastructure seems a tough job for Nepal to move ahead plan and implement a strategy of the master plan. With the present infrastructure, it is difficult to move ahead the plan.

Technology adoption is another barrier while introducing digital devices in Nepalese context. Many of the senior level officers of Nepal are unaware of the new innovation, CT and technology in the global market. Though, ICT is available in the urban parts of Nepal, officers don't want to get adequate information about this. The decision making people are unaware about the effect of implementation of ICT in Nepal. People who are getting extra benefit are not willing to hold the beneficial position after introducing new technology. Hence, they are not

friendly with digital services. This superstitious believe on the old technology is the critical problem which the young generation are facing currently in Nepal.

Besides these issues, the managing factor also challenging in the implementation of the plan. Fostering domestic ICT workforce, key person's strong will to stand on behalf of the project introduction, fund mechanism, that can attain large scale investment are some other major points to be considered. The purposed direction, consistently, and continuously are also the important factors that assess the progress to verify whether e-government plan is implemented.

## 1.3   Importance of e-government in Nepal

The main importance of e-government is to develop positive values of every citizen in Nepal towards the process of peace and progress. The reformed government of Nepal should be reengineered with aspirations of Information and Communication Technology for to make a dream alive of New Nepal.

The way we work, information, age and lifestyle all changes have been experienced by globalization and modern technology. The economic reform and digital world governments are "reinventing" themselves to meet new expectations and the priorities of citizens and businesses. These changes in the society and the world have forced government to create a new value towards its citizen, business and employees. E-government builds a citizen-centered, service-oriented, public-participative government. This government will be much more efficient, with efficient, transparent, and accountable, ICT based online service offers equal opportunity to all genders, races and ethnic groups through its democratic and unbiased service system.

E-government provides equal opportunity to the people in rural areas and the areas where transportation is not available. This all can be possible through Internet connectivity either through wireless communication, fiber optic cables, dial-ups, VSATs or whatever other medium. The main importance of e-government would be clear when the services could change the government workers to the empowered workers. Nepal should not miss the benefits of global economy and specially the benefits offered by Internet.

# 2 Objectives and Methodology

The main objective of this thesis is to find out the current e-government user perception regarding and to investigate current state and barrier of e-government in Nepal.

Partial goals of the thesis are such as:

- To make an overview of current state of e-government for citizens and businesses with focus on major trends and barriers of e-government in South Asia.
- To do quantitative research among actual and potential e-government users in Nepal.

## 2.1 Analytical framework and methodology

The research is divided in two different parts. The survey used in this research is questionnaire method through docs.google.com. The variation of the sample is not representative, data might be biased which is a mini version of a full scale study and is crucial for a good study result. E-government is, however, an immature research field and the pilot study couldn't give the best result

The research will be based on secondary data research and literature analysis. In the practical part, questionnaire survey, statistical analysis, statistical hypothesis testing and comparison will be used. The theoretical and practical parts of thesis will serve to make final conclusions

To make an analysis of gender and age variables over e-government in Nepal, social media has been applied for this purpose. The survey is made from 40 resident and nonresident Nepali people. The data for the analysis are obtained from the survey of e-government users through webpage Docs.google.com. Chi-square and Fisher test model were used to analyze the data.

Furthermore, the selection of e-government related questions is done from the survey. Hypothesis is created from the survey. Question no. 10, 11 and 12 were chosen to make statistical analysis based on gender and age variable. Secondly, chi-square method and Fischer's exact test are used to compare pair-wise association between government activities to the public welfare through information technology.

## 2.2 Importance of Study

Here the hypotheses are built in the form of research question.

RESEARCH QUESTIONS:

Main research question

1) What are the key problems of e-government in Nepal? Are there any barriers and challenges for e-government in Nepal?

2) Sub questions:

   a. Does the age and gender have any association in terms of using e-government?

   b. What are the significant barriers for e-government in Nepal?

# 3   Literature review

## 3.1   Status of e-government in Nepal

Nepal is currently at stage one according to the five promotions specified by the UN and American Society Public Administration (UNASOA, 2002) which means government websites have been created to provide basic information in a static manner. The e-government states that by the end of 2011 Nepal will reach at stage three which provide services through various channels, two ways transaction, and knowledge based administrative processes pan governmental collaborative network for knowledge sharing.  According KIPA the top twenty projects were selected and classified into G2C, G2B, G2G, or infrastructure. G2G include e-education, e-land, e-management information and e-tax. G2C includes a passport Registration System, National id, e-vehicle registration, e-agriculture, a-government representative Portal. G2B projects include e-tourism, e-commerce, recruitment and employment Information System, e-customs. Infrastructure project include enterprise architecture, public key infrastructure, e-government integrated data. The phases will be implemented in two phases First phase (2007-8). This phase has direct impact on the citizens and infrastructure projects that would focus on the government representative portal, national ID, public Key infrastructure, ICT organization, national unified code system development, and the expansion of ICT infrastructure (4).

## 3.2   History of e-government of Nepal

Since the introduction of computer in 1971 the country made an early start compared to the other countries. However in the 1980s Nepal slowed down in development of ICT industry. Starting from the 2000 ICT policy was announced and in 2003 HLCIT was establish to take charge of national policies.

1971-  Introduction of computer for census (IBM 1401)

1974-  Establishment of Electronic Data Processing Center

1982- First Private Overseas Investment in software development by establishing company for

 Export, Data Systems International (p) LTD

1985- Distribution of Personal Computers

1990- Liberalization on imports of equipment

1992- Establishment of Computer Association of Nepal

1996- Establishment of the Ministry of Science & Technology

2000- Announcement of the first IT policy, IT Policy 2000.

2001- Establishment of National Information Technology Center (NITC)

2003- Establishment of High Level Commission for Information Technology  (HLCIT)

2007- Enactment of Electronics Transaction Act


## 3.3   Vision, Goals and Strategies

The vision of e-government indicates how it will be look like in the near future. Nepal is in the infant stages of introducing ICT, it is important for Nepal to carry out the e-government project to move forward in the international market. . As of this time, this vision of e-government of Nepal is to improve in national income, realization of the knowledge based society, transparent Government, good Governance and enhancement in national competitiveness etc.

High level Commission for information Technology (HLCIT) and National Information Technology Centre (NITC) have jointly developed the National e-government master plan (NEMP) with technical assistance from Korea IT industry Promotion Agency (KIPA) which was completed on July 2006 has created a vision and mission for the development and establishment of e-government system to deliver the required services and projects in citizens and business. NEMP also stated in five years, that all the government agencies in Nepal would be interconnected through network and Nepal will provide citizen-centric and reliable services

for its people. Through this, it will maximize the use of information communication technology (ICT) to create values for citizens, organization, industries and all other parts of Nepal.

The top level goals set by the NEMP consulting report for as follows:

G2C- Provide customer-tailored services

G2B- Provide transparent and prompt services

G2G- Networked and knowledge based government

Infrastructure- Favorable ICT infrastructure and legal framework

# E-government mission statement

Improve the quality of people's life without any discrimination, transcending Regional and racial differences, and realize socio-economic development by building a Transparent government and providing value added quality services through ICT (5).

## 3.4   Challenges for Implementation of e-government in Nepal

Implementing e-government is very difficult and challenging for the development of country. Once e-government is successful it change the way of living of people and this is happen in many countries. But in Nepal implementing e-government is challenging because of its development status and there might be many reasons which are listed follows (6).

I.    Literacy rate

Literacy rate in context to Nepal is very low and people working in IT sector for Government and Non-Government organization lack sufficient knowledge and skill in IT. Therefore, for better e-government implementation both government and Non-Government organization should conduct training for their employees working in IT sector.

II. Low per capita income

Compared to many other countries in South Asian region Nepal has the lowest per capita income after Afghanistan according to Central Intelligence Agency, The World FACTBOOK – 2009. Hence, due to the low per capita income all the citizens aren't capable to access the e-government system.

III. Poor Infrastructure

Infrastructures play a big part in the development and implementation of e-government. Technological infrastructures such as Internet service, telephone service, electricity aren't available in every part of the country, those services are only limited to the main cites. This makes it very challenging for the government to provide and the citizens to receive E-Government service.

IV. Lack of Human Resources

One of the main factors affecting in implementing e-government is lack of human resources. Human resources refer to the skills and capacities within the public administration and citizens that need to possess IT literacy to fully benefits from e-government applications. According to eGMP Nepal human resources is very low which directly effects on implementation of e-government.

V. Political Instability

For effective implementation of e-government political situation must be stable .In situation of Nepal there is still political instability .Political parties do not have unity and interrogation to each other's and many obstacle are seen. This leads to failure in development of Nation. So political instability is a major challenge for implementing of e-government System.

VI. Lack of Awareness, training

The awareness and training is another challenges for implementing e-government .For successful e-government each and every citizens must be aware of about the system and their objectives.it is necessary to give training to citizens about the e-government

system in the country. Nepali citizen are still unaware about the e-government system and doesn't receive enough training.

## 3.5 Nepal's Position on e-government Index in the comparison to south Asian Countries:

E-government Index presents the state of e-government Development of the countries. It is a composite measurement of the capacity and willingness of countries to use e-government for ICT-led development. So, e-government Index is the measurement of e-government Implementation. In comparison of South Asia Nepal is in 8th position 2012 survey. The following table displays the condition of Nepal e-government Implementation. The index of e-government of Nepal is 0.2664 and Rank is 8. So it is very poor result in Comparison to South Asia.

| Country | Score: E-Government 2012 | Rank 2012 | Rank 2010 | Rank Change |
|---------|--------------------------|-----------|-----------|-------------|
| Maldives | 0.4994 | 95 | 92 | -3 ⬇ |
| Iran (Islamic Republic of) | 0.4876 | 100 | 102 | +2 ⬆ |
| Sri Lanka | 0.4357 | 115 | 111 | -4 ⬇ |
| India | 0.3829 | 125 | 119 | -6 ⬇ |
| Bangladesh | 0.2991 | 150 | 134 | -16 ⬇ |
| Bhutan | 0.2942 | 152 | 152 | |
| Pakistan | 0.2823 | 156 | 146 | -10 ⬇ |
| Nepal | 0.2664 | 164 | 153 | -11 ⬇ |
| Afghanistan | 0.1701 | 184 | 168 | -16 ⬇ |

Table 1 **E-government ranking in South Asia (7)**

## 3.6   The Onion Ring Model
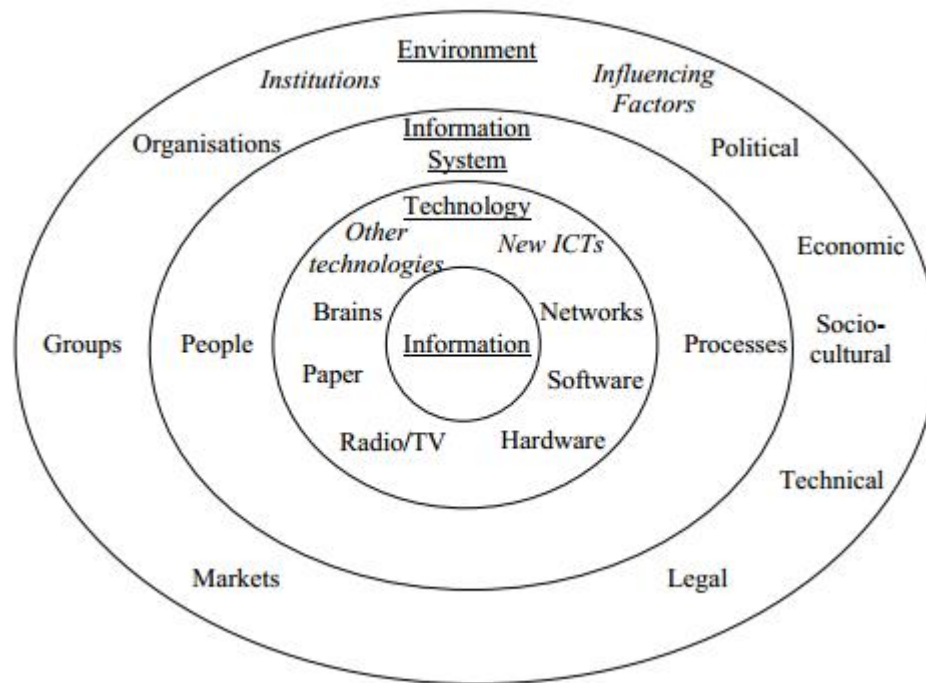


**Figure 1 The Onion Ring Model (8)**

Figure shows that e-government can be described as socio-technical systems because they combine both social (people) and technical (8).

The four main lessons of this model for e-development.

1.  Information is at the heart:

    It is important to understand the role of information first then technology to understand the role of ICTs in development.

2.  Embrace all information-handling technologies:

    Most people still depend on non-digital technologies which are informal information systems.

3.  Information systems not information technologies add value:

    IT is just a dead box in the corner of the room unless you add what is needed to make it an information system: processes to contribute to, Information to handle, people to work with it.

4.  Information systems sit in a context:

Information systems are like trees with their roots buried in the surrounding soil of organizations, institutions, and environment:

a) Take account of context:

Mostly the e-development failures are due to factors like legal restriction, infrastructural and economic constraints, political and cultural factors.

b) Photocopy e-development solutions.

You can't just pull solution from one context and imagine they will work in another the result will be transplant failure. It's like ripping a tree from its root and thrust it down in different soil. Every context is different from each other, and work must be done to match system and context

## 3.7 E-Government differences between developed and developing countries

E-government strategies had large impact on the way government interact with their citizens. Developed countries had made a significant progress in e-government implementation as compare to developing countries. It is important to understand the significant difference between develop and developing countries (9).

|  | Developed Countries | Developing Countries |
|---|---|---|
| History and Culture | Early development in government and economy immediately after independence.<br>Economy growing at a constant rate, productivity increasing, high standard of living. | Government usually not specifically defined; economy not increasing in productivity<br>Economy not growing or increasing productivity; low standard of living |
| Technical Staff | Has a current technical staff, needs | Does not have a technical staff. |

| | | |
|---|---|---|
| | to increase technical abilities and hire younger professionals | |
| | Current staff would be able to define requirements for development | Current staff may be unable to define specific requirements. |
| Infrastructure | Better infrastructure<br>High internet access for employees and citizens | Bad infrastructure<br>Low internet access for employees and citizens. |
| Citizens | High Internet access and computer literacy; still has digital divide and privacy issues.<br> Relatively more experienced in democratic system and more actively participate in governmental policy-making process | Low Internet access and citizens don't trust online services; few citizens know how to operate computers.<br>Relatively less experienced in democratic system and less active participation in governmental policy-making process |
| Government Officers | Decent computer literacy and dedication of resources; many do not place e-government at a high priority | Low computer literacy and dedication of resources; many do not place e-government at a high priority due to lack of knowledge on the issue |

**Table 2 E-government differences between developed and developing countries (9)**

## 3.8    Categories of e government

E-government use innovative technologies to provide citizens and business with more convenient access to government information and services, to improve the quality of the services and to provide opportunities to participate in democratic institutions and process (10).This categories includes different types of relationships that e-government aims to make more friendly, transparent, convenient and inexpensive.

### 3.8.1  Government to Citizen (G2C)

G2C aims are to put public services online for citizens and to share information with them at any time by allowing them to perform online activities. Services are related to taxes, administration procedures and so on. In addition, G2C allow citizens to participate in decision making process on matters that affect them interest to society as whole democracy facilities which leads to quality of citizens lives by providing them with high quality of government services.

### 3.8.2  Government to Business (G2B)

G2B is the second major type of e-government category. G2B include various services exchanged like distribution of policies, memos, rules and regulation between the government and business sectors. Business services offered include obtaining registering business, lodging taxes, obtaining permits and many more. The services offered through G2B play a great role in development of small and medium enterprises.

### 3.8.3  Government to Government (G2G)

This is concern with communication between government organizations, department and agencies and other international governments. The main objective is to enhance the cooperation between government agencies at different levels and to facilitate communication between government offices in different locations.

### 3.8.4 Government to Employee (G2E)

G2E is refers to the relationship between government and its employees. The purpose of this relationship is to serve employees and offer online services .It gives employees the possibility of accessing relevant information regarding compensation and benefits online.

### 3.9 Challenges of e-government:

Despite the benefits of implementing e-government, develop and developing countries face many barriers and challenges. This table below summaries the common barriers and challenges which are often categorized into social, technical, political cultural and economic (11).

| | |
|---|---|
| Political- | Department do not share data with others.<br>Cyber laws not available<br>Hierarchy in organizations<br>Department do not share data with others.<br>Cyber laws not available<br>Hierarchy in organizations |
| Social | Digital divide<br>Culture<br>IT skills<br>Income<br>Employment |
| Economic | Lack of money/ funding's<br>High coast of secure solutions |
| Technical | Lack of technical infrastructure<br>Differences in the security models |
| | |

**Table 3 Challenges of e-government (11)**

### 3.10  E-government stage models and their characteristics

The e-government consists of multiple stages model of development. Most of these stages share similar characteristics to understand various thoughts within the e-government. These models are discussed in the following subsections.

**UN five stages model**

The United Nations and American Society for Public Administration suggested an e-government model with five stages (5).

- Emerging presence:

An official government websites provides formal but limited and static information.

- Enhanced presence:

Government web sites provide dynamic, specialized and information are updated with greater regularity.

- Interactive presence:

Government web sites act as a portal to connect users. Users can download forms, official email, interact through the web and make appointment and requests.

- Transactional presence:

User can pay for services or conduct secure financial transactions online such as renewing visas, passports updating birth records.

- Seamless ( fully integrated presence):

Governments use a single website to provide a one stop portal were users can easily access all kinds of services. Information is shared securely between departments to allow effective integration of e-functions and services.

**Gartner four stages model**

Gartner four phases classifies e-government into four phases which measure the progress for e-government and to establish a road map to achieve the desired levels of constituency service (12).

- Presence – This stage is classified by a simple information providing website to public.

- Interaction - This stage offers interaction between government and citizen (G2C), government and business (G2B), government and government (G2G). Users are able to contact agencies through web sites or do self-service

- Transaction- The transaction stage enables entire transaction online like paying tax, renew license, submitting bids.

- Transformation- This stage involves transformation of the current operational processes to provide integrated and efficient personalized service.

**Deloitte's six-stages model**

Deloitte's include six-stage model which are described below:

- Information publishing- Governments creates a website to access all the information.
- Official two-way transaction-Citizens make electronic transactions such as digital signatures and security keys.
- Multi-purpose portals- Governments create a single portal to enable citizens to access and obtain information and services.
- Portal personalization- Citizens have right to access and customize portals according to their needs.
- Clustering of common services: Government department enhance collaboration and reduce intermediaries between operational processes in order to provide a unified and seamless service.

- Full integration and enterprise transformation - An ideal vision in which governments provide sophisticated, unified and personalized services to every customer according to their own needs and preferences

**Layne and Lee: four stages e-government model**

Layne and Lee provided a four-stage model for fully functional e-government (13).

- Catalogue- This stage provides some static or basic information online through web sites.
- Transaction- This stage enables citizens to interact with government electronically.
- Vertical integration- This stage refers integration of government functions at different levels and transformation of government services.
- Horizontal integration- This stage refers on integrating different functions from separate systems so as to provide users a unified and seamless service

**Hiller and Belanger's five-stages and Moon's five-stage model:**

Hiller and Belanger identified a five-stage model-information (14).

- Information -

Government post information on the websites about services provided by agency.

- Two-way communication -

Government agencies allow users to interaction in simple requests.

- Financial transaction-

Government provides possibility to interact between government and individuals (e.g. obtaining visa) and government and business (e.g. ordering office facilities).

- Integration-

This stage contains the integration of government services. Citizens can access all services via a single portal.

- Political Participation -

This stage contains political participation such as voting on line and participating in decision making by posting comments and suggestions.

**Keng Siau and Young Longs (15)**

- Web Presence-

This stage provide simple and limited information through government websites, such as the agency's vision and mission, office hours, contact information and official documents.

- Interaction-

This stage contains simple interaction between governments and the users which includes basic email system, search engines and official form downloads.

- Transaction-

This stage enables citizens to interact with government electronically.

- Transformation-

This stages moves towards transforming the way that government provide services. The transformation includes both vertical and horizontal integration.

- E-democracy-

E-government changes the way in which people make political decisions.

## 3.11  United Nations E-Government Survey 2012

The United Nations e-government Survey 2012 states that many countries have put e-government initiatives and ICTs applications for the people to further enhance public sector efficiencies and organize governance systems to support sustainable development. Among the e-government advanced technology solutions have gained special recognition as the means to restore lagging social and economic sectors. E-government should continue service delivery and rethink in terms of e-government and e-governance and placing greater action on institutional linkage between the layers of government structures to create sustainable development.

According to the world e-government Survey ranking out of 20, 14 are from North America, and Europe, 3 in East Asia (Korea, Singapore and Japan) 2 in Oceania (Australia and New Zealand) and 1 in western Asia (Israel). While the Republic of Korea (0.9283) rank first position in e-government development followed by the three European countries Netherlands (0.125), United Kingdom (0.89600), and Denmark (0.8889).The United States of America(0.8687), France (0.8635) and Sweden (0.8599) follow close behind the global leaders.

# 4 Practical part

The respondents are presented with list of questions from very general questions to e-government  related questions, the answer choice are in multiple choice format, so they have the option to choose the best result among multiple choice, from where it's easy to analyze their perception regarding current overall e-government  user and its issue.

The research is based on both qualitative and quantitative approach. Qualitative research is made in order to fulfill the main goal of the thesis which is to find out the current e-government situation, how e-government is effective in Nepal and comparison with South Asian countries.

## 4.1 Analytical Part

Document is one of the principle sources of data in qualitative parts of the research. Similarly, quantitative research will be operated through interviews with representatives. This method is conducted in order to fulfill the aim of the thesis. For this purpose, questionnaire method is selected. In order to find out problems of e-government, 12 questions are selected and published in social media, it gives the psychological perception of different individual who are users of the e-government. This method is also known as sample and survey method. Therefore, to conduct the survey 47 respondents are selected from Nepal. The result from the survey will help to find out the perception of people over e-government and its current issues.

## 4.2 Software Package
**Google Form**
A Google form is a useful tool to help you plan events, send survey, give students a quiz, or collect other information in an easy, streamlined way. A Google form can be connected to a Google spreadsheet. (16)
The questionnaire method will proceed from very general e-government introduction to the specific barriers in security issues.

## 4.3 Data analysis methods for survey data

**Chi-square:**

Chi-square is a statistical test that is used to compare observed data with data we would expect to obtain according to a specific hypothesis. Chi-square is the sum of the squared difference between observed (0) and the expected (E) data divided by the expected data in all possible categories.

The formula for calculating chi-square test is: $x^2 = \sum \frac{(O-E)^2}{E}$

**Fisher test:**

Fisher's exact test is a statistical significance test that is used to calculate whether there is a significant association between two or more variables. It permits calculation of precise probabilities in situation where sample sizes are small so the normal approximation and chi-square calculations are liable to be inaccurate. The test was invented by Ronald Fisher and published in 1941 where its first uses were for 2x2 contingency tables.

This test was made possible from online calculator (www.vassarstats.net/fisher2x4.html)

Gender:

**Gender**
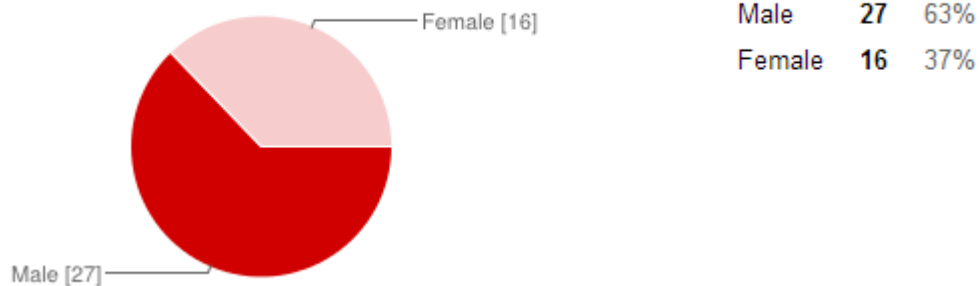


| | | |
|---|---|---|
| Male | 27 | 63% |
| Female | 16 | 37% |

| GENDER | USED | NOT USED | Total |
|--------|------|----------|-------|
| Male | 13 | 11 | 27 |
| Female | 6 | 10 | 16 |
| Total | 19 | 21 | 43 |

Data from Respondent

Expected

Value=Row total*Column total/ Overall total

Chi-Square Hypothesis test

H0= Gender has no impact on using e-government

H1= Gender has impact on using e-government

Number of degree of freedom (v) = (r-1) (c-1) =1*1=1

Level of significance = 5%

Critical value =3.841

The observed and expected frequencies for each cell are transferred from previous table

| O | E | (O-E) | (O-E)^2/E |
|---|---|-------|-----------|
| 13 | 11.4 | -1.091 | 0.1044 |
| 11 | 12.6 | -1.6 | 0.2031 |
| 6 | 7.6 | -1.6 | 0.3368 |
| 10 | 8.40 | 1.6 | 0.3047 |
| | | Total sum | 0.949 |

Solution table

Test Statistic: 0.949

Conclusion

Test static < critical value therefore we accept H0. We conclude that there is no association on Gender using e-government.

# Age Group

**Age Group**
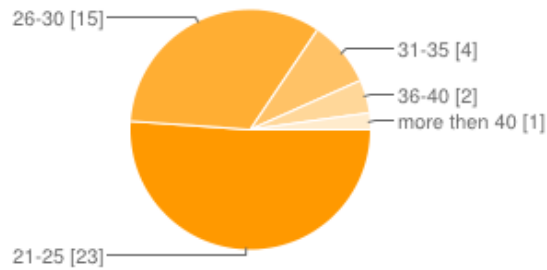


| | | | |
|---|---|---|---|
| 21-25 | **23** | 51% |
| 26-30 | **15** | 33% |
| 31-35 | **4** | 9% |
| 36-40 | **2** | 4% |
| more then 40 | **1** | 2% |

| AGE | USED | NOT USED | |
|---|---|---|---|
| 21-30 | 23 | 15 | 38 |
| 30 above | 2 | 5 | 7 |
| | 25 | 20 | 45 |

Hypothesis test

H0= Age has no impact on using e-government (groups 21-30 and 31+)

H1= Age has impact on using e-government (groups 21-30 and 31+)

Fischer's exact test:

Fisher's exact test of independence was carried out on the data collected as the expected values for the test were smaller than 5 .

The result is P= 0.126, indicating that the null hypothesis can be accepted; there is no significance between age on using e-government (groups 21-30 and 31+)

## Question no 10
## **Gender**

|  | Male | Female |  |
|---|---|---|---|
| Lack of awareness | 6 | 4 | 10 |
| Personal contact preference | 3 | 2 | 5 |
| lack of ability to find information or services | 3 | 2 | 5 |
| Abandon due to technical failures of service | 5 | 2 | 7 |
|  | 17 | 10 | 27 |

Data from Respondent

Hypothesis test

H0= Gender have no impact for not using electronic communication with public agencies

H1= Gender have impact for not using electronic communication with public agencies

Fischer's exact test:

Fisher's exact test of independence was carried out on the data collected as the expected values for the test were smaller than 5 .

The result is P= 0.962 which is less than 0.05 indicating that the null hypothesis can be accepted. We concluded that Gender have no impact on using electronic communication with public agencies.

# Age group

| | 20-30 | 30 above | |
|---|---|---|---|
| Lack of awareness | 9 | 1 | 10 |
| Personal contact preference | 3 | 2 | 5 |
| lack of ability to find information or services | 4 | 1 | 5 |
| Abandon due to technical failures of service | 7 | 0 | 7 |
| | 23 | 4 | 27 |

Data from Respondent

Hypothesis test

H0= Age have no impact for not using electronic communication with public agencies

H1= Age have impact for not using electronic communication with public agencies

Level of significance = 5%

Fischer's exact test:

Fisher's exact test of independence was carried out on the data collected as the expected values for the test were smaller than 5 .

The result is P= 0.259 which is less than 0.05 indicating that the null hypothesis can be accepted. We concluded that age has no impact on using electronic communication with public agencies

# Question no 11
## Gender

|  | Male | Female |  |
|---|---|---|---|
| certainly | 5 | 4 | 9 |
| likely | 6 | 5 | 11 |
| Not likely | 6 | 2 | 8 |
|  | 17 | 11 | 28 |

Data from Respondent

Expected Value=Row total*Column total/ Overall total

Hypothesis test

H0= Gender have no impact on contacting public agencies or officials electronically yet are likely to contact them in future electronically.

H1= Gender have impact on contacting public agencies or officials electronically yet are likely to contact them in future electronically.

Fischer's exact test:

Fisher's exact test of independence was carried out on the data collected as the expected values for the test were smaller than 5 .

The result is P= 0.619 which is less than 0.05 indicating that the null hypothesis can be accepted. We concluded that Gender have no impact on contacting public agencies or officials yet likely to contact them in the future.

## Age group

|  | 20-30 | 30 above |  |
|---|---|---|---|
| certainly | 8 | 1 | 9 |
| likely | 9 | 2 | 11 |
| Not likely | 7 | 1 | 8 |
|  | 24 | 4 | 28 |

Data from Respondent

Expected Value=Row total*Column total/ Overall total

Hypothesis test

H0= Age have no impact on contacting public agencies or officials, nor they are likely to contact them in the future

H1= Age have impact on contacting public agencies or officials, nor they are likely to contact them in the future

Fischer's exact test:

Fisher's exact test of independence was carried out on the data collected as the expected values for the test were smaller than 5 .

The result is P= 0.891 which is less than 0.05 indicating that the null hypothesis can be accepted. We concluded that age have no impact on contacting public agencies or officials yet likely to contact them in the future.

# Question no 12
## Gender

| GENDER | Offline | On line | Total |
|--------|---------|---------|-------|
| Male | 11 | 8 | 19 |
| Female | 7 | 7 | 14 |
| Total | 18 | 15 | 33 |

 Data from Respondent

Expected Value=Row total*Column total/ Overall total

Chi-Square Hypothesis test

H0= Gender has no impact on contacting public agencies or officials electronically and they prefer online means in future.

H1= Gender has impact on contacting public agencies or officials electronically and they prefer online means in future

Number of degree of freedom (v) = (r-1) (c-1) =1*1=1

Level of significance = 5%

Critical value =3.841

The observed and expected frequencies for each cell are transferred from previous table

| O | E | O-E | (O-E)^2/E |
|---|---|-----|-----------|
| 11 | 10.36 | 0.64 | 0.039 |
| 8 | 8.64 | 0.64 | 0.047 |
| 7 | 7.64 | 0.64 | 0.053 |
| 7 | 6.36 | 0.64 | 0.064 |
| | | | 0.203 |

Solution table

Statistics: 0.203

Conclusion

Test static < critical value therefore we accept H0. We conclude that Gender has no impact on public agencies or officials electronically and they prefer online means in future

## Age group:

| Age group | Offline | On line | Total |
|-----------|---------|---------|-------|
| 20-30 | 14 | 12 | 26 |
| 30 above | 4 | 3 | 7 |
| Total | 18 | 15 | 33 |

Data from Respondent

Hypothesis test

H0= Age has no impact on public agencies or officials electronically and they prefer online means in future

H1= Age has impact on public agencies or officials electronically and they prefer online means in future

Fischer's exact test:

Fisher's exact test of independence was carried out on the data collected as the expected values for the test were smaller than 5 .

The result is P= 0.874 which is less than 0.05 indicating that the null hypothesis can be accepted. We conclude that Age has no impact on public agencies or officials electronically and they prefer online means in future

Conclusion

Test static < critical value therefore we accept H0. We conclude that Age has no impact on public agencies or officials electronically and they prefer online means in future.

## 4.4   SWOT analysis

SWOT analysis is an approach which is used evaluate for strengths, weaknesses, opportunities and threats which helps to achieve goal, vision. It is an approach and planning tool which is used to evaluate all the factors that will affect the achievement of a project or business.

Based on various statistical tests applied on the pilot study and from literature review and observations experts the following result was found based on strengths weakness opportunities and threats.

| Strength | Weakness |
| --- | --- |
| People are willing to learn internet<br>Lot of IT skills people are jobless<br>Good telecom and mobile users<br>Increasing literacy rate<br>In the process of making New Nepal<br>Political reforms<br>Basic computer subjects are compulsory in school level | IT literacy rate is very low<br>Low budget<br>Lack of Cyber law<br>Lack of foreign direct investment<br>Passive government<br>High cost for internet and IT services<br>Lack of IT standards and heterogeneous data |
| Opportunity | Threats |
| Education norms will improve<br>Increase in employment rate<br>Cost efficiency<br>Fast networking<br>Promotion of Internet and new business | Corruptions<br>Security and privacy issues<br>Dependency on Indian technology market<br>Losing the culture values<br>Social and ethical concern |

**Table 4 SWOT analysis**

# 5 Result and discussion

Firstly, the survey was made among e-government users among different people in Nepal. Many of the respondents are between 20-30 years. Most of the respondents are student and they have knowledge about e-government. The variation of the sample is not representative, data might be biased which is a mini version of a full scale study and is crucial for a good study result? Although it does not guarantee the good study but it increases the likelihood. Each survey is divided into five hypothesis segment. Each segment is categorized through age and gender. Finally, after chi-square test based on 2*2 matrixes the following result was obtained.

The result shows that in every statement null hypothesis is accepted and alternate hypothesis is rejected. The research finds out that there is no association of Gender and age group using e-government. We conclude that age and gender have no impact for not using electronic communication with public agencies. Similarly the third part of result showed that Age and gender has no impact on contacting public agencies or officials, nor they are likely to contact them in the future. Lastly, age have no impact for not using electronic communication with public agencies.

# 6  Conclusion

This brief introduction shows e-government as a large practice. Numerous publications, numerous conferences, lot of journal articles are available in the Practitioner field of e-government. The academic field includes numerous conferences, a handful of new Journals and publications in established journals with a more general scope. E-government is however, an immature research field and the pilot study couldn't give the best result. Based on the case study of Nepal in comparison with other South Asian countries and survey result, we conclude the gender and age group expectations regarding e-Services. We have most of the time been discussing about the problems of e-government in Nepal. Nepal is still one of underdeveloped country and comes under low scoring countries for the utilization of e-government. The research was done to that group of people who used internet daily. People feel ease in the access of e-government sire sometimes and majority of people thinks these sites are beneficial for several purposes like Education, Taxation, Utility Bills, Passport, Jobs, National ID Card, Health and Care, Voting System. Citizens are also expecting improvement in the services of e-government and the speed of reply.

The conclusion that can be made so far is based on our research question which was outlined in first chapter.

1) What are the key problems of e-government in Nepal? Are there any barriers and challenges for e-government in Nepal?

The main problem is the lack of knowledge of people about e-government sites and lack of trust. The lack access of transportation and communication is the main issues for implementation of master plan in a poor country like Nepal. Technology adoption is another barrier while introducing digital devices in Nepalese context. Citizens are still unaware about the security issues of e-government.

2) Does the age and gender have any association in terms of using e-government?

Finally, we came up with the above mentioned expectations from gender and age group point of view towards e-government. Gender and age group have no impact on the services of e-government either using public services or electronic communication.

The majority of citizens involved in the research were teenagers. The overall conclusion from the survey analysis and the case study is that interest of citizen is towards e-government of Nepal although there are major problems of knowledge and trust. The survey was conducted from different group of people with different age group and among them 63% was male and 37% female. According to research, 50% of citizens are satisfied in the e-government services. This result also shows that the specific age group of teenagers is only interested in using e-services. The result also makes clear that gender have also no any impact on e-government that means the social equality of Nepalese citizen on using modern technologies. Woman and man are participating in similar ratio in survey and their interest on e-government issues is too similar. This result can be a platform for the development of e-government Services in the Nepal. The document will facilitate different readers to infer information of their interests. Current situation of e-government in Nepal needs more detailed research work in this area and the mass of people need to be involved in the survey to get the relevant result. Therefore, incremental policy can be implemented to make a physical step towards well informed society.

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# 8 Appendix

## 8.1 United Nations e-government Survey 2012

| Country | E-Government 2012 | Rank 2012 | Rank 2010 | Rank Change |
|---|---|---|---|---|
| Republic of Korea | 0.9283 | 1 | 1 | |
| Netherlands | 0.9125 | 2 | 5 | +3 ↑ |
| United Kingdom of Great Britain and Northern Ireland | 0.8960 | 3 | 4 | +1 ↑ |
| Denmark | 0.8889 | 4 | 7 | +3 ↑ |
| United States of America | 0.8687 | 5 | 2 | -3 ↓ |
| France | 0.8635 | 6 | 10 | +4 ↑ |
| Sweden | 0.8599 | 7 | 12 | +5 ↑ |
| Norway | 0.8593 | 8 | 6 | -2 ↓ |
| Finland | 0.8505 | 9 | 19 | +10 ↑ |
| Singapore | 0.8474 | 10 | 11 | +1 ↑ |
| Canada | 0.8430 | 11 | 3 | -8 ↓ |
| Australia | 0.8390 | 12 | 8 | -4 ↓ |
| New Zealand | 0.8381 | 13 | 14 | +1 ↑ |
| Liechtenstein | 0.8264 | 14 | 23 | +9 ↑ |
| Switzerland | 0.8134 | 15 | 18 | +3 ↑ |
| Israel | 0.8100 | 16 | 26 | +10 ↑ |
| Germany | 0.8079 | 17 | 15 | -2 ↓ |
| Japan | 0.8019 | 18 | 17 | -1 ↓ |
| Luxembourg | 0.8014 | 19 | 25 | +6 ↑ |
| Estonia | 0.7987 | 20 | 20 | |

Table 5 E-government World Rank 2012 (7)

## 8.2   Questionnaires

Are you resident of Nepal?

Yes

No


Name


Age Group


21-25

26-30

31-35

36-40

More then 40


Gender

Male

Female


Occupation

1. How often do you use internet?

Daily

Weekly

Monthly

Yearly


If you used e-government at least once – please answer

Following questions:


2.  How often do you feel ease in the access of e-government site?

Sometimes

Always

Never

3. Do you think these sites are useful?

Somehow

Yes

No

4. Do you find the speed of reply sooner?

Yes

No

Sometimes

5. Are these services maintained the security and privacy of your personal details?

I don't know

Yes, For sure

No, they don't care

6. Have you ever completed the whole data process in E-government?

Yes

No

7. Do you trust in e-government?

Yes

No

8. Are you satisfied with e-government?

Yes

No

If you have not used e-government yet please answer these

10. What are the reasons for not having used e-mail, Internet websites or tablet / Smartphone apps to come into contact with public agencies or officials?

- I was not aware of the existence of relevant websites or online services
- I preferred to have personal contact to get what I wanted/needed
- I expected to have things done more easily by using other channels
- I did not use the Internet because of concerns about protection and security of
  Personal data
- I did not have the skills or did not know how to get what I wanted/needed
  Via the Internet
- I could not find or access the information or services I wanted/needed
- The relevant services will require personal visits or paper submission anyway
- I tried but I abandoned the service, because the service was too difficult to use
- I tried but I abandoned the service, because the service's website or application had
  technical Failures.
- I did not expect to save time by using the Internet to get what I wanted/needed

Other reasons

11. If you were to come into contact with public agencies or officials in the future, how Likely is it that you would use e-mail, Internet websites or tablet / smartphone apps?

- Very likely, almost certainly
- Likely
- Neither likely nor unlikely
- Not likely
- Not very likely, almost certainly not

12. If you were to come into contact with public agencies or officials in the future, by

Which of the following means would you prefer to interact?

- In-person, face-to-face
- Mail, posted letter, fax
- Telephone (fixed line or mobile)
- SMS (texting)
- E-mail
- Internet websites
- Tablet / smartphone applications

# 9   List of Abbreviations

G2G:          Government to Government

G2B:          Government to Business

G2C:          Government to Citizen

OECD:         The Organization for Economic Co-operation and Development (OECD)

HLCIT:         High level Commission for information Technology

NITC:          National Information Technology Centre

NEMP:         National E-Government master plan

IT:            Information Technology

EU:            European Union

ICT:           Information and Communication Technology

UNASPA:      UN and the American Society of Public Administration