

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of system engineering**



**DIPLOMA THESIS**

**Analysis and design of online public service**

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# CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Department of Information Technologies

Faculty of Economics and Management

## DIPLOMA THESIS ASSIGNMENT

Hanan Ahmed

Informatics

Thesis title

**Analysis and design of online public service**

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### Objectives of thesis

The main goal is to analyse and design a new online public service.

Partial goals are:

- to characterise the current state of online public services and e-government readiness in Pakistan;
- to analyse opportunities and barriers for online public services in Pakistan and;
- to analyse and design a new online public service and to make an overall evaluation.

### Methodology

Methodology is based on the analysis of the literature and secondary data about e-government in Pakistan. The practical part will be based on analysis of opportunities and barriers for new mobile online public services and design of a new service with the use of software engineering methods. Based on the literature review, analysis results the further recommendations and conclusions will be formulated.

## **The proposed extent of the thesis**

60 – 80 pages

## **Keywords**

Analysis, e-government in Pakistan, comparison, online services, web application, physical security, logical security, e-services

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## **Recommended information sources**

AL-HAKIM, Latif. 2007. Global e-government- theory, applications and benchmarking. s.l. : Idea Group Pub (E) (2 Feb 2007), 2007. ISBN 1599040298.  
HEEKS, Richard. Implementing and managing eGovernment: an international text. Thousand Oaks, Calif.: SAGE, 2006, ix, 293 p. ISBN 07-619-6792-3.  
KABANI, Asif. MANAGING E-GOVERNANCE IN PAKISTAN. Islamabad : Government of Pakistan, Islamabad, Pakistan.

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### **Declaration**

I declare that I have worked on my bachelor thesis titled "Analysis and design of online services" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the master thesis, I declare that the thesis does not break copyrights of any third person.

In Prague on 31.03.2015

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Ahmed Hanan

## **Acknowledgement**

I would like to thank Ing. Miloš Ulman, Ph.D. for his supervision and all the help he provided me. I would also like to thank all the participants who took a part in survey and helped me to get the best results for my thesis.

**Analysis and design of online public service**



**Analysis and design of online public service**

## **Souhrn**

Tato práce se zabývá bariérami e-governmentu v Pákistánu a některých dalších rozvojových zemích. Hlavním cílem této práce je identifikovat problémy a snažit se poskytnout vhodné řešení, nebo návrhy. Práce se snaží, aby projednala současnou situaci e-governmentu v Pákistánu a snaží se analyzovat úspěch těchto služeb. Jakmile bariéry budou zjištěny, autor se pokusí navrhnout on-line portál pro služby. Tento portál bude vycházet z literatury a výzkumů, které budou provedeny. Chcete-li získat přehled služeb on-line, je důležité se ptát lidí, o své zkušenosti a pokusit se identifikovat problémy. Je důležité identifikovat problémy, než cokoliv bude navržen.

V praktické části této práce bude širší průzkum, který bude proveden s některými dalšími rozvojovými zeměmi, které jsou zeměmi sousedícími s Pákistánem. To bude poskytnout představu o vývoji novou službu. Mezi služby, které budou poskytnuty budou založeny na studiích odebraných z průzkumů a osobní zkušeností autora.

## **Klíčová slova**

E-government, Pákistán, průzkum, porovnání, bariéry, návrh online služeb

## **Summary**

This thesis deals with the barriers of e-government in Pakistan and some other developing countries. The main goal of this thesis is to identify the problems and try to provide an appropriate solution or suggestions. The thesis tries to discuss the current situation of e-government in Pakistan and try to analyse the success of those services. Once the barriers will be found out the author will try to propose an online service portal. This portal will be based on the literature and the surveys which will be conducted. To get an overview of online services it is important to ask people about their experience and try to identify the problems. It is important to identify the problems before anything will be designed.

In practical part of this thesis a broader survey will be done with some other developing countries which are neighbouring countries of Pakistan. That will give an idea for developing a new service. The services which will be provided will be based on the studies taken from the surveys and personal experience of the author.

## **Key words**

E-government, Pakistan, survey, comparison, proposal for online services



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## **1. Introduction**

E-Government is one of the most important instruments for modernization and reform as governments deal with the continuing pressure of increasing their performance and adapting to the pressure of the new information society. (Morven McLean, 2004)

The ability to improve citizens' access to services has made e-Government an attractive investment for government organisations, fuelling worldwide implementation of such applications. (Rahman, 2008)

Electronic government, or e-Government, is enabling government organisations to give better services to their constituents. Transactions such as filing taxes online, applying for jobs, renewing driver's licenses, and ordering recreational and occupational licenses can now be conducted online, quickly and efficiently. (West, 2004)

Ghazzawi Khalil quoted Dr. Daniet Hae Dand Lee and wrote in his article that as many public sector organizations are either planning for or implementing major e-Government projects, there is a growing need to understand how these projects can be successfully managed for maximum realization of their potential benefits. (Khalil, 2014)

As so many public sector associations are either making arrangements for or executing real e-Government ventures, there is a developing need to see how these activities can be effectively overseen for greatest acknowledgment of their potential advantages.

Andrew Pinder said that good, reliable and trustworthy public services built around the needs of the people are very important for a modern, fair and changing community. (Pinder, 2004)

Government services are expected to be socially inclusive. This means that all citizens who want to use these services must have ready access to these services. It also indicates that all such citizens must have the knowledge to use the system provided by the government and also feel confident and comfortable using it. This presents huge challenges to government as it implies ready access to computers and a satisfactory level of ICT literacy. In developing e-Government services, the readiness of citizen groups to use self-service channels must be taken into account, as must the complexity and requirements of the service. A high proportion of interactions between citizens and the public service are in the areas of health and social services where citizens tend to be elderly, in poor health and of

lower educational and income backgrounds. Many of these will require assistance in accessing public services, either at front desks or over the telephone. They may not be in a position to benefit from a self-service channel where the citizen has to do much of the work of data entry. (Colm Reilly (Chair), 2003)

The centrality of the citizen is the key concept in the provision of e-Government. Modern technologies have the potential to create seamless, responsive and citizen-centric government for the benefit of all. This can free the citizen from the need to understand the complex structures of government in order to be able to deal effectively with it. However, it also requires that government embrace the concept of a single integrated delivery channel that enables the citizen to access the exact information or government service required. Such a development has the potential to transform the relationship between the citizen and government. By providing quality service, promoting transparent and accountable government, and enabling the citizen to engage with the public policy process, e-Government helps build trust between the citizen and government. Such trust is an essential element in giving people the confidence to use online systems, and in good governance generally. (Colm Reilly (Chair), 2003)

E-Government has fallen behind general e-Commerce. E-Commerce, the private division's version of leading business electronically, made the way for e-Government and was, in many ways, the catalyst for it. Early e-Government was mostly limited to non-value-based information or transactions with organizations. Just static information, such as instructions about acquiring building licences or a brief history of a district, was included on a website. Government-to-business (G2B) transactions were the first kind of genuine online transactions. Normally, these transactions included large-scale procurement and were normally kept to closed net-work we are to repair the individual's awful loss of community faith, citizen involvement is vital. Everybody individuals must feel that they are listened to, that they are respected, and that can make a difference.(Asgarkhani, 2005)

## **1.1. Government**

Before we start finding more about e-government, we should understand the meaning of government. It is important to know what is government and what are its responsibilities towards its people.

The part of civil administration in governance is a proceeding topic of discussion and argument. The present overall reassessment of the functions of the State and of public authorities and public servants emerges from two big sources: one is globalization and its effects on what governments must do to adjust and respond to quickly changing global economic, social, political and technological trends; the other is expanding disappointment between citizens in numerous nations with the functions of government and the services that public administrations provide. Globalization – the development toward more prominent connection, integration, and interdependence among individuals and associations across national borders – is increasing transactions among nations in trade and investment and in the worldwide streams of capital, people, technology, and information. 1It is clear in the developing levels of universal political collaboration and boundless social and social exchange that have happened over the past quarter of a century.2 Globalization has brought both profits and difficulties to nations around the world. 3 Globalization offers new economic opportunities additionally forces new political, social, mechanical, and institutional complexities, particularly on poorer nations, that administrations must deliver keeping in mind the end goal to animate more impartial financial and social improvement. In order to benefit from more open and far reaching economic interaction, governments must back an economic system that promotes and facilitates the capacity of business enterprises to compete successfully in global markets and of people at all economic levels to earn a respectable livelihood.(Kumar, 2013)

## **2. Objectives and Methodologies**

The main goal is to analyse the weaknesses of the current system in Pakistan and design a new online public service which would provide the basic services on the same portal.

Partial goals of this thesis are to characterise the current state of online public services and e-government readiness in Pakistan and that would be done through survey and based on the own experiences of the author.

Further the thesis will try to analyse opportunities and barriers for online public services in Pakistan based on that it will design a new online public service and to make an overall evaluation. This design will not be considering all the services but it will be a design and the thesis will further discuss how that design can be improved and take maximum benefits.

Methodology is based on the analysis of the literature provided by the government and some other reports and secondary data about e-government in Pakistan. The practical part will be based on analysis of opportunities and barriers for new online public services and design of a new service with the use of software engineering methods. Based on the literature review, analysis results collected through the surveys, the further recommendations and conclusions will be formulated.

### **3. Literature review**

E-Government is described as the use of ICT to enhance access to, and delivery of, government services to benefit citizens, businesses and government employees (Horan, 2005). E-Government undoubtedly has the potential to eradicate (if not) then lessen administrative and development dilemmas (Schuppan, 2009). E-Government implementation provides significant benefits, including among others such as:

- Improved efficiencies, greater access to services, greater accountability, transparency and citizen empowerment (L.L. Tung, 2005),
- Lowered costs and time for services (D. Gilbert, 2004)
- Strategic advantages e.g. improved decision-making through streamlining of information, enhanced knowledge sharing and organisational learning, improved interactions with citizens, and greater ability to effect organisational change (J. Zhang, 2005).

There is a wide gap in the rate of growth among economically developed and developing countries (Gupta, 2008). E-Government projects absorb an increasing proportion of public sector budget to fulfil promises to provide solutions to many public sector problems. While many governments have recognised and taken initiatives to implement e-Government projects and applications in the respective domain, evidence has shown that most e-Government projects fail that can be classified into total failures, in which the system is never implemented or is implemented but is completely abandoned, and partial failure, in which major objectives are not attained 'or' there are significant undesirable outcomes (Heeks, 2005). The target group of e-Government services is highly heterogeneous, as it comprises the entire population of a country, while e-commerce usually focuses on single target group. Government agencies must take all the members of a population into account, which should result in a system design that caters to different cultures, languages and skills, political opinions suggest that governments need to develop

e-Government capability by maturing through a learning curve that resembles repeated S-curves, through integration between local and provincial government departments at the back-end. At the front-end, a single portal is required to facilitate the citizens. In the end, mature e-Government is characterised by high level of capability and performance of multiple dimensions. Capabilities include the ability to share data and information across different government departments by reducing the process time through re-engineering the system and ability to capture and share the knowledge of government employees at the highest level.(Karl W. Sandberg, 2007)

### **3.1. E-Government in Developing Countries**

According to Richard Heeks, most of the time, developing countries are caught in spending resources to push significant changes like e-Government on the premise of models, which may not work in contexts that are significantly different from the advanced ones. (Heeks, 2002).

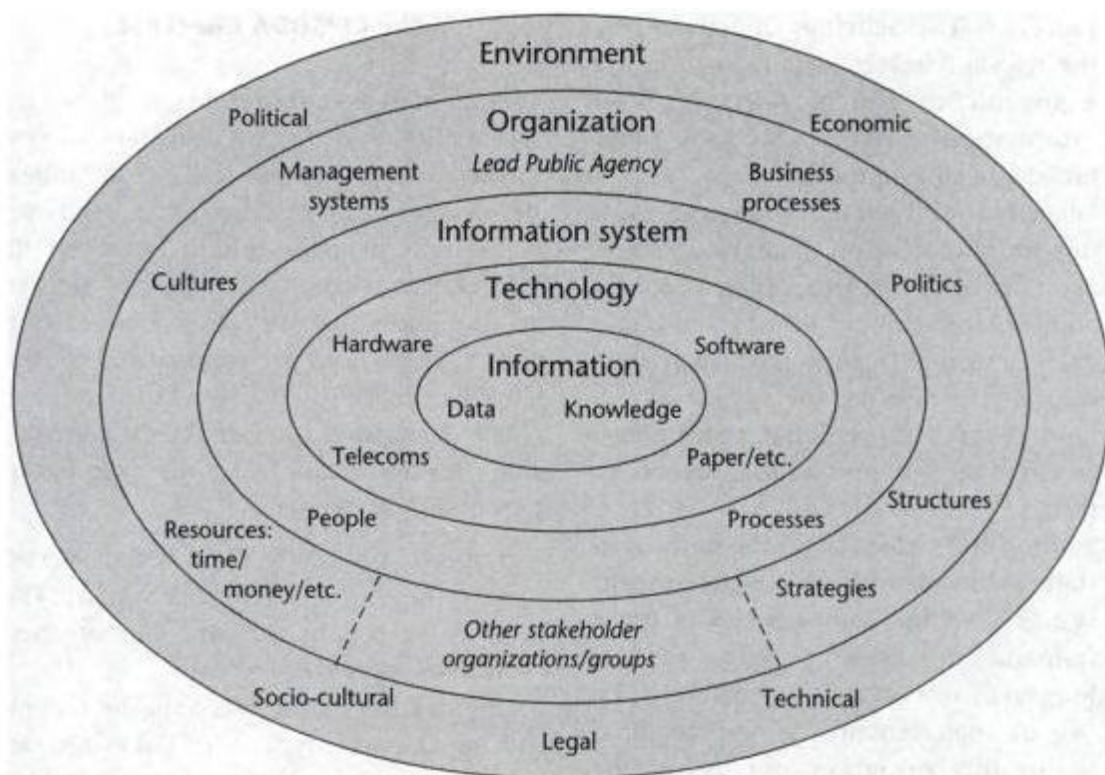
In developing countries, the topic of e-Government is getting popular one and research in this area is focused upon government related problems and usability of e-Government websites however little attention has been given to people's perspective.(Jyoti Choudrie, 2004)

E-Services offered by government are much more than simple automation and it improve civic involvement in policy making process. However, e-Government is not e-business, so government cannot simply transplant private sector ideas into the public sector. Thus, at the same time as the government may trigger development of a new technology, its regulations can end up holding back the natural diffusion of technological innovations.(Gonzalez, 2007)

It is, therefore, suggested that the design of new e-services need to consider users' needs, as well as laws and regulations set by various governmental bodies. Citizens are normally developed loyalty to those e-Government portals that are citizen-centric and address their needs. In some developing countries, e-Government portals are not available in national and local languages, implying that e-Government is aimed at only an educated



minority. Kertesz (2003) puts forward a possible reason for the limited success of e-Government, arguing that “*e-Government initiatives in developing countries are not always based on economic soundness – instead they are fueled by lobby groups, pride or international pressure*”. He further argues that “benefits are overstated, risks and problems are disregarded” and suggests that performing needs assessment of these investments is crucial. Such analysis must be based on local needs, and resources. When discussing vested interests and resistance by government officials, bureaucracy for its control over employees, and making public organisations self-serving instead of serving society. He further argues that ICT can be used to reform bureaucracy, but e-Government failure can be a consequence of bureaucracy. (Kertesz, 2002)



Source: Implementing & Managing e-Government (2006)

Another view of e-Government is given on the basis of the processes conducted, where it is mentioned that for every single task, the system needs to capture some

information, which would be inputted by an individual, the information system would then process this information which it will eventually store and provide as an output to the whole process.

As seen by the same author Richard Heeks the management of an e-Government strategy could come in 2 forms, one being the technical/scientific mechanism of management where every task is broken to a science and then perfected to provide optimal results and look at aspects in a very qualitative manner. The second being the manner of management, considered to be the Socio-technical manner, where the social needs of the individuals are taken into consideration. The author Richard Heeks quotes March & Simons text Organizational Theory specifying that the government sector is a highly politicized environment where the use of a technical approach will not work effectively. However Heeks points out that in some cases the use of the technical approach might function based on the organizational balance. (Heeks, 2005)

### **3.2. Management of e-Government**

The writer Richard Heeks who discussed Managing e-Government looks at 3 different approaches a government can decide to take with reference to managing the e-Government programs of a country. The following areas provide a brief understanding on these 3 approaches and how they differ from each-other.

The **Central** approach of e-Government has the central government making decisions with reference to e-Government as well as information systems, policies, communications and frameworks.

The benefits seen from the use of a centralized system prove to come from 4 factors:

**Standardization** – By the management of e-Government being centralized, the use of a standard type of process, equipment and other specifics.

**Cost Saving** – The use of common purchases of equipment and products ensures a cost saving as bulk purchases prove cheaper.

**Duplication Avoidance** - Central purchase ensures that the infrastructure required is developed only once and not multiple times.

Resource Sharing – The sharing of resources like storage and primarily information prove to provide cost saving plus duplication avoidance.

A good example of Centralized e-Government is the Czech Republic where the Czech Republic's Ministry of interior manages the e-Government program centrally.

The **Decentralized** approach of managing the e-Government program induces the departments or users of the systems to make decisions with reference to how e-Government is operated in their departments. This silos based approach provides the end user the opportunity to decide on the policies and frameworks to be implemented within the department or ministry.

The benefits drawn from the use of a decentralized system are 3:

Use of Departmental Resources - The decision making and development of information systems within a department, ensures that the real needs of the users are identified and addressed, thus guaranteeing satisfaction and successful operation within that government department.

Better User Requirement Fit -Since the end user would be closer to the team handling the development of the system, the development time frame and rollout would prove much smoother and the user requirements would be better adhered to and adapted to within the system.

Perception of Lower Costs - In the past the perception of higher costs existed as the unwanted expenditure had to be taken into consideration, but now it could be argued that because the user requirements are better solved, the number of cycles that a system needs to go through is less as the product will be adapted faster by its users, therefore proving to be a cost effective.

The **Hybrid** approach is considered as an in-between of the previous two categories where decisions on e-Government are taken by both the end users and central ones; the forming which these 2 work together, is dependent on each country/case. In most cases the client server based approach has been used, where the server component is centrally managed while the client is based on the departmental aspects, so repositories are kept under the central government.

An example of Centralized e-Government would be the United States of America,

where the office of e-Government headed by its CIO council looks at the frameworks and policies which are recommended by the NIST, while at the Departmental level options of solutions are purchased through the GSA.(Heeks, 2005)

### **3.3. The European Commission and the Services for Citizens and Businesses**

Based on the E-Europe Action plan, drawn up in the year 2002, a list of services was drawn up for citizens and businesses. The list had a set of country independent services that were deemed as necessary for the countries within the European Commission. 12 of these services were meant for citizens while 8 services have been defined for businesses, the following is the list of services defined by the European Union:(COMMUNITIES, 2005)

#### **3.3.1. Public Services for Citizens**

Income taxes: declaration, notification of assessment

Job search services by labour offices

Social security contributions (3 out of the following 4):

Unemployment benefits

Family allowances

Medical costs (reimbursement or direct settlement)

Student grants

Personal documents (passport and driver's licence)

Car registration (new, used and imported cars)

Application for building permission

Declaration to the police (e.g. in case of theft)

Public libraries (availability of catalogues, search tools)

Certificates (birth, marriage): request and delivery

Enrolment in higher education / university

Announcement of moving (change of address)

Health related services (e.g. interactive advice on the availability of services in different hospitals; appointments for hospitals.)(COMMUNITIES, 2005)

### **3.3.2. Public Services for Businesses:**

Social contribution for employees

Corporation tax: declaration, notification

VAT: declaration, notification

Registration of a new company

Submission of data to statistical offices

Customs declarations

Environment-related permits (incl. reporting)

Public procurement(COMMUNITIES, 2005)

### **3.4. E-Government in Pakistan**

The e-Government in Pakistan was established October 2002. The e-Government was created by the Ministry of Information Technology. So far following projects have been completed:

- Online processing of Hajj applications and status tracking for arrangements for pilgrims
- Automation of Prime Minister Secretariat, Islamabad
- E-Enablement of Senate & National Assembly of Pakistan
- E-service for submission of documents at Securities and Exchange Commission of Pakistan
- Automation of Estate Office
- Development of Urdu Lexicon, Machine Translation & Text to Speech Software for Urdu Language
- Online Access to Statutory Case Laws at District Bar Associations
- Automation of Patent Office, Karachi

- E-Enablement of Press Clubs
- Salary Disbursement through ATMs
- IT Skills Training Programme for Probationary Government Officers
- Process Mapping for improving efficiency of Ministry of Science & Technology
- Installation of LAN and implementation of Mail Tracking and Internal E-mail System at 07 Federal Government Divisions
- IT Technical Support to Provinces and AJK
- Development of PPHI Website(Board)

### **3.4.1. Background**

Here is a short background of e-government in Pakistan. E-Government has been utilized by grown and developing countries to be an empowering agent toward quickening methods, conveying a large amount of services to public and organizations, expanding transparency and responsibility while decreasing the costs. Furthermore, in developing countries it has been perceived as an empowering agent toward catapulting governments into the twenty-first century while jumping different eras of innovation. It is in this light that the Government of Pakistan has built the E-Government Directorate under the Ministry of IT.(Technology, 2005)

### **3.4.2. Goals**

The objectives for implementing this E-Government plan for the Government of Pakistan are the following:

- The efficiency and effectiveness of the government will increase.
- There will be an increase in Transparency and Accountability decision-making.
- There will be an improvement in public service to citizens efficiently and cost effectively.(Technology, 2005)

### **3.4.3. Key Success Factors**

The government of Pakistan should study e-government programs of some developed countries, it should also consider the lessons they learned from mistakes through IT projects of the government of Pakistan. The following factors have been identified as the key factors for quick and successful implementation of e-government in Pakistan.

- Sponsorship should be top-level.
- All the ministries should make efforts and should have ownership and will to change.
- The government should have ability to convey and absorb.
- Rational approach & key structure for e-Government extends the nation over timely accessibility of funds.
- Solid connections between civil and private sector.
- Allowing amendments in laws, rules and strategies.
- Capacity of citizens to get and use public service provided through E-Government.(Technology, 2005)

### **3.4.4. Strategy**

The system proposed for the following 5 years has the accompanying notable highlights that are to be parallelized wherever workable for a quickened usage:

Fundamental Infrastructure – Deploy the essential base to all legislature agencies. This incorporates computers, intra-ministry system, office mechanization programming and intra-ministerial correspondence. To join all administration organizations to the Federal Government Data Centre for intra-ministerial correspondences and Internet and Intranet administration.

Regular Applications – An arrangement of utilizations that are normal to numerous or all divisions has been distinguished, in particular internal communication, human resource, budget, project management, document/file management and collaboration. These are to be executed in the ministry of information technology, settled there and afterward took off to all different Divisions.

Office specific applications & e-services for public – each division is to recognize high-effect forms for the agency and to give administrations to residents electronically. This is then to be actualized through the backing of Electronic Government Directorate (EGD), on the other hand, with the proprietorship lying with the individual organization.

Models – An EGD Framework is being worked on and will be made available for all E-Government extends so that reference architectures, standard approach, best practices and lessons scholarly are utilized at all undertakings.

The government must enable the environment for these strategies and this is how it can be done.(Technology, 2005)

### **Federal Government**

Top level initiative is to be given by the as of late advised National Electronic Government Council (NEGC) under the guidance of the Prime Minister. NEGC will meet quarterly to survey the advancement of the usage of E-Government. Important changes in Legislation, Rules and Regulations need to be recognized and made.(Technology, 2005)

### **Agency**

Will tackle possession and actualize their E-Government program with the backing of EGD. Preparing will be made obligatory for all representatives of or higher than Grade BPS-5. An Awareness program will be begun for all workers and civilians.(Technology, 2005)

### **EGD**

EGD (Electronic Government Directorate) should be should be made a connected bureau of the Ministry of Information Technology to allow it hierarchical and money related self-rule to uproot pointless procedural delays. (Technology, 2005)

### **3.4.5. Essential measures for successful implementation of the E-Government strategy**

Here are some of the measures which are identified by the government of Pakistan as essential in case of successfully implementing the strategy for e-government plan for



coming five years.

It is suggested that the strategy and five years plan be endorsed by the federal cabinet as a general structure for the usage of e-government in the Federal Government. It would be possible to setup a board of trustees to submit on a half-yearly premise suggestions on obliged update of secretariat instructions, rules and regulations.

Guarantee reconciliation and interoperability by making agreeability to EGD Framework guidelines obligatory for all huge IT anticipates inside the Federal Government.

Fundamental IT training ought to be made obligatory for all government workers of Grade BPS-5 or more. Agreeability ought to be guaranteed inside twelve months while giving money motivators to effective members.

All the divisions who will be the part of this strategy should be given these targets:

A point of convergence for e-government at the level of Joint Secretary ought to be designated in every division for the committed coordination, program administration and responsibility for e-government system of the separate agency.

Each division is to relate to the assistance of EGD, inside three months, three high effect forms/ e-administrations for residents for e-enablement.

Possession is to be made with the point of convergence to quicken the execution inside twenty-four months for:

- Federal Government budget application
- PSDP administration application
- Human Resource Management
- Electronic Hiring
- Electronic Procurement

Build maintenance of IT experts on contracts in the Federal Government through lifting time period requirements for contractual workers.

Change the status of EGD to one of a joined bureau of the Ministry of Information Technology to give EGD authoritative and money related self-rule while holding the support of the Ministry of Information Technology. (Technology, 2005)

### **3.5. Beginning of E-Government in Pakistan**

E-Government is perceived globally as an empowering influence toward attaining to great administration while expanding the capacity of residents and organizations to get to open administrations in a powerful and expense productive way. Development and the diminishing in expense of advancements has made e-government an empowering influence of decision for developing nations to jump crosswise over various eras of innovation. The Federal Ministry of Information Technology has been intensely mindful of this developing reality and has included e-government as a need region in its first National IT Policy and action plan, approved by the Federal Cabinet in 2000.

Engaged by the IT policy, the Ministry of Information Technology set itself the undertaking of softening the latency up the e-government area by actualizing and supporting activities in those associations whose will, responsibility and possession towards e-government frameworks could be won over effectively. All the while, the Ministry of Information Technology reinforced the limit not just of its own IT wing by employing specialized specialists as Project Managers, additionally by building the e-government directorate, in October 2002, for creating more noteworthy concentrate on e-government. The E-Government Directorate presently remains at expert quality of nineteen persons.

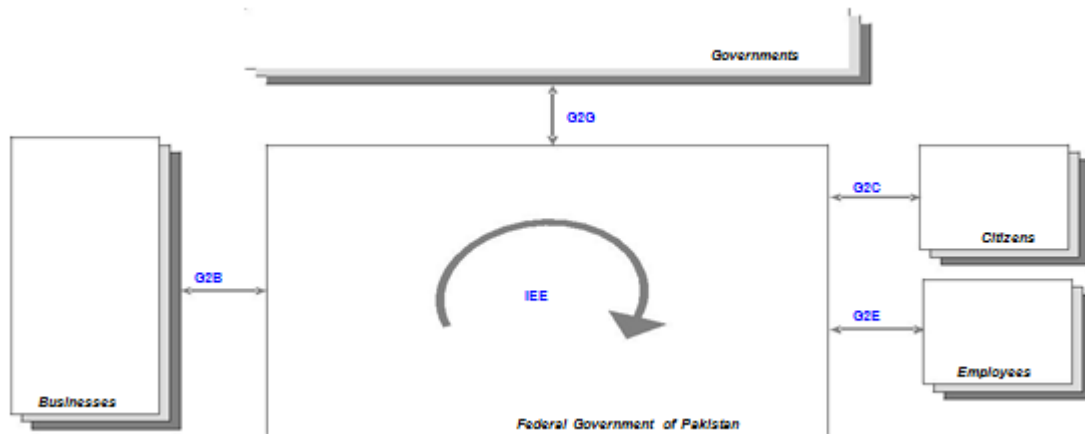
Since the year 2000, the Ministry has used PSDP trusts of Rs. 3.68 billion in the IT area, of which Rs. 281 million have been particularly used for e-government ventures. E-Government extends as of now in the usage pipeline are worth about Rs. 1.5 billion.(Technology, 2005)

### **3.6. Relations of E-government**

Characteristics of e-government can be described as the utilization of Information and Communication Technologies (ICT) to support forms inside the government and for the conveyance of administrations to its customers, including different associations, public and some other business organizations.

The extent of e-Government in the setting of the Federal Government of Pakistan is characterized as a blend of inward e-enablement and the outer procurement of e-Services to

partners of the Federal Government. The following picture shows the scope and under the picture the relationships are discussed.



- **G2G: Government-to-Government** incorporates Federal, Provincial, Local, and also Governments of different nations and global orgs. To consider procedure and IT-framework coordination and additionally the procurement of administrations that support critical managerial reserve funds and enhance administration conveyance to nationals.(Technology, 2005)
- **G2B: Government-to-Business** The main goal of G2Bis to reduce the burdens on business. It provided the digital communication using the language of e-business known as XML. The government can take advantages by reusing of commercial electronic transaction protocols. G2B can help businesses by increasing the awareness of opportunities to work with the government. (Global)
- **G2C: Government-to-Citizen** it should include all the citizens of Pakistan. It should provide services which should be easy to find and easy to use. It should provide higher speed, better quality and better accessibility to the citizens.(Technology, 2005)
- **G2E: Government-to-Employee** it should include all the government employees of Pakistan. It should provide services which should be easy to find and easy to use. It

should provide higher speed, better quality and better accessibility to the employees to work more efficiently.(Technology, 2005)

- **IEE: Internal Efficiency and Effectiveness** incorporates making great utilization of current innovation to diminish costs and enhance nature of the national government services and divisions, by utilizing industry best practices.(Technology, 2005)

### 3.7. Basic phases of E-Services to citizens

Here are some of the basic phases to public in e-government. These phases are divided in several categories which are following:

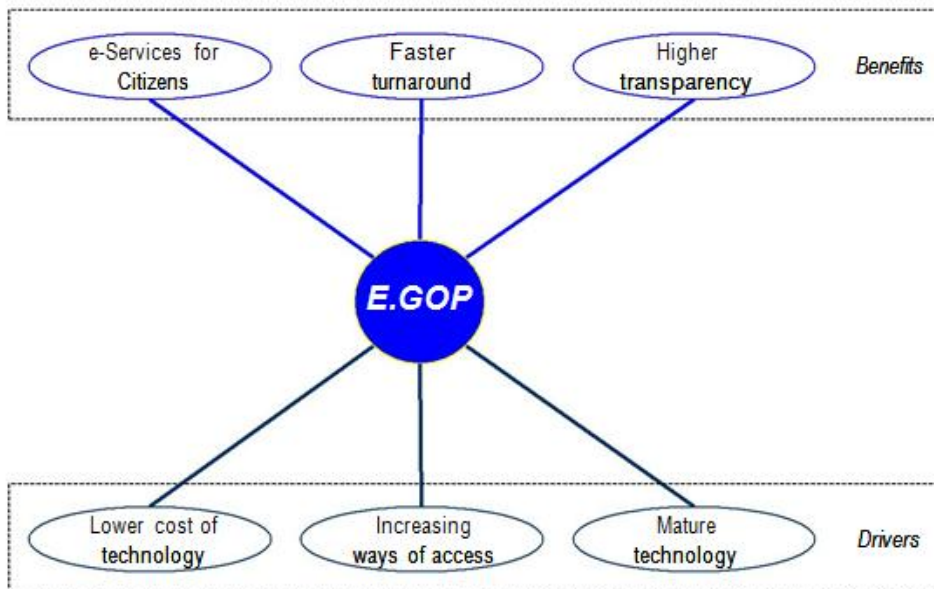
- **Informational:** The first phase is informational phase which incorporates the provision of information alone. The quality, ease of use and currency of the content tells the value of this phase. This is the easiest phase of all.
- **Interactive:** This is the second phase of e-services provided in the e-government and its job is to just provide online interaction. For example, people can write complaints or applications for job online but this phase does not provide secure transactions such as financial or some other transactions which need high level authorization.
- **Transactional:** The next phase is called transactional phase and this phase is upgrade version of the previous phase. This phase provides secure transactions with better authorization. In this phase people can apply for passports, NICs and they can pay online. This phase needs a high level security and good infrastructure for enabling secure transactions.
- **Collaborative:** The last phase is collaborative, in this phase the public and the business organizations collaborate with the government on different type of processes, projects, etc. This phase is important because businesses work with the

government and also private NGOs and public work with the government. It needs a system which enables to bring all suppliers, consumers and the government on the same place.(Technology, 2005)

### 3.8. Drivers & Benefits of E-Government for Pakistan

At first, e-government was used more in developed nations. The diminishing expense of ICTs makes their organization simpler for developing nations. The growing development of innovation guarantees that the investment danger is lower. This coupled with the higher and continually developing access to these advancements for public are the primary drivers for E-Government in developing nations. E-Government today permits nations like Pakistan to jump over various eras of innovation to convey productive and financially savvy public services to public and organizations.

The following figure demonstrates the drivers of E-Government and the basic benefits which can be taken.



Source: Electronic Government Directorate Ministry of Information Technology Pakistan

- **Improve Efficiency and Effectiveness:** enhance the productivity in the administration by supporting the methodology through IT frameworks and applications. Proficiency is additionally infrequently called doing things right. This

implies finishing the ventures of the business process quick, while diminishing blunders, etc. While effectiveness is likewise called doing the things right (Business Process Reengineering) and includes changing the business procedure to avoid non-value-add include steps and decreasing the heap of managerial work needed.(Technology, 2005)

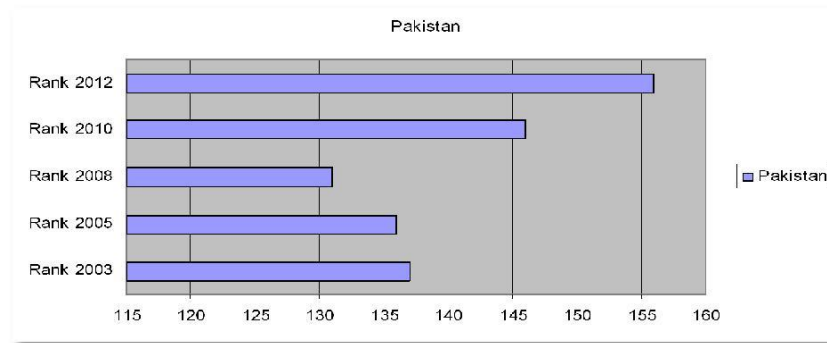
- **Increase Transparency and Accountability:** expand the transparency and responsibility in the government by institutionalizing methods, permitting the observing the flow of work through the capacity to get to continuous status, predefined checkpoints in the work process and computerized accelerations in the matter of delay. Responsibility is supported through clients assigned to parts which in turn are doled out to ventures of the business process. Each step of a procedure is caught including review data through a protected arrangement of the individual included. Intermittent reports against Key Performance Indicators (KPIs) and additionally ongoing reports for exemptions build the responsibility of workers.(Technology, 2005)
- **Deliver public services to citizens efficiently and cost effectively:** a definitive objective of the E-Government system is to have the capacity to offer an expanded arrangement of public services to people in a productive and expense arrangement of effective interior government forms with the purposes of truth (interfaces) with citizens. The effectiveness of cost in the case of Pakistan not just incorporates the expense of launching the methodology additionally but also the capacity to get to the services provided electronically. This may be carried out by conveying less expensive processing assets while expanding the augmentation element of public every registering asset by presenting purposes of imparted figuring (e.g., through stands, slender customers in PC pools, and so on.). Access should also be extended to the people who don't speak English talking. That part of the population should be provided, with services in their native language which is Urdu.(Technology, 2005)

### **3.9. E-Government Challenges in Developing Countries**

Schuppan explained that developing countries have been launching e-government ventures with backing from donor associations. Under the name “Information and Communication Technologies for Development” (ICT4D), these associations are emphasizing the relevance of ICT in general, and e-government in specifically, as a approach to promote development and decrease poverty; desires from these developments are high. One could contend that e-government can, in general, contribute to solving managerial issues, however e-Government and its connected authoritative ideas were produced in industrialized nations; it should not be expected that this idea is consequently proper for developing countries like idea of e-commerce is not necessarily work in e-Government area. In this manner, it is needed to study local culture, association standards and individuals e-Readiness before applying these ideas in developing countries. Access to this technological infrastructure must be considered with supporting framework, for example roads and reliable electricity etc. These among different limitations for example the absence of training and education of both citizens and workers, contribute to the digital separation, which is it-self a major constraint to understanding the objective of e-Government (Reffat, 2006). The digital separation is a barrier to e-Government in that individuals who do not have access to the internet will not be able to take advantages from online services. (Schuppan, 2009)

### 3.10. National e-Government Initiatives of Pakistan

It has long been noticed that the public of Pakistan have various complaints regarding the existing system of public services which are cumbersome and outdated. There is widespread inefficiency and malpractice, thereby causing public frustration and dissatisfaction. In the period from 1976–97, Pakistan Public Administration Research Center formulated and submitted more than 200 recommendations to the committee for improving the quality of public services and work at the administration level in public sector organisations. Out of those, 106 recommendations were approved which covered 53% of the total recommendations. Despite these developments, it has been realised that the existing system is still cumbersome, and out of step with the requirements of modern administrations. This has given rise to wide malpractice, inefficiency and corruption.(Arfeen, 2014)



Source: United Nations E-Government for the People E-Government Survey 2012

During the last decade, governments around the world have launched e-Government projects aimed at providing electronic services to citizens (Mark Horst, 2007). In Pakistan, priority was shifted due to e-Government initiatives public policy making became transparent. This included placing policy drafts on the ministry’s websites and allowing all the stakeholders to review and openly debate the policy before it was finalised (Rafiq, 2009). According to the United Nations e-Government Survey, measured for 192 countries, Pakistan’s ranking was 137 in 2003, which improved to 136 in 2005 and to 131 in 2008. However, in 2010 its ranking dropped drastically by 15 ranks to 146. In same way, in 2012 its ranking further dropped by 10 ranks to 156. The majority of the high scorers in the 2010 e-Government development index are South Korea, United States and Canada, all high-income countries, who have the financial resources to expand and rollout advanced e-Governance initiatives, as well as to create a favourable environment for

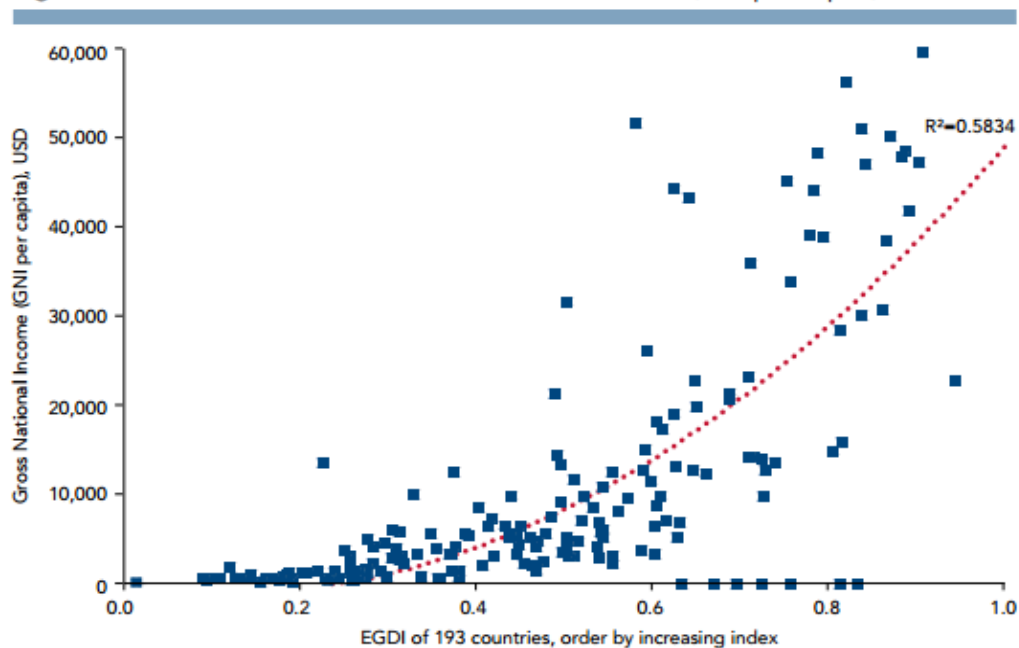


citizen engagement and empowerment. Meanwhile emerging economies such as China and India rank 72 and 119 respectively while even Bangladesh has a 12 point lead over Pakistan. However, Pakistan can improve its ranking by focusing on and by finding out ways to improve citizen participation.

### **3.11. National income and e-government development**

The income level of a country is considered as an indicator of the economic performance, and thus has a strong influence on any development related to e-government. ICT infrastructure and the provision of education are connected and related to the income level of a nation. The lack of these enabling factors places strong constraints on implementing e-government initiatives, even if sound policies and national strategies are in place. As a result, and even with efforts in some countries to offer online infrastructure and services, the full vision of e-government is far from being fully realized, especially if we took closer look to the lower-middle income and low income countries, as evidenced by their poor EGDI performance. However, that national income usually does not, by itself, guarantee enhanced e-government development, as evidenced highlighted in Figure 1.5 and Figure 1.6. Some countries have significantly enhanced their e-government development ranking even if their relatively low national income, as many other countries despite their relatively high income and thereby have good opportunities for future improvement. The main point of better e-government progress is often putting in place an effective governance framework to support and manage a citizen-centric service delivery model, including an ICT laws, policies and e-government strategy, as well as enhancing institutions and building the abilities of public servants.(NATIONS, 2014)

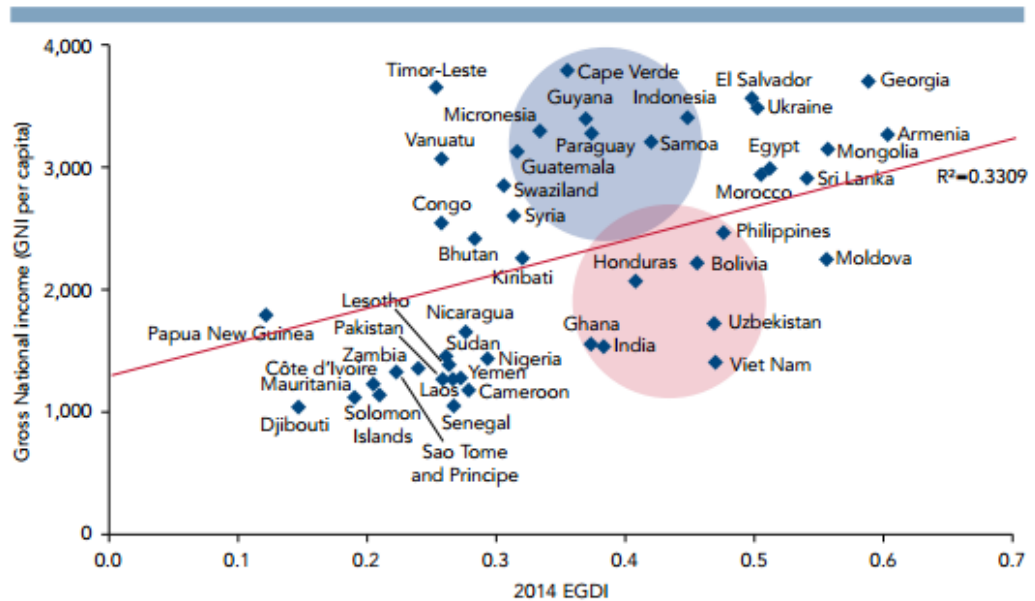
Figure 1.5. Relation between EGDI and national income (GNI per capita)



Source: United Nation's E-Government Survey 2014

These trends reveal opportunities for countries that have not achieved the level of e-government target, as have other countries in the same income group. For example, among the lower-middle income countries, there is potential for quick advancement of countries like Guatemala, Cape Verde, Guyana, Paraguay and Indonesia, as highlighted in Figure 1.6. At the same time, some countries have clearly advanced their e-government despite their relatively lower national income. These countries include Bolivia, Honduras, Ghana, Philippines, India, Vietnam and Uzbekistan.

Figure 1.6. Relation between EGDI and national income (GNI per capita), lower-middle income countries



Source: United Nation's E-Government Survey 2014

### 3.11.1. Lack of e-services for disadvantaged and vulnerable groups compounds digital disparities

There has been progress in e-services aimed at disadvantaged and vulnerable groups. In 2012, the United Nations E-Government Survey assessed that 28 % of the national government websites contained specific sections on at least one of these groups; by 2014, 64 % of the national government portals and websites provided integrated links to sources of archived information (policies, budget, legal documents, etc.) related to disadvantaged and vulnerable groups, namely people living in poverty, persons with disabilities, older persons, women and young sectors in community. Understanding the connection between the increasing online opportunities and human wellbeing, many of the developed countries have a stated policy of e-inclusion of the disadvantaged and vulnerable groups in society which are generally the last to come on board the technology train. Cross country comparisons show evidence of this divide for the disadvantaged and vulnerable groups among countries of the world. Countries with higher human development index pay greater attention to e-inclusion of vulnerable groups. Programs intended to build skills for the vulnerable groups have income - passed special ease-of-use

features for persons with disabilities, older persons, etc. In Africa, online services for disadvantaged and vulnerable groups remains lower than in other regions, with only 4 % of countries offering services for the poor and the persons with disabilities. In Asia, the disabled and vulnerable group that receives most online services is the immigrants with 38 % of countries offering this service. Oceania has 14 % of countries offering services to the older persons, persons with disabilities and the immigrants. Services for the poor are available in 21 % of the countries in Oceania. Finally, in the Americas, 31 % of countries present services for the persons with disabilities and the older persons.(NATIONS, 2014)

***Overview of online services for disadvantaged and vulnerable groups***

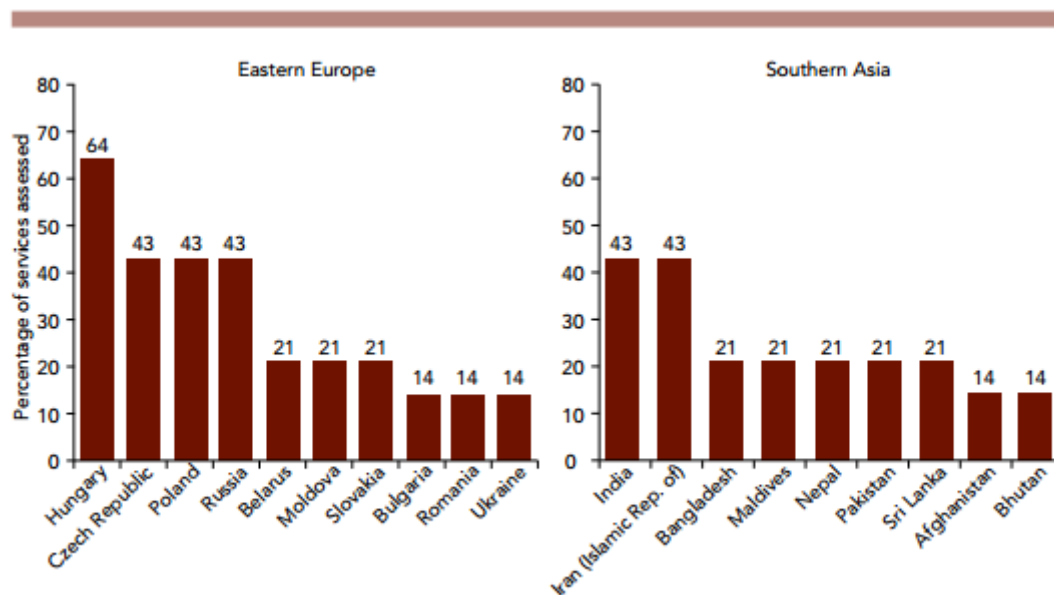
<i>Region</i>	<i>Services for poor</i>	<i>Services for persons with disabilities</i>	<i>Services for older persons</i>	<i>Services for Immigrants</i>
<i>Per centage of total countries in the region</i>				
<i>Africa</i>	4	4	6	7
<i>Americas</i>	20	31	31	17
<i>Asia</i>	34	32	30	38
<i>Europe</i>	47	53	53	44
<i>Oceania</i>	21	14	14	14

Source: United Nation’s E-Government Survey 2014

The gap between regions is imitation between countries of a main region and sub region indicating differential in method, policy, investment and focus on getting disadvantaged and vulnerable groups to get technology benefits. Figure 6.10 presents the gap in provision of online services for disadvantaged and vulnerable groups in selected sub regions. Among selected economies of Eastern Europe, Hungary, Russian Federation, Czech Republic and Poland are in advance of provision of online services to disadvantaged and vulnerable groups as compared to Belarus and Ukraine. Similarly, in Southern Asia, India and the Islamic Republic of Iran provided 43 % followed by Bangladesh, Nepal, Pakistan, Maldives and Sri Lanka at 21 % of online services to vulnerable groups (see Figure 6.10). The United Nations E-Government Survey 2014 for the first time pursued detailed services for immigrants as a group. As Figure 6.11 shows, 44 % of the countries in Europe and 38 % in Asia have some services reserved for immigrants. In Asia, Mongolia,

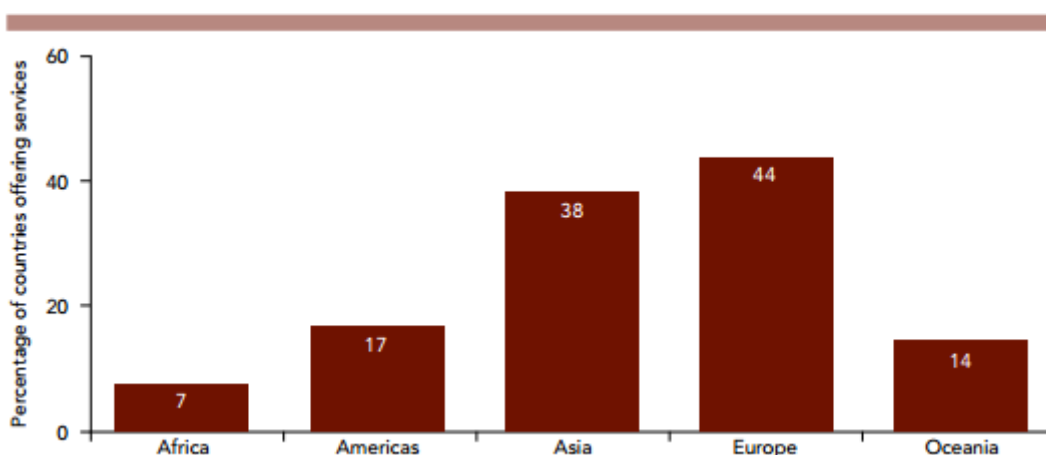
Kazakhstan, Japan, China, the Republic of Korea, Pakistan, Maldives and Sri Lanka offered services while in Europe, Czech Republic, Lithuania, Norway, Sweden, and United Kingdom were among those supporting out information and services for the immigrants.(NATIONS, 2014)

### Online services for disadvantaged and vulnerable groups in Eastern Europe and Southern Asia, selected countries



Source: United Nation's E-Government Survey 2014

### Online services for immigrants, by region



Source: United Nation's E-Government Survey 2014

As in the case of other services has priority and policy has an important role in

delivering services.

In Pakistan immigrant services are among the first and foremost reflection on the national portal.(NATIONS, 2014)

### **3.11.2. Pakistan puts immigrant services among the top popular searches**

Among other causative factors in the provision of specific services for disadvantaged and vulnerable groups is the focus and priority of a government. In the case of Pakistan a newly restored national portal puts immigrant services among the top under popular searches.(NATIONS, 2014)

### **3.11.3. The SMS-based literacy programme for women in Pakistan**

This programme (launched in 2007), which is in its 4th phase in 2013, targets to educate 1,500 illiterate women in Punjab and Sindh by using tutorials sent via SMS messages in Urdu. SMS message is “teacher, textbook and school all rolled into one”. At least 4,000 women have previously benefited from the same programme. In the newest phase, UNESCO has cooperated with government education departments to rise the project’s target, leading to more students to join the programme. With a view to growing the programme usage, the phase also includes capacity building of rural female teachers as well as user motivations such as stable ownership of the phone sets and free SMS from Mobilink (Mobilink is a Pakistani cellular company) for a fixed duration.(NATIONS, 2014)

### **3.12. E-Government Strategy in Pakistan**

Here are some of the key factors which should be adopted by the government of Pakistan in case of implementing e-government successfully. These strategies have not been applied yet. These strategies were part of the government plan for five years which remained just a plan and never was implemented.(Technology, 2005)

#### **3.12.1. Underlying Principles**

In the beginning of the plan some principles were underlying as guidance for the formulation of e-government in Pakistan and the principles are following:

##### **Top-level Ownership:**

As recognized by the Key Success Factors for E-Government and in addition through the lessons adapted in tasks, top-level ownership is needed for a quickened and effective usage of e-government.

Toward attaining to this, the NEGC (National E-Government Council) has been set up under the guidance of the Prime Minister of Pakistan.

##### **Comprehensive plan instead of piece-meal projects:**

A nice plan is needed that characterizes the diverse ranges of e-government to be executed and their needs and combination. This is pointed toward executing ventures as a major aspect of a coordinated approach as opposed to as storehouses.

##### **Priority on High-Impact Agency-specific application:**

The E-Government project must focus its resources on high-affect office particular applications. This ought to be gaged for a situation for change that recognizes the effect on the individual division in the light of increment in proficiency and adequacy and also the effect on the residents getting the respective public services.

##### **Interoperability of Applications:**

The E-Government portfolio must result in an arrangement of interoperable applications that have institutionalized interfaces and comparable building design for comparative usefulness. Wherever conceivable, applications should be duplicated.

### Outsourcing of project execution:

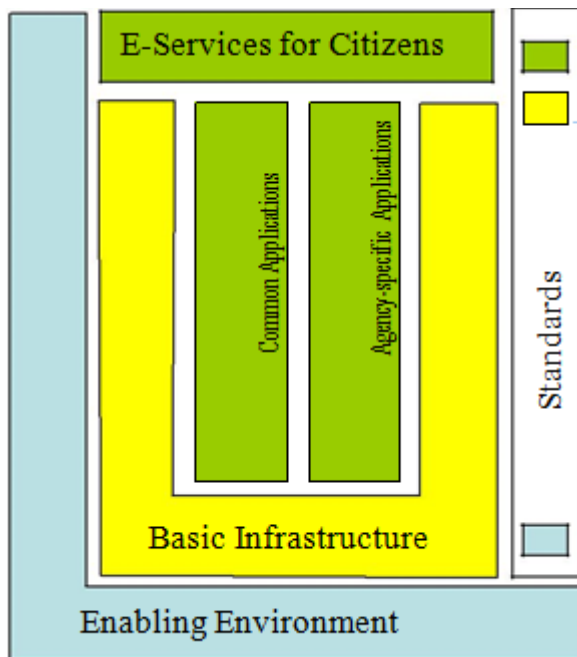
In light of asset limitations and the vast pipeline of ventures in the E-Government program, the outsourcing of task execution with clear deliverables will help toward attaining to the advantages of E-Government quicker, while reinforcing the general society private organization.

### Ongoing process of learning from best international practices:

Continuation of the methodology of gaining, from best global practices, which is now supported by numerous MoUs with South Korea, Malaysia and China. This is to guarantee that we advantage from the adapting in different nations.(Technology, 2005)

### 3.12.2. Strategic Framework

In the second step a strategic framework was designed to divide the implementation of e-government in Federal Government into this representation which is below.



Legend:

- Business
- Technology
- Applications

Source: Electronic Government Directorate Ministry of Information Technology Pakistan



One strategy to go forward in E-Government is to take the building blocks shown in the picture above one by one, i.e., first to guarantee an empowering domain, then to develop the fundamental base. After this, the advancement of common and agency-specific applications could be embraced and so on. However, because of different interdependencies between the building blocks and in addition the need to execute and acknowledge advantages in a quickened way, the method displayed in this report resolves around the parallelization of the distinctive subsections. This is practically equivalent to employment of agile methods, which bring pace and adaptability into the key approach. (Technology, 2005)

### **3.12.3. Basic Infrastructure**

#### **Components**

This is the primary building block for the utilization of E-Government in the Federal Government of Pakistan. This building block comprises of parts which are following:

- Computers for personal use or some other computing resources
- Office Productivity Suite, including word preparing, spreadsheet and presentation programs.
- Email, system management and security customers, departmental servers for sharing print
- LAN to allow electronic communication within users of ministry as well as directory services to guarantee validation and approval for clients
- Networking should be enables between the divisions for inter-ministerial communications.

#### **Strategy**

The methodology for these building blocks is to manufacture the fundamental framework in all the Divisions, their associated offices and organizations wherever essential. Fifteen divisions of the Federal Government are already outfitted with the basic infrastructure. The remaining Divisions are being outfitted with these building blocks under the Federal Government Data Centre Project anticipated that would be finished by 4QFY2005/06. After this, in the second part of the task, a Data Centre with optical-fiber connections to the Divisions is being setup that will have all Internet and Intranet

applications and also give Internet access to all clients in the LANs of the Divisions. This foundation will encourage the combination of distinctive work processes and correspondence between Ministries and additionally give the Divisions services like Internet access, and so on.

### **Future Considerations**

For a further developing of the basic infrastructure in a savvy way, the following options were being studied for attainability:

Electronic Transactions – This incorporates the fundamental foundation that takes into account secure electronic transactions that are perceived by law for organizations and public. This will empower residents and organizations to do transactions with the government that oblige an abnormal state of security, confirmation and approval, e.g., electronic instalments, applications for travel permits, and other similar services.

- **Virtualization** – the first thing to take in consideration is the offering of registering assets through virtualization of the physical committed asset of the PC by setting the majority of the processing force at an incorporated point. This abatement the expense and security risk of the essential framework. Ideas, for example, telecentres can be manufactured for people in remote and underserved ranges around virtualization.
- **Wireless LAN** – this includes supplanting wired systems near to the point of access, e.g., building, by remote access focuses. This decreases the expense and time needed for introducing and keeping up physical foundation while expanding adaptability in development.
- **Licensing** – Open Source and different alternatives are being taken a gander at for the working framework/operating system, office productivity suite and other software layers to diminish the expense of rollout. (Technology, 2005)

### **3.12.4. Common Applications**

#### **Components**

Common Applications are applications that are common to many or all Divisions of the Federal Government. Therefore, these applications can be implemented once and replicated across multiple Divisions. In the year 2002, the Ministry of IT carried out a study to identify common software applications across various government organizations. The identified common applications include the following modules:

Finance & Budgeting

Inventory & Procurement

Human Resources

Project Management

Document/file Management

E-mail, messaging, & Collaboration

#### **Strategy**

The plan for the execution and rollout of basic applications is the formed like this:

Utilize further Business Process Reengineering to adjust the module rollout the settled modules with proficient and viable courses of action over all divisions rehash the procedure in parallel for the following arrival of modules after adjustment of the first release for this process, the first arrival of modules picked incorporates the high-affect regions of Document/ File Management and Project Management. This release was planned to be taken off in Ministry of Information Technology before the end of the FY2004/05. These modules would then be settled and the methods would be reengineered to tweak the methodology. After this, these modules would be taken off to all the Divisions in a time of two to three years. In the meantime, the usage of whatever is left of the basic applications would begin, the fulfilment of which was planned for 2Q2005.

#### **Future Considerations**

Here are some of the future considerations which were considered back then in 2004/2005. Connected offices, partnerships and independent bodies working under the, Ministries ought to benefit the utilization of the characterized regular applications to acknowledge greatest profit of the execution. Further, however not straightforwardly

inside the extent of EGD, the venture might likewise be repeated at Provincial and District government levels. This replication will permit a typical domain over the government, smooth coordination and interoperability, easier maintenance and backing, and predictable update way.(Technology, 2005)

### **3.12.5. Agency-Specific Applications**

#### **Components**

Here are some of the components of agency-specific applications and the components are all applications that e-empower agency-specific administrations and methods. These applications have extremely restricted or no potential for replication in different associations.

#### **Strategy**

The following strategy was planned to implement specific applications based on the agencies. The execution and rollout of specific applications based on the agencies building block ought to be run in parallel with regular applications. This permits a speedier usage time and boosts the profits of e-empowering high effect methods and administrations in Divisions. The procedure, fundamentally, might oblige all the Ministries and organizations working under the Ministries to distinguish high-effect processes/administrations, which could be conveyed electronically. The criteria for selecting the administrations might be their scope and potential for sparing cost and time for the people, aside from including straightforwardness and responsibility simultaneously.

These kind of, organized high-affect applications might structure the centre of the five years plan for e-government in Pakistan.

#### **Future Considerations**

Here are some of the future considerations which were considered way back in 2004 and 2005. The considerations were, proprietorship from inside the partner government agency is basic to the up-front investment and accomplishment of the application. Thusly, responsibility for e-enablement program inside a division must lie with the particular organization. Devoted central focuses for e-government may be built inside the divisions and connected divisions.(Technology, 2005)

### **3.12.6. E-Services for Citizens**

#### **Components**

Here are some of the components, e-services incorporates the utilization of electronic means for all cooperation in people and government offices, including benefitting administrations from the government, understanding the status of work in advancement and getting to consequences of the methodology.

#### **Strategy**

There will be a campaign for awareness and that will focus on these areas:

Alongside specific applications based on agency, parts of techniques will be distinguished that can possibly reengineer the way the agency cooperates with public. Particularly in the high-effect process regions, the effect on public will likewise be mulled over for the prioritization of the E-Government usage.

- Data – How and what data people can access through e-government entries.  
Communication – How and in what e-empowered methods can people now utilize e-government to connect with government organizations.
- Criticism – How people can through their input help the government enhance its e-government usage and successfully utilize its speculation.
- As the bigger part of the Pakistani population obliges the utilization of Urdu, different exercises are in progress to accomplish a higher substance base and association in Urdu:
- Dictionary – This venture is adding to an online Urdu word reference and additionally an online interpreter for English substance to be interpreted into Urdu.
- Multilingual Portal – A possibility to acquaint Urdu with the Citizens Online entrance is being done, in order to make the substance gave available to a bigger part of the Pakistani population.(Technology, 2005)

### **3.12.7. Standards**

#### **Components**

Here are some of the components to keep the standards high. An absence of gauges lessens the capacity to influence lessons learned and actualizing best practice. In IT, it likewise lessens the capacity to coordinate and interoperate. The measures for E-

Government in Pakistan comprise of the accompanying segments:

**Methodology** – this incorporates the standard method for doing things. The methodology ventures toward e-empowering a procedure is characterized here alongside the deliverables in every step. The documentation and data needed is reported here to guarantee quality and capacity to broaden, work and keep up.

**Enterprise Architecture** – This envelops the E-Government outline for the whole Federal Government. It separates the building design outline into areas and characterizes these segments as standard architectures.

**Policies and Guidelines** –This incorporates all strategies and rules that are utilized for E-Government in Pakistan.

### **Strategy**

EGD has begun setting up the EGD Framework that incorporates all the aforementioned parts. The system for the improvement is as per the following:

The advancement of the EGD Framework is carried out on a need first premise, i.e., the parcels of the system are produced first that are obliged most critically. Certain parts of the system in participation with ventures and then utilized for all future activities.

Best Practices and architectures are recognized broadly and universally in the field of E-Government. The method is not to be the pioneer yet a quick adopter to guarantee the best utilization of adult and stable advancements.

Guarantee utilization of the EGD Framework by making its use and agreeability to the principles characterized in it required for all E-Government ventures

### **Future Considerations**

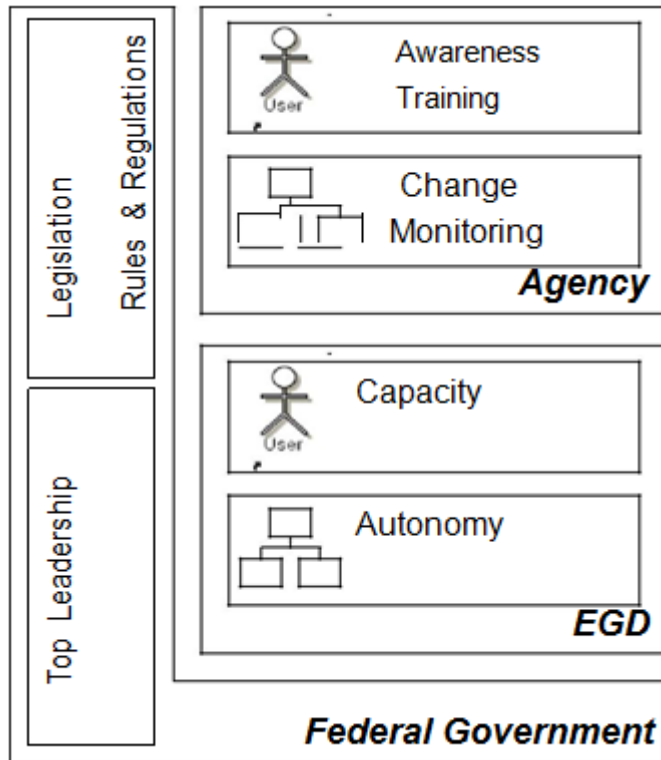
The EGD Method can be made accessible to specialists, suppliers and provincial and local governments to use through an electronic instrument. This will permit the greatest profit to be acknowledged from the EGD Framework.(Technology, 2005)

#### **3.12.8. Enabling Environment**

##### **Components**

The empowering environment incorporates the fundamental environment to guarantee an effective execution of E-Government. This building block which is shown

down has been further separated into the accompanying areas:



Source: Electronic Government Directorate Ministry of Information Technology Pakistan

### 3.12.9. Federal Government

#### Components

The segments of the empowering environment at the Federal Government level are the accompanying:

- Top Leadership – as distinguished in the key achievement elements, top level initiative is obliged to guarantee the feeling of earnestness, purchase in and quicken the fruitful usage of E-Government
- Legislation, Rules & Regulations – this incorporates the fundamental changes in enactment, guidelines and regulations to oblige the utilization of E-Government, e.g., the utilization of electronic records, electronic interactions, and so on.

#### Strategy

The following strategy was planned, for top administration the National Electronic Government Council (NEGC) has been made under the guidance of the Prime Minister.

NEGC is going to meet quarterly to survey the advancement of the execution of E-Government in the Federal Government and make any move needed to quicken the usage and resolve any issues. EGD will submit Key Performance Indicators (KPIs) and venture status reports for survey to NEGC. NEGC will drive any choices obliging the backing of the top initiative.

As E-Government is embraced by government organizations, changes in enactment, standards and regulations will be obliged to loan authenticity to the automatic systems. Also, new laws may be obliged to guarantee that E-Government frameworks and all partners influenced can work legitimately. For this a board is to be setup that will audit and recommend vital changes to enactment and standards and regulations on a semi-annual premise.

The accompanying rundown may be utilized as a beginning stage for the audit of important authoritative changes and/or revisions:

- Electronic exchanges mandate
- Electronic Crimes Act
- Information Protection Act
- Web Banking/e-business
- Consumer Protection
- Electronic Transactions Dispute Resolution
- Electronic mark Law  
(Technology, 2005)

### **3.12.10. Agency**

#### **Components**

The parts of the empowering environment at the Government Agency level are the accompanying:

- Association: Change Management – this incorporates presenting a society change in the way the office works together and collaborates with organizations and residents.
- Association: Monitoring – this incorporates the checking of the use of e-government in the office and by organizations and residents.



- Client: Awareness – this incorporates the consciousness of the client at the office with respect to e-government and its advantages.
- Client: Training – this incorporates the preparation of the client at the office in the use of E-Government systems.

### **Strategy**

Following strategies should be applied:

#### **Change Management**

Change Management must be driven by a point of convergence for the e-government program at an org. This ought to be driven by a man of in any event Joint Secretary Level. The individual committed to this undertaking must originate from inside the office and appreciate a high level of admiration, while being incentivized to claim and actualize the E-Government program effectively with the backing of EGD.

#### **Monitoring**

KPIs are to be characterized for each e-government framework that is taken off. These KPIs ought to include the utilization of the framework, the quantity of transactions, including ones finished inside a predefined time period, and so forth. These KPIs ought to be checked and distributed intermittently.

#### **Awareness**

Awareness is important for workers of organizations and additionally for the public to make the accomplishments and benefits of e-government straightforward. Likewise, this ought to be gone for urging individuals to utilize the new e-government frameworks. For this a campaign for creating awareness is to be propelled. Points of interest of this will be worked out and exhibited in the comprehensive arrangement of the whole e-government program also while tending to particular applications and administrations.

#### **Training**

Preparing of the client at organizations is the absolute most vital thing to guarantee the capacity to utilize the new framework. For this two sorts of trainings will be advertised. The principal preparing for all staff Grade BPS-5 or more will concentrate on general IT preparing on the use of computers and will be made required. For this, a money motivator will likewise be offered to all trainees effectively finishing the preparation. Exceptional

grants will be given to extraordinary trainees.

In the meantime, preparing for particular applications will be given as these are taken off to organizations. (Technology, 2005)

### **3.12.11. EGD**

#### **Components**

The last area to discuss for successfully launching a plan is EGD and the components are following:

- Self-sufficiency – this incorporates the hierarchical and budgetary independence of EGD.
- Capacity – this incorporates the limit of EGD to oversee and execute projects.

#### **Autonomy**

The current hierarchical structure of EGD requires the routine choices and supports to be steered to the Ministry of Information Technology. This expands the time required while putting an included authoritative burden on both substances. In this way, it is suggested that EGD be made a joined division of the Ministry of Information Technology to guarantee authoritative and financial related self-rule while keeping EGD in the support of the Ministry of Information Technology.

#### **Capacity**

The current staff quality of EGD does not permit it to tackle more than 20 activities all the while. On the other hand, this procedure report is concentrated around a quickened usage of E-Government that obliges a higher ability to execute. Various moves are being made to address this issue:

#### **Tendering of projects on a turnkey basis**

Attainability investigation of outsourcing undertaking administration for specific activities or task portfolios Growth in EGD assets is needed.

#### **Future Consideration**

Since provinces and districts are presently shy of limit (specialized and monetary) for executing on a solid e-government program, the Federal Government through the Ministry of Information Technology may bolster and help them in basic territories. As the provinces and districts fabricate up their own particular limits, the Federal bolster may be diminished as needs be. (Technology, 2005)

### **3.13. A report about barriers faced by the government of Balochistan**

Here some of the barriers which were identified by Muhammad Irfanullah Arfeen and Muhammad Mustafa Kamal. Both of them are researchers and went to the province of Balochistan and met the government officials personally. Here are some of the findings. The reason why this report is included is to identify the barriers faced by some province in Pakistan. The findings wouldn't be so different than the over-all situation of e-government in Pakistan. Heaving said that Balochistan is the least developed province of Pakistan.

**Lack of Capacity Building:** Balochistan Public Service Commission reported 12 empty positions for District Officers (IT) Basic Pay Scale (BPS-18) however had the capacity procure just 4 individuals at that level. Presently the commission needs to unwind the criteria to contract the IT authorities at BPS-17 lesser level-civil servants.

**Lack of IT Skills:** In Balochistan, around 1500 PCs were dispersed in 95 schools, pretty nearly 10 – 15 PCs in every lab of every school; it is watched that head administrators of the vast majority of the schools kept the PCs secured in the lab in view of the non-accessibility of a PC teacher coupled with apprehension that understudies will wrongly handle the PCs and ruin them. The PCs got to be out of date and futile as they stayed unused by the understudies amid the most recent four years. In this way the motivation behind procurement of PCs was not attained to. Around 450 administration authorities have gotten IT training, out of them just 250 had the capacity to pass the exam in the IT Institute of Quetta. It shows the seriousness of the authorities. If the will of government will be strong these systems can be implemented and people can be trained. (Arfeen, 2014)

**These are the lacks of e-government in the province of Balochistan**

Major Theme	Government of Balochistan	Current Situation	Findings/Remarks
Lack of Capacity Building	Balochistan Public Service Commission	<ul style="list-style-type: none"> <li>□ Created 12 vacancies for district IT officers but able to hire only 4 people.</li> </ul>	<ul style="list-style-type: none"> <li>□ Deficiency of skilled human resources</li> <li>□ Need to relax the criteria for hiring of officials</li> <li>□ Need to offer incentives</li> </ul>
Lack of Infrastructure	Agriculture Department	<ul style="list-style-type: none"> <li>□ Agriculture Policy and water management system is not yet online.</li> </ul>	<ul style="list-style-type: none"> <li>□ Website must be developed to highlight its three essential components: Research; Agriculture engineering; and facilities extended by the agriculture secretariat.</li> </ul>
Lack of Finance	Education Department	<ul style="list-style-type: none"> <li>□ Balochistan Education Management Information System (BEMIS) established in 1990. Its data is used by decision makers and planners. They used to collect data from 11895 schools annually.</li> </ul>	<ul style="list-style-type: none"> <li>□ They were required to collect data twice a year in the month of April and October but they have only been collecting in the month of October because of financial constraints.</li> <li>□ Education department was interested to update the BEMIS and put the data online to make it available for public.</li> </ul>
Lack of Capacity Building	Finance Department	<ul style="list-style-type: none"> <li>□ New account model, aided programme, offered one week training that was not sufficient.</li> <li>□ The budget preparing process starts in the month of March and takes four months to its announcement.</li> </ul>	<ul style="list-style-type: none"> <li>□ Government policy must be made available on website.</li> <li>□ There is contradiction in the figures given in files and net that must be the same.</li> <li>□ After announcement the policy changed within next 15 days which shows inefficiency of preparing budget process.</li> </ul>
Lack of IT Skills	Educational Institutions	<ul style="list-style-type: none"> <li>□ In Balochistan, about 1500 computers were distributed in 95 schools, approximately 10 – 15 computers in each lab of every school.</li> <li>□ The computers became obsolete and useless as it remained unused by the students during the last four years.</li> </ul>	<ul style="list-style-type: none"> <li>□ It is observed that headmasters of most of the schools kept the computers locked in the lab because of non-availability of computer instructor and fear that students will wrongly handle the computers and spoil them. The purpose of provision of computers was not achieved.</li> <li>□ Letters being sent to remote areas which take more than a week to reach its destination.</li> </ul>
Terrorism	Higher Educational Institutions	<ul style="list-style-type: none"> <li>□ In the University 'X', data computer lab was established with the expenditure of about Rupees 25 million provided by the Higher Education Commission.</li> </ul>	<ul style="list-style-type: none"> <li>□ That was shown to be burnt out within few months without any apparent evidence of fire. If this incident is proved to be true, one may conclude that some segment of society may not welcome advancements in IT</li> </ul>

			literacy or have some vested interest in such negative actions
Lack of IT Skills	IT Institute Quetta	About 450 government officials got IT training, out of them only 250 was able to pass the exam from the IT Institute of Quetta.	<input type="checkbox"/> Deficiency of IT skilled manpower <input type="checkbox"/> No interest to learn IT skills.
Lack of Resources	Rural Development Authority	The local training program is not functioning properly because of limited promotion chances for training instructor, to some extent computers, networking and DSL connections may be provided.	<input type="checkbox"/> Facing financial constraints; the staff was never provided facility for foreign training to enhance their capability for use in the department, moreover, training equipment is not available to meet the requirement.
Lack of Capacity Building	District Quetta, capital of Balochistan	IT department furnished data based forms to the 9700 government employees to fill and return to the department for statistical analysis.	<input type="checkbox"/> Only 2000 employees responded to return the forms in a year which show unsatisfactory response.
Lack Of Coordination with other Districts	District Lasbela	<input type="checkbox"/> 10 IT centers exist to provide training to students. In addition for Tehsil High Schools, IT training labs have been established.	<input type="checkbox"/> The online exam software has been developed and being used successfully including development of IT vision 2010.

**Table 1 Summary of findings in Balochistan**

Source: PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS

**Lack of Finance:** The BEMIS – Balochistan Education Management Information System was built in 1990. BEMIS information is use by leaders and organizers. Typically, they were obliged to gather information twice a year in the month of April and October however they have been gathering in the month of October simply because of budgetary requirements. They used to gather information from 11895 schools every year. The Education division was keen on redesigning BEMIS and putting the information online to make it accessible for general society, yet was not able to do as such due to monetary limitations. A contributor supported system for another bookkeeping framework was not fruitful. The administration strategy must be made accessible on site, was not accessible; letters being sent to remote territories were taking over a week to achieve their destination; there was an inconsistency between the figures given in manual documents and the framework. The financial backing planning procedure begins in the month of March and takes four months, however was deferred because of the new framework.(Arfeen, 2014)

**Lack of Resources:** The Rural Development Authority is confronting money related imperatives; the staff were not given offices to abroad preparing to improve their ability for utilization in the division; the training for locals is not working appropriately on account of constrained advancement chances for preparing teacher, additionally, preparing hardware is not accessible; to meet the prerequisite, to some degree PCs, systems administration and DSL associations may be given.(Arfeen, 2014)

### 3.14. Advantages and disadvantages of e-government

It is a bitter fact that everything has its positives and negatives. On the one hand online services make our life better and bring transparency and flexibility to the services provided by the government and on the other hand it has some drawbacks. The following table identifies some of the advantages and disadvantages.

Advantages	Disadvantages
It is much cheaper for both government and public	Building and maintaining a new website can require a lot of money. It needs professionals and also some technical costs.
It is much quicker than traditional way of services where people have to wait in a queue and the workers can be either lazy or slow.	Implementing new security ways can cause problems for citizens to provide more information about them.
Websites provide better ways to manage the information compared to the traditional ways. Hypertexts allow us to provide access to complex sets of information in easier and user-friendly way.	It can cause some security dangers to the government. It can give a chance to hackers to hack the system and that can be tragic for the government and also for the citizens who will use these services
It is a new way of governance and it provides a new, additional point of contact. Only 20% of the whole population of the world has access to internet but it is increasing every year especially in developing countries.	One of the biggest drawback of these services in developing countries is that they are not under the reach of everyone as it is known that developing countries do not have a wide range of internet access to its citizens.

**Table 2 Advantages and disadvantages of e-government**

(Danieli, 2008)

## **4. Analytical part**

The analytical part is based on the case survey made by the author with over-seas South Asians and Pakistanis which are living currently in Pakistan. The Surveys were done with students of several South Asian countries and the questions were asked in a document form and all the questions were open questions. The survey was based on two parts, first part focused on user's experiences and services they used. The second part focused on government and departments of government. For Pakistanis living in Pakistan was conducted a slightly different survey as it had to focus on Pakistan and not on Pakistanis living abroad.

As a proposal for e-government services a website was designed. This website was not designed to solve all the e-services problems but it can be taken as a beginning of e-services portal in the province of Punjab.

### **4.1. Case study about South Asian countries**

The author tried to conduct a small case study which will include some of the South Asian countries and that would discuss the e-government services in those particular countries. The author had a chance to find some students from Nepal, India, Sri Lanka and Afghanistan. All these participants are students of Czech University of Life Sciences. It was easy to find these people as all of them are active students of this university. The case study had two parts. One part was more about their experience and knowledge about e-government. The second part contained more of technical stuff. All the participants were asked 12 question which were written on MS word document. The participants could give as long answer as they would like to and as short answer as they would like to. The participants were from the age of 23 to 28.



#### **4.1.1. Sri Lanka**

All the participants took a part in the questionnaire through email. Some of the participants had a clear idea about e-government and they were able to tell everything in detail but some of them just answer in one sentence or few words. Even though the answers were not so detailed, author was able to find the answers he was looking for.

As it was mentioned that all the participants are active students of Czech University of Life sciences therefore all of them are living abroad and the services they used more were about the emigration and passport stuff.

Participants from Sri Lanka mention services such as EDS (Electronic District Secretariat). When it was asked to tell more about this service the author found out that it was a service from where citizen gain access to Government to Citizen/Business Services.

When it was asked about their experience of using this services all the participants had a positive experience and the reason was that they could gain access to these services from any part of the country and that gives me opportunity to be updated.

When it was asked if they use any other services the answer was obvious, passport renewal service. This answer was given from almost every participant who took a part in this case study.

When it was asked about the drop-backs of the services the author found out that the users were not very satisfied with the response time of the service. Response time of online services is very important. These services should improve their response time to get even more positive reviews.

The author found out that these services were working successfully in Sri Lanka and the reason was simple, it gave them access to gain information they seek for. This is the main goal of e-government services to provide access to get information which is needed for them.

The author found out that the reliability and speed of these services could be improved but no participant complained about the slow speed. It was just said by the participants that it could be even better but even now it has good standard which is a positive thing.

When it was asked, in which form they use these services, the author found out that all of them were in web format. Having a service in web format is better than not having it but the author and the participants reached to the conclusion that it could be even better if

these services were available in application format as well as in web format. Nowadays people have smart phones and almost everything is available in application format. With a huge competition between android and iOS it could be a very successful to have these services as applications. Having these services in application would give users more freedom to use and all these services would be in their hands and they would be updated all the time. Participants suggested to the government to introduce these services in application format as well.

When it was asked to the participants how often they use these services the answer was not surprising. Participants used it 2-3 times in a year which is understandable. No-one would renew a passport multiple times in a year or look for some business news frequently. If these services, were available in application format that might increase the usage of these services.

When the reason of these services was asked the author found out that these services were made to ease the pressure from the daily work of the government.

In the end it was asked to the participants if they would like to recommend something to the ministry of Sri Lanka to improve these services or give them some another idea. The participants seemed to be direct about these and the answer was that the government should expand the availability of these services and above that people should be aware about these services. Participants said that government should make efforts to give awareness to people and especially for those who live in rural areas so all of them could take advantages of these services. It seems that Sri Lankan government is doing good in the field of e-government. People are satisfied with their efforts and have knowledge about those services. People suggested the government to make these services more effective, they should advertise them and make people aware how to use them so all of them would use these services and make this campaign successful. The other barrier Sri Lankan people might have would be internet access. For services which are given online to people, internet is the basic thing. People from the rural areas should have access to the internet same as people from urban areas. Overall it can be said that Sri Lankan e-government is going on the right track and will improve with time.

The other half of the case study was more technical and it focused on the government itself rather than users. It contained 4 questions which were just to get a basic idea of the particular country's government.

First question was if Sri Lanka has a national strategy (including an implementation plan) or any new initiatives since 2011 relating to e-government development? The answer was obvious that yes they have.

Second question was if Sri Lanka has instituted a national legal and regulatory framework or any updates since 2011 relating to e-government? The answers were received were positive, yes they have.

Then it was asked to the participants if they have a department of a ministry in Sri Lanka which focuses on e-government and the answers were yet again positive and the name of the department in Sri Lanka is called ICTA.

In the end the participants were asked if they have a Chief Information Officer (CIO), or a similar officer with a leadership role, to manage national cross-agency e-government programmes or projects. The answers were yes they have. It seems that Sri Lanka, has, a proper staff which deals with e-government.

#### **4.1.2. Nepal**

The same questions were asked to the Nepalese participants as well. The answers from Nepalese participants were interesting because Nepalese participated in this case study the most. Most of the participants were originally from Nepal therefore the answers were very interesting but not so different from each-other.

All the Nepalese students have had used some online services from the government. It is important to mention that all the Nepalese participants are active students of Czech University of Life Sciences.

When it was asked which services, do they use, the results were following. The online registration for application to the government offices, online banking, online registration of students in university, online citizenship forms, etc. From the answers the author assumed that Nepalese students are more focused on the banking and online forms filling services. As it was mentioned that all these participants live in abroad so they have to manage everything from the places they are right now. We all know how difficult these paper-works can be. It can be said that these services are very sensitive in sense of security because these services are related to online banking, citizenship forms and so on.

All the participants had a good experience with these services but they also mentioned that people are not aware of these services and the reason is the lack of access to internet or people who has access they cannot take advantage of these services properly as they are not well introduced to these services and also the literacy problems are being faced for the developers as well.

Other services the participants use are online voting system and online tax paying systems. It was said by the participants that these tax services are very easy and simple for people to use and it includes all kinds of taxes, everything can be paid from one place.

When it was asked to the participants what can be improved, it seemed that they had to say a lot about that and the answers we got were like, there should be appropriate training provided for developing computer skills for the government employees. Good education should be provided to the people so they know how to use these services through computers. Participants would like to see more development in this sector and they would like to see more effort made by the government for people to teach, it was suggested by some of the participants that government can improve skills of ordinary people by showing them videos on television about these services and show them how to use. It would be a useful idea if the government of Nepal would opt for it.

When it was asked about the success of these services the participants had mix view. Some of the participants said that it is very successful and some of them were more realistic and said that it is not so successful at the moment but it will be due its usefulness.

As the author mentioned up that these kinds of services have a risk of safety, it was proved by the participants as well. The participants were not so sure about the security of these services.

When it was asked, in which form they use these services, the participants had mix views. Some of them use these services in web format and some of them use it as an application and some of them use it in both formats. The most common applications are banking services and public service commission which has the name “lok sewa aayog”. These applications can be downloaded and installed for both android and iOS.

All the participants use these services quite often. Some of them use these services several times in a month.

The main reason for using these services is that it is easy to use and it does not take so much time. That is the benefit of e-government. It makes everything easier and stress-less.

In the end it was asked to the participants if they would like to recommend something to the government. The Nepalese participants had few ideas for the government which were to invest more in this field. Increase the speed of broad band internet so the people would use these services with more comfort. It was also suggested by some of the participants that the government should make a completely new department for e-government and train the employees so they would understand the need of public and they would keep in their mind the ease and simplicity of these services.

The second of the case study was the same for Nepalese participants as it was for other countries.

First question was if Nepal has a national strategy (including an implementation plan) or any new initiatives since 2011 relating to e-government development? The answer was obvious that yes they have.

Second question was if Nepal has instituted a national legal and regulatory framework or any updates since 2011 relating to e-government? The answers were received were positive, yes they have.

Then it was asked to the participants if they have a department of a ministry in Sri Lanka which focuses on e-government and the answers were yet again positive and the name of the department in Nepal is called Ministry of information and communication.

In the end the participants were asked if they have a Chief Information Officer (CIO), or a similar officer with a leadership role, to manage national cross-agency e-government programmes or projects. The answers were yes they have.

#### **4.1.3. Afghanistan**

The next country in the list was Afghanistan. The same questions were asked to the participants from Afghanistan. The author couldn't get a large number of participants from Afghanistan but number of participants who participated, were efficient to get the results and compare them with other countries.

All the participants have had used some online services from Afghanistan. When it was asked, which services they have used the answers were employment and public awareness services.

The participants from Afghanistan didn't seem to have a positive experience of using these services as they said that employment opportunities are not listed collectively. Each ministry or organization maintains and runs separate career portals. It is clear to notice that each organization which offers some jobs are not in the same website or same application. To find a job opportunity the users have to check the services one by one. They would like to see all the job opportunities in one place and chose. In the Czech Republic are website such as [www.jobs.cz](http://www.jobs.cz) or [www.prace.cz](http://www.prace.cz). The people of Afghanistan would like to have something similar.

When it was asked, which other services they would like to use the author found out a large number of services the people of Afghanistan would like to see and those services are following: Health, tax, pension, public safety, business. For any developed country these services are one of the key services which any government can offer to their citizens and there is no difference in the case of Afghani participants.

When it was asked, what could be improved the answer could be stated as following. The e-government project, could aggregate the public services under one roof and portal. As it was stated before that each organization has its own portal that could be improved and put in one portal to make it easier for the users.

The participants said that these services are not very successful in their country and the reason is the services are not quite successful as the technology behind is not very modern and updated. There is less contribution and attention to the improvement of these services.

The author found out that the services are not very reliable. Public awareness services are reliable, but employment services are yet to be trusted because of the underlying corruption within the departments. One of the main goals of e-government is also to control corruption and bring transparency to the government.

All these services are available only in web format and participants don't use them so often. It can be said that these services are used by the people one or twice in a month.

The reason for using these services can be stated as the service, are convenience, simple information retrieval and management, accessibility.

In the end it was asked if they would like to suggest something for the government of Afghanistan to improve e-governance and the answers were not different as one can think. There could be a special department for the implementation and management of e-government services which works closely with each other public/private organization. The government at once took the initiative to implement e-government, but did not follow the plan thoroughly.

It can be stated that the online services in Afghanistan are not very famous and very well developed. It is a fact that Afghanistan is a developing country but the government could put more effort to develop these services and facilitate the people.

The other half of the case study was about technical stuff and for Afghanistan the answers were quite different than other countries. The first question was if Afghanistan set a national strategy (including an implementation plan) or any new initiatives since 2011 relating to e-government development and the answer was not different than other countries. Yes, Afghanistan has a national strategy to e-government development.

The second question was if Afghanistan has instituted a national legal and regulatory framework or any updates since 2011 relating to e-government and the answer was No it hasn't. This is where the problem lies. If we look at the other countries it can be seen that all the countries have updated their services more or less but in the case of Afghanistan, nothing was done.

Next question was if Afghanistan has any appropriate authority (department or ministry) in charge of e-government development programmes and the answer was

positive, yes, they have and the name of the department/ministry is Ministry of Communication & Information Technology.

The author had a chance to look at the website of this ministry and it can be said that the website was very simple and there was not so much useful stuff for the users but yet 63% of visitors rated it as an excellent website.

In the end it was asked if Afghanistan has have a Chief Information Officer (CIO), or a similar officer with a leadership role, to manage national cross-agency e-government programmes/projects and the answer was negative. It is another drop-back of online services in Afghanistan. If a developing country do not have an officer to address these problems and improve the services it cannot move forward. The government of Afghanistan should consider these things in future and hire a person with skills who would solve these problems and provide more online services especially for over-seas Afghanis.

#### **4.1.4. India**

The same questions were asked to the Indian participants and the answers were not different than other South Asian countries. As it was said that all the participants are living abroad therefor the services they use are very similar to the ones which are used by the other participants.

All the Indian participants had used some online services. The services they used the most are online banking, voting, services related to emigration and passport services.

Most of the participants used passport services and services provided by the universities for online admission and forms filling.

When it was asked what could be improved all the participants said the security and transparency of the services could be improved. The online services are not used by them very often but one or twice in a week. The other services they would like to use are health, transport and employment services by the government.

The services are successful in India but can be more successful if the right guidance is provided to users and people would have access to internet.



In the end it was asked if they would suggest anything to their government and the answer was not different than other participants from other countries. The security can be improved and the government should invest more in e-government.

For the second half of the research all the answers were positive and it can be stated that the government of India is moving on the right way. It should not be forgotten that India is a developing country therefore it has barriers and access to internet and people are not very familiar to these services. The government have launched new projects for people and those are under development.

#### **4.2. Comparison of online services with Pakistan**

After getting all the information needed, and discussing with the over-seas South Asians a comparison can be done easily. It seems that all the South Asian countries have similar services and same barriers.

It can be stated that all the countries are developing their services for the public and investing more or less money for these services. India is the country which seems to make more effort towards this field. The IT sector is very developed in this region and there are talented people with creative ideas. One thing should not be forgotten that the system in this region is not comparable with system in Europe and America. It will take time for these countries to educate people and provide the skills to public. One of the main setbacks is the access to internet. With the technology it is not hard to provide access to internet and provide online services to the people.

If one would compare these services with Pakistan it could be stated that services in Pakistan are very basic. The services provided in Pakistan are related to voting, education and tracking passport. There are more services running but those services are only for a certain group of people. One of the services is for pilgrims who want to go to Mekkah and the service is called Hajj. That service is provided to people to register and first few thousand people will be selected. It works on the system first-in-first-served. Recently it was found out that there was a big corruption in this system and people were gives visas not based on the rule they set but on the favouritism. This is one of the main negativity of these services and that can be said as one of the reasons why these services are not very

successful. The main aim of e-government is to provide services with ease and transparency but that's not the case in Pakistan. The other major service was introduced by the government during the 2013 election.

People who had ID could write their ID number and send a sms to a given number and they were told if their vote had been registered or not and in which constituency they should vote. There was another similar service which was to tell the nearest polling station.

Government of Pakistan should improve in this field and provide more services such as health services, tax services, bills services. Health services are lacking in all South Asian countries. There is no service for patients or retired people. People who are old and living alone should be provided these services. Pension services are also very important.

In the end as conclusion of this comparison can be stated that Pakistan is not very different than other countries in this region. All the countries have to make more efforts toward this and invest more. The good governance is done by these services and that is the main job of any government to provide services and fulfil the needs of people.

Field	Selected South Asian countries	Pakistan
Present Services	Online banking, Voting, Universities, Passports, Jobs	Online banking, Voting, Hajj, Election, Passport tracking, NIC tracking
Services which are desired	Pension, Health, Tax, Jobs finding portals	Pension, Health, Sports, Tax, Billing.
Barriers	Bad infrastructure, lack of skills, insufficient finances, access to internet	Bad infrastructure, lack of interest, lack of skilled people, lack of education, not enough investment
Recommendations	More investment, education, access to internet, advertisements on the TV or mass-media	Real interest, completion of plans, education, higher internet speed and awareness

### **4.3. Survey with Pakistanis living in Pakistan**

This survey was conducted through social media websites such as Facebook and some other social websites. As it was mentioned that the author of this thesis is not living currently in Pakistan therefore it couldn't be done personally. The questions were sent to the participants either by email or as a regular message from the particular site.

All the participants who were emailed or messaged didn't answer the questions. More than 100 people were asked and only few of them agreed to participate. The exact number of participants was 37.

The findings from the survey were not too different from the one above done by over-seas Pakistanis. All the participants had access to the internet. Not all of them were regular users but majority of the participants used internet daily. Majority of the participants had used some e-services from the government of Pakistan but there were few participants who never used any of the services and the reason was that they couldn't find an appropriate e-service for them. All the participants said that government should provide more services. The services which were used by the participants were services for education, State Bank of Pakistan, voting services, passport services, etc.

The barriers which were found were not so surprising and the barriers told by the participants were like lack of education and awareness, Insufficient Electricity, Political Issues, Reliability and Security, High Internet Cost, Low Bandwidth although few of the respondents did not mention any barrier.

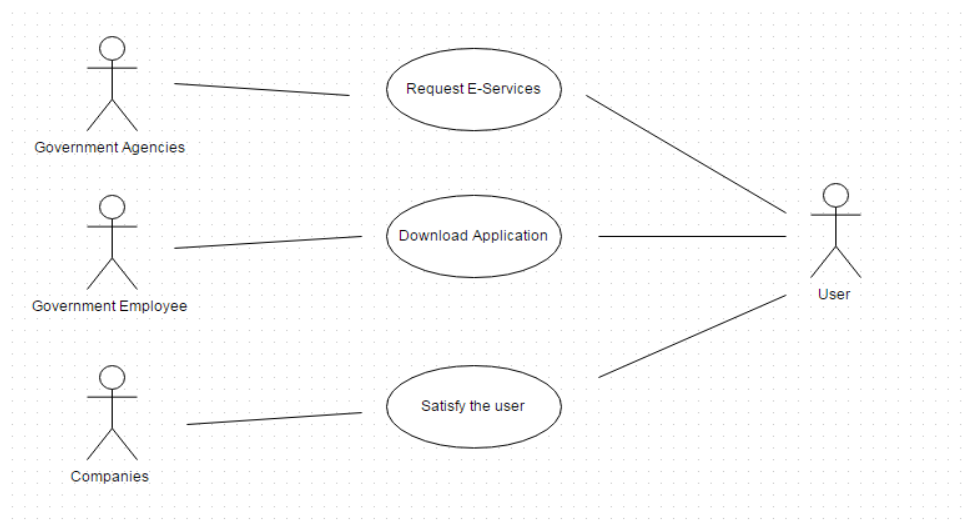
These barriers are not only in Pakistan but similar or the same barriers were mentioned by other South Asian countries as well. It can be stated that the whole region has similar barriers.

## Summary of findings

Area	Findings <sup>N=37</sup>
Internet usage	All the participants had experience of internet. Over 90% of the participants use internet daily. The rest of the participants use it alternatively.
Barriers	education and awareness, Insufficient Electricity, Political Issues, Reliability and Security, High Internet Cost, Low Bandwidth.
E-service essence	Each participant know the importance of e-services and would like to have more services.
E-service usage	The government is providing several services but all the participants would like to have more services as it would save their time and money.

Table 3: Summary of findings with Pakistanis currently living in Pakistan

A use case diagram was designed to understand the relationship between the government and the public through this designed website.



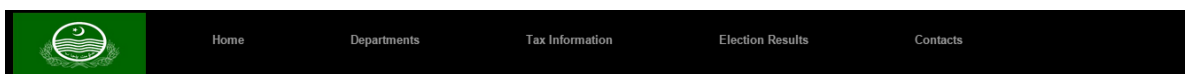
#### 4.4. Proposed design for online services in Punjab

A simple website was created as a design for e-government website in the province of Punjab. Punjab is the most populated province of Pakistan therefore it has huge needs of online services to take away the load from the workers and provide easy and cheap services to the public. There are few services running in Punjab but those are not often updated or not so reliable. These services should be working 24 hours and a small number of staff should be available to help people. Because of big number of people living in this province, people have difficulties to go to big cities and do everything personally. Internet is available in 3G and 4G in Pakistan from last year. Government should realise these needs and give access to people to fulfil their needs by using online services.

Here is the design proposed by the author. Creating a website was not the main goal of this thesis therefore it shouldn't be considered as a professional website.

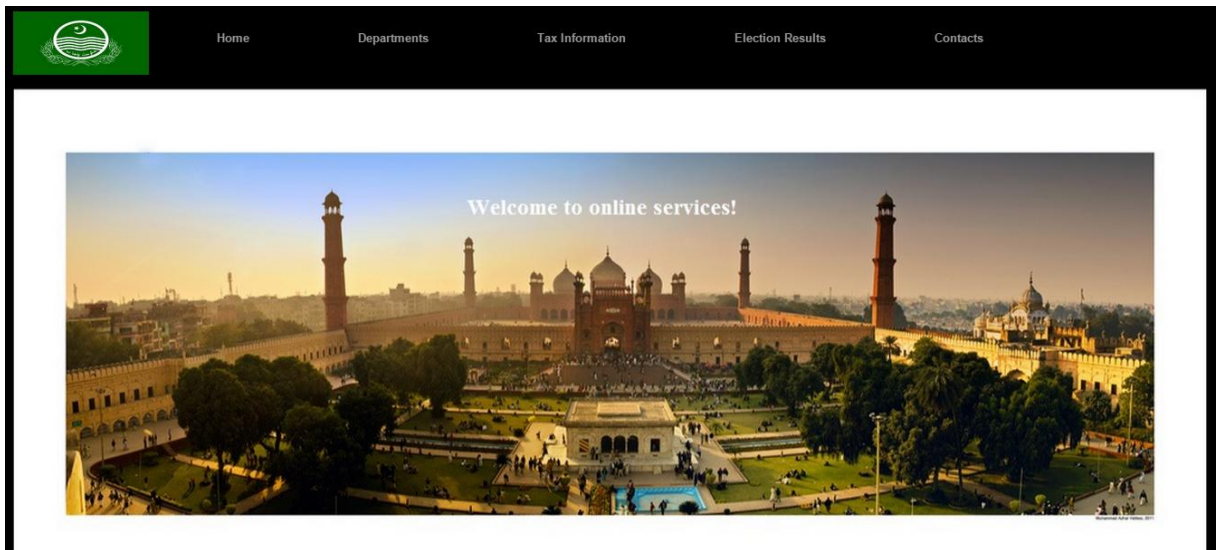
##### Menu

The menu of this website is very simple but it contains all the things which are needed for the public. It has the logo of Punjab government of the left. Beside the logo there is home button. By clicking on the home button the user will get back to the top of the page. The home page will be shown under the heading 4.4.2. The next button is called department, under this button can be found some of the departments working in Punjab government. As it was mentioned that it is just a design so all the departments were not included but can be included later. The next button is called tax information and it has the basic information of Taxes. It just gives an overview of taxation but it can be attached with SQL and a tax calculator can be provided to the citizens to calculate their taxes based on their property or income. The next button is election results and that was included in the web to provide verified results by the government about the winners of elections. The last and the most important button is called contacts. All the most important contacts are provided to people in that section.



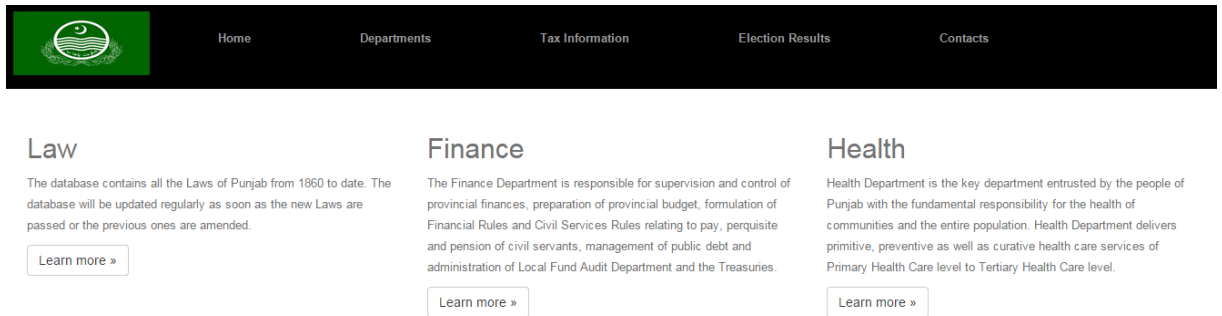
## Home

If a user clicks on the button Home, this is what will appear. The home page includes a picture of Badshahi Mosque. It is situated in the capital city of Punjab called Lahore. It is a historical place and majority of Punjabis are Muslims so it would be nice to have some spiritual place on the top of the page.



## Departments

Next button on the menu tab is departments. It has some of the basic departments run by the government of Punjab. These departments were chosen based on the usability. Departments like law, finance and health are one of the most important departments for any state.



The screenshot shows a website interface with a dark navigation bar at the top. On the left of the navigation bar is a green square containing a white logo of a crescent moon and star above a globe. To the right of the logo are five menu items: Home, Departments, Tax Information, Election Results, and Contacts. Below the navigation bar, the page is divided into three columns. The first column is titled 'Law' and contains the text: 'The database contains all the Laws of Punjab from 1860 to date. The database will be updated regularly as soon as the new Laws are passed or the previous ones are amended.' Below this text is a button labeled 'Learn more »'. The second column is titled 'Finance' and contains the text: 'The Finance Department is responsible for supervision and control of provincial finances, preparation of provincial budget, formulation of Financial Rules and Civil Services Rules relating to pay, perquisite and pension of civil servants, management of public debt and administration of Local Fund Audit Department and the Treasuries.' Below this text is a button labeled 'Learn more »'. The third column is titled 'Health' and contains the text: 'Health Department is the key department entrusted by the people of Punjab with the fundamental responsibility for the health of communities and the entire population. Health Department delivers primitive, preventive as well as curative health care services of Primary Health Care level to Tertiary Health Care level.' Below this text is a button labeled 'Learn more »'.

The main aim of these departments is to provide the information for citizens. The changes which will take place in these departments should be published in this section. There is a button under each department called “Learn more“, by clicking on that users can read further information about these departments. If the government will create some application for these departments they can be given under these buttons.

## Tax Information

This section is made to help citizens to know about the changes made in taxes by the provincial government Pakistani provinces can implement their own tax laws and internal law. As it is just a design so only basic information is provided which is about the property tax and income tax. In the future there can be an option to pay online taxes.

### Property tax

Property taxes are levied on both commercial and residential buildings and land by the provincial governments of Pakistan. The Excise & Taxation (E&T) Departments of the provincial governments release Valuation Tables every year, which provide certain figures based on different measures for each province, and sometimes for different cities within a province. These tables use more or less the same formulae in every province to calculate something called annual value (more on this later) but in different ways, and later on we'll provide you with links to explore each province's formulae in detail.



### Income tax

The Federal levy, tax, on income (Income Tax) is governed by the Income Tax Ordinance, 2001 and Income Tax Rules, 2002. It is an annual charge on income. This includes taxable income, income subject to separate charge and income subject to final tax of a person for a tax year, and also includes global income of the resident person, even if it has already been taxed outside of Pakistan.

It can be connected with the database and taxes would be paid by card and receipts would be provided to the users by an email.



## Election results

This section is made for the election results. All the elections either general or local body's election results can be shown here. It will give the users a verified answer from the government authorities and the result will be the final. This section can be very helpful for the public and the reason is the general election of 2013. The counting for votes was still going on and the winners were announced without any verification and that had a huge impact on the overall results as the presiding officers stopped counting or counted just for formality and the party which was winning got most of the remaining voted in boxes. If this section will be introduced to the presiding officers and no interference will be done by the government authorities then it has a big chance to bring transparency to the election. It will require skills and internet access for all the polling stations but that can be provided easily.



## Elections results!

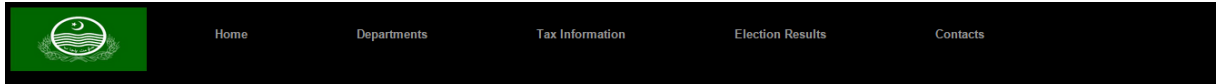
Please wait until we get all the results from all the polling stations  
Be patient please!

It can help both the government and public as well. The public will know the final results here and the government will be able to bring transparency in the lection which is needed right now in Pakistan.

The following picture shows the graphical view of the website designed for the government of Punjab.





## Contacts

In this section some of the basic contacts are provided to people. There are four different options which can be used respectively for public support, general inquiries, complaints and for feedback of public. Feedback of the users is very important for improving these services. It will identify the positive and negative things which can help government for improvement.



## ReaCh Out to uS For AweSoMe SerViceS

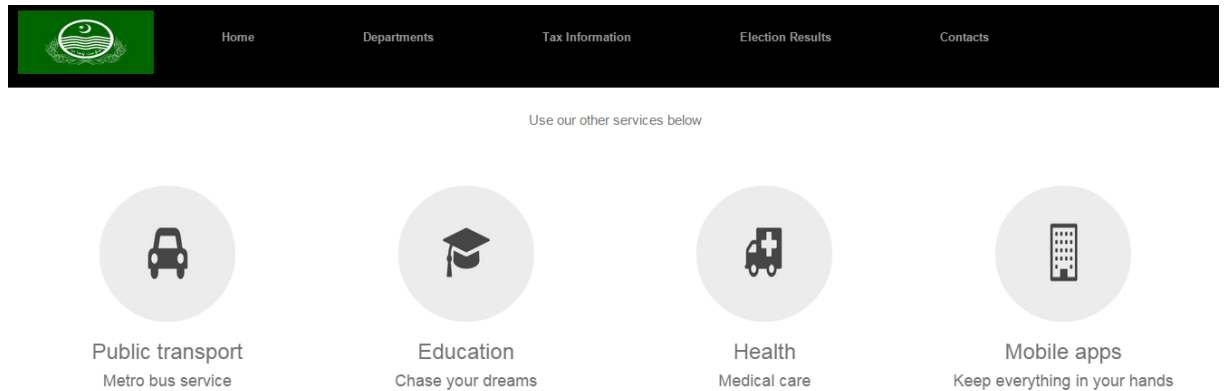
Be a part of the our family and get in touch now

 <b>Call Us</b> Public support: +92 775 75575 575 Inquiries: +92 775 PRESS	 <b>Email Us</b> General Inquiries <a href="mailto:contact@contact.com">contact@contact.com</a>	 <b>Email Us</b> Complains <a href="mailto:complaints@contact.com">complaints@contact.com</a>	 <b>Support Us</b> <a href="#">Give us your feedback</a>
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## Other services

Some additional services can be provided as well which were included after all the research. It was said from all the South Asian participants as well as from Pakistani participants that services for transport, education and health are needed more than services for pilgrims and elections.

There is a metro bus service in the capital city of Punjab and this service can be useful for people to know the route and timing. In developed countries especially in European countries it is a daily thing to do for people to check the timing for buses or trains but nothing has been done in this sector in Pakistan and it is highly needed as there are no fixed time-tables. The other service for universities would help students to choose a university which is in Punjab or in a wider collection of universities would be provided from whole Pakistan. The other service would show the list of hospitals and services that can be provided in particular hospital or clinic. The last service is for downloading available service in application form to mobile phones or tablets.



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## 5. Discussion

After studying about e-government in developed countries and in developing countries it becomes easy to discuss about this topic. Lots of literature had been provided on top and that makes it easy to understand what kind of barriers are being faces by the government of Pakistan. Having said that Pakistan is a developing country and it can be stated that e-government is not one of the priorities for the government. The current situation has a big impact on the government and it does not give a lot of freedom to the government to think about these services. Countries which are developed are not facing any kind of internal or external threats by any other country and their governments can focus on these services. Scandinavian countries are one of the best countries in the world in this field. The reason is simple, the governments are stable, people are satisfied and the country is not facing any kind of crisis. The government can focus on these services and make it better with time. The literacy rate in these countries is very high compared to Pakistan and also access to internet is higher than in Pakistan. The comparison with other South Asian countries showed that the problems which are being faced by the government of Pakistan are not only in one country but the whole region is facing those problems. Lack of skills and education makes it even worse. A lot more effort has to be done in this field. The present situation of online services in Pakistan is not good at all and that can be seen in the survey done by the United Nations or other survey which was done by the government of Pakistan in the province of Balochistan. It can be stated that people need to be educated and should have the necessary skills to use these services. The current services which are provided by the government of Punjab are very basic and they are not upgraded frequently. The design which was made by the author can be implemented and based on that it can be improved and a lot more services and applications can be provided to citizens.

The current services are very basic and they are not needed by everyone. The author of the thesis tried to identify the need of those services which should be included in those portals. Health services and security services must be provided to the citizens. Services like Hajj and voting are used once in a year or even less. Those services cannot be used by everyone. It cannot be stated that the government should come with services which whole Pakistan can use because a service like that would not provide anything. Importance of these services mentioned above cannot be denied but it is not what the citizen demand. Citizen demand a lot more services, sports services, health services, insurance, pension,

retirement, car, buying and selling, tax, bills, etc. All these services are needed. The author would go even further and try to suggest that the government should provide even online lawyers to the citizens. Law is one of the most important pillar of any society. People who are living far from big cities, people who cannot afford paying the buses, people who want to get an appointment, all should be provided on the same place.

It can be stated that there is a lot to do in this field. Pakistan with a population of 180 million cannot provide everything to its citizens personally. It must provide them online services. As it was said it is not about the letter “ e “ it is about the government and citizens have to rely on the government and wait until they decide to do something for their public.

## 6. Conclusion

It is not so difficult to conclude this thesis after having all the basic primary and secondary information about the e-government in Pakistan and in Punjab. It is easy to find that the government lack infrastructure and skills. The government doesn't invest proper amount of money in this field. The government has other priorities such as development which can be seen by eyes like bridges and roads and huge buildings. The government doesn't show any interest in online services and the reason can be said that the bureaucrats doesn't want the system to get better. They don't want to facilitate people as they want to be and as it is needed. They bureaucrats are one of the weakest/strongest in the case of any country but in developing countries it is not working so good..

The employees who work for the government are mostly corrupt therefore it gives them opportunities to steal money from simple people who come to get some services and cannot get them until they pay extra money. The government should have clear intentions in its mind and introduce more services. The government must invest more money in this field. The government must educate people and employees. In first half government should train the employees, even if the employees will be costly for the government, they should hire them and make them freedom to design these services. These services provide continues services and one of the keys for these services are transparency and reliability. If the user will know that this service can trick him the user will not trust that service. The user should be able to trust those services but that is one of the other reasons why people would hesitate in Pakistan to use these services. Transparency is the last thing the bureaucrats would think about. The IT experts who would like to work for the government should be given full freedom and the government should back those experts. If the government wants, everything is possible.

The government should discuss these issues with the ministry if IT and check the structure of some other countries and try to follow that. It wouldn't be a bad idea if they call some experts from abroad to give some lectures about the importance of online services and show them the ways how it can implemented successfully. Pakistan is in the beginning of these online services so some developed country's experts can guide the government from where to start and how to educate people. If the government would take it serious it would be possible because Pakistan has an enormous talent in IT and that

would not be so difficult to find some skilful people within the country or within the province of Punjab.

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## **8. Supplements**

**Here are the questions which were asked to the South Asian participants who are living currently in Czech Republic.**

1. Country
2. Have you even used any e-government services
3. Which services do you use the most?
4. What would you like to say about your experience?
5. Which other services would you like to use?
6. What can be improved?
7. How successful these services are in your country?
8. How reliable these services are?
9. In which form do you use them?
10. How often do you use them?
11. What are the reasons for using these services?
12. Would you like to recommend something to your country's e-government services?

The second part of the survey was based on the questions related to the government and the questions were following:

1. Has your country introduced national strategy or any new initiatives since 2011 relating to e-government development?
  
2. Has your country instituted a national legal and regulatory system or any updates since 2011 relating to e-government?
  
- 3a. Please identify the department or ministry in charge of e-government development programmes in your country.
  
- 3b. Does your country have a leadership role, to manage national cross-agency e-government programmes in your country?

Country

Here are some more images of the website which was designed for online services.

Home Departments Tax Information Election Results Contacts

**Business opportunities in Punjab**

**Housing/real-estate in Punjab**  
Citi Housing Faisalabad Punjab Pakistan, DHA Multan Punjab

**Industry in Punjab**  
The economy of Punjab, Pakistan is one that is largely based on

Home Departments Tax Information Election Results Contacts

**Business opportunities in Punjab**

Punjab Board of Investment & Trade (PBIT) is the trade and investment promotion agency in Punjab, Pakistan, working autonomously under Industries, commerce and investment department. It is a member of the Steering Committee and a Director for South Asia of the World Association of Investment Promotion Agencies (WAIPA).

[Learn more »](#)

**Housing/real-estate in Punjab**

Citi Housing Faisalabad Punjab Pakistan, DHA Multan Punjab Pakistan, LDA City Lahore Punjab Pakistan, DHA Gujranwala Punjab Pakistan, New Lahore City Lahore Punjab, SA Gardens Lahore Punjab Pakistan, Canal Cantt Villas Multan Punjab Pakistan, Al Rehman Garden Lahore Punjab Pakistan, Chenab Garden Housing Scheme Sialkot Punjab Pakistan, Canal View Housing Society Faisalabad Punjab Pakistan, Madni Avenue Housing Scheme Bahawalpur Punjab Pakistan.

[Learn more »](#)

**Industry in Punjab**

The economy of Punjab, Pakistan is one that is largely based on agriculture and industry. Punjab is the largest province of Pakistan in terms of population, and also has the largest and fastest growing economy in the country compared to other provinces and administrative units. Punjab's economy has quadrupled since 1972. Its share of Pakistan's GDP was 54.7% in 2000 and 59% as of 2010. It is especially dominant in the Service & Agriculture sectors of the Pakistan Economy. With its contribution ranging from 52.1% to 64.5% in the Service Sector and 56.1% to 61.5% in the Agriculture Sector. It is also major manpower contributor because it has largest pool of

## ANNOUNCEMENTS

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PAKISTANI SQUAD FOR CRICKET  
WORLD CUP.

NEW DEVELOPMENT PLANS.

SPRING FESTIVAL WILL BE HELD  
ON 14TH OF FEBRUARY IN MINAR-  
E-PAKISTAN.



What is happening in Punjab  
Submitted by Admin, 14/03/2014 - 8:30  
Here you can check all the events which will take place in Punjab.

Punjab is rich in culture and history. There are many attractions for the tourists and locals such as Lahore Zoo, Lahore fort, Minar-e-Pakistan, Badshahi Masjid, Hiran Minar, Museum, Play grounds, Gardens, Swimming pools.

Please wait until we get all the results from all the polling stations  
Be patient please!

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<http://somesite.com/>



**Education**  
Chase your dreams



**Health**  
Medical care



**Mobile apps**  
Keep everything in your hands