

Rafia Ashar

The Concept Of E-Governance: Classifications, Challenges & Remedies For Pakistan

ABSTRACT

The concept of electronic governance has a regime for their citizen at their door step is known as E-Governance. It is e-commerce equipment which means online presence of government services that not only make data system transparent but also save resources of the state as well. The tools and the procedures used in e-governance venture provide a roadmap for proficient distribution of services at the very door step of each individual. The increasing demand of e-governance and rapidly growing size of data, new-fangled technologies like open source software and network oriented services that makes information open from multiple electronic technologies by connecting it to an account also known as cloud computing need to be integrated. However, this article argues that e-governance has made the government function more effective and clearer as crystal to its citizens also plays vital role in the effective performance of institutions, thus, the need to understand as how this system works and what are the expectations of public that can make e-governance mechanism fruitful. The paper also will manifest ample list of e-governance projects currently running in Pakistan and provides an apparatus for refining e-governance system with the help of technologies as tools.

BACKGROUND

In contemporary scenario, the world is coming across change and revolutions where common things need to be vibrant. The growth in the importance of e-governance has been most conspicuous development of the international network shifts in the nineties, with the arrival of the World Wide Web (www) and till present is growing and developing with new technologies. E-governance is a modernized tool for a government that is under pressure of increasing its performance.ⁱ E-governance enables government institutions to provide better services to its constituent transactions such as filling taxes online, finding jobs, renewal of licenses and trading and etc, can be carried out online very quickly and efficiently.ⁱⁱ Achievement of government is based on credibility (The way it works), capability (Transparency in its functioning) and communication (information Communication to its public).

This all is done by institutions whose performance must be smart and efficient that can be done through e-governance. The concept of E-governance has a potential to rejuvenate the relationship government and public through harmonizing trust. The relationship of citizens and government can be transformed by e-governance quality services, accountable and transparent government growth and engaging people in public policy process.ⁱⁱⁱ Using the mechanism of e-governance plays significant role in the lost civic faith of an individual and endorses the nationhood in inhabitants. Today, there is big loophole between the public trusts and government in case study of Pakistan which has influenced the public trust and element of nationalism at large.

DEFINING E-GOVERNANCE

The term e-governance was materialized in nineties but the literature on information technology and government is evident date back in 1970s^{iv}. It is basically the use of internet by the administration of a state to deliver its services to its public and consumers. According to Nikita Yadav and V.B. Singh, there are four pillars of E-Governance connectivity, knowledge, data content

and capital^v and it is believed that **Connectivity** is essential to link the public to the government services which should be strong and effective via e-governance. **Knowledge** through the lens of IT is used by government to hire smart engineers to run e-governance and overcome expected faults in it professionally. The **Data Content** is about every kind of information, data, facts and figures related to government services to be cited on cyberspace on its database. Lastly, **Capital** can be based on public or private enterprise which takes capital used by state admin to run their responsibilities or convey it to that particular economic sector which is linked to its service.

The use of IT by government institutions can bring various fruitful ends to a Society, Industry, Health, Agriculture, Public empowerment and Government efficient performance. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth and cost reduction.^{vi} Darrell M. West articulates that in e- governance citizens get public service by their very own convenience not by waiting till government workplaces opens. To utilize societal resources and values the government needs to transform the services of its people into electronic process where decision makers utter y involve stakeholders to help them in planning and implementing of such process.

TYPES OF E-GOVERNANCE

The services of a state's e-governance can be of different type which may include entrepreneurs, public, administration and workforces. The four types of e-governance are;^{vii}

- Government to citizens (G2C),
- Government to employees (G2E),
- Government to government (G2G) and
- Government to businessmen (G2B).

Government to people linked services of e-governance denotes services which are shared by people. This kind of e-governance strengthens the linkage among government and its people. Public visit the required web link of services they need which includes online bill payments, online applications registration, online complaints submission, and land records data and other information. Government to government e-governance provides mutually shared services. A heavy base of information is required to be shared between agencies, departments and organizations of government like; police, finance and health departments etc, all governmental documents are exchanged between government to government institutions by e-governance. Government to entrepreneurs is a type that likes the public and private sector to transfer data and to online show taxes collection, transparent rejection and approval process, bills payment, penalty to non-payers, rules and data or any type of objections. Government to worker's type of e-governance enhances the transparency which is amid government and its workforce in which labor check and balance over the government and government over working class.

PURPOSE OF E-GOVERNANCE

Currently, the world is facing numerous issues not only political issues are hitting the global peace but also the problems regarding social, economy and environmental factors are magnificent. E-government is not only important for a single state to improve its performance but it is also necessary to end global problems as today's world is called global village and domestic harmony indirectly effects global peace. The more the nations adapt e-governance the more effective and transparent world would be. Thus, the purpose of e-governance is to advocate sustainable development goals and its 2030 outline. The main agenda is to end poverty, hunger and diseases not only from a country but worldwide. To endorse woman empowerment, gender equality and human rights practice is the ends to its goals. E-governance goes hand in hand with efforts to bridge digital divide to overcome discrimination and inequality issues.^{viii}

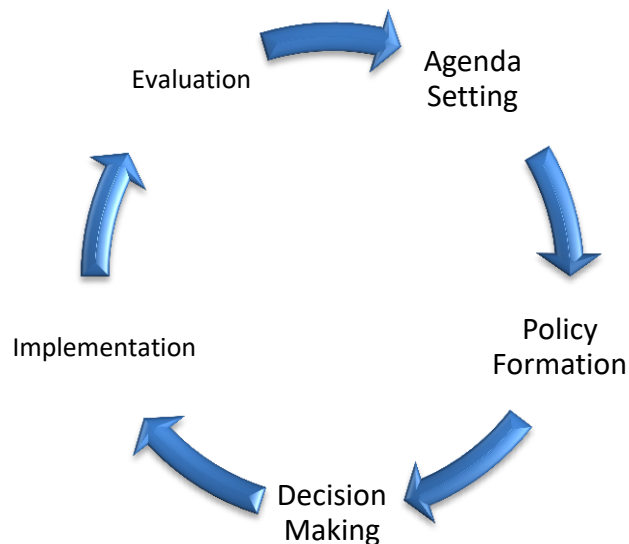
UTILITY AND OBJECTIVES OF E-GOVERNANCE

In the current arena, the race for growing advanced is getting faster and the area of e-governance is very comprehensive in it. E-Governance is applied by governments in nearly every single life fields. Whether it's urban or rural areas, its politics or mentorship, its private or public zones, its random native or a businessman, the E-Governance has embraced its importance everywhere. E-governance projects target a wide range of topics like Infrastructure development, bolstering legal atmosphere, develops governments, developing levels of policy making, increases transparency, trust literacy, education, global access, interoperation and sustainability, partnership between parties, cost structure incentives and managing records. E-Governance in urban areas provides services on transportation where time table of buses, booking or cancellation facility provision, availability of seats, regional conveyance improvements, overcrowding management, public friendly services, providing beginner licensees, renewals of licenses etc. are being done online. The online payment of bills and tax services have various utilities like; online transaction, payment of bill, taxes, equated monthly installments, university fees, vacancies information, market rates and nuptial services.

Municipality services carry tax assessments, billing and collection of houses, land & property records management, death certificates issuance, registration & attorneys of assets, site plans, problems in pension and their maintenance through online software. In e-governance, the roads and traffic management department focus on network of roads and bridges with their construction and maintenance, traffic management, mechanisms for accident and pollution control through computerized system. On the other hand, in rural areas e-governance can perform services from agriculture to local information level, from disaster management to land record management and from property registration to the revising of field survey maps through online computerization of data, issuing of birth/death certificate, water supply and sanitation are also scrutinized. In a nutshell, e-governance reciprocally helps in policy integration. It is based on a policy cycle of evaluation, agenda setting, policy formation, decision making and implementation.^{ix} E-governance can support policy integration at any state of policy cycle which is as follows.^x

E- GOVERNANCE PRACTICES IN PAKISTAN

E-governance has been employed in both developed and developing states while in developing states it is recognized as projecting government into 21st century. It was then that government of Pakistan took initiative on e-governing directorate under the department of information technology and published its 5 year plan on electronic government.^{xi} Pakistan took



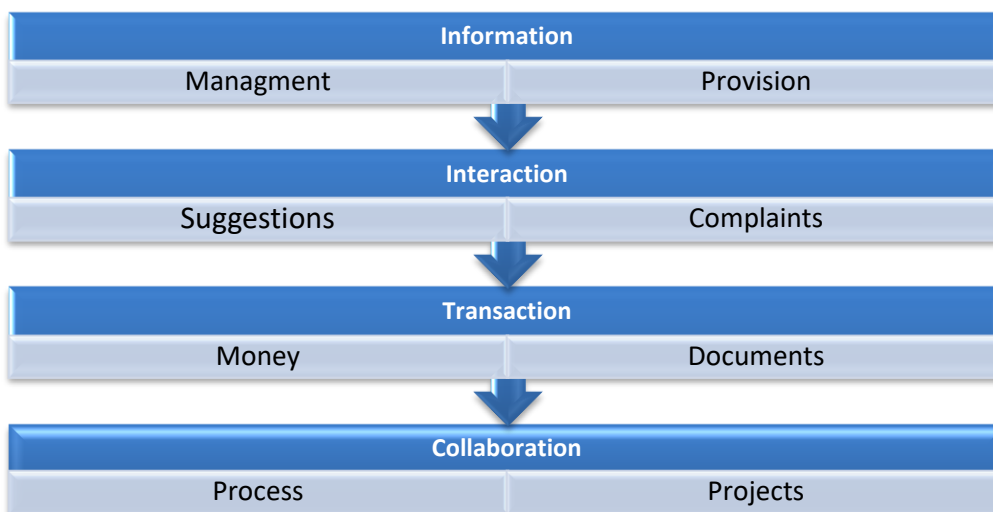
start from 2002 via the Electronic Government Directorate (EGD) under Ministry of Science to service societies growing effectiveness through ICT. Pakistan takes along a vision to harness the potential of IT as a key contributor to development of Pakistan.^{xii} This mission carries development of infrastructure, training of folks and groups, transformation of whole communal bloc, free stream of information and utilization of technology for the sake of virtuous and peaceful future of Pakistan.

In survey of United Nation 2016, Pakistan is ranked 159 among UN member states in E-Government Development Index (EGDI) in which weighted average used as benchmark to provide ranking of e-government development based on three dimensions Online Service Index (OSI), Telecommunication Infrastructure Index (TII) and inherent human capital (HCI).^{xiii} E-participation index demonstrates service delivery in Pakistan according to UN survey 2016 EPI, Pakistan is ranked 114 and e-participation is recorded 38.3% which is not very impressive. The importance of open data in e-governance cannot be denied to bring sustainability, in this spectrum Pakistan is among those Asian countries which has open data standard dataset in education, health, social welfare, environment, labor and government spending.

The argument is that e-governance has direct correlation to developing efficacy of institutions in developing countries but government services are expected to be adaptable socially and citizens of state must have ability to utilize the system and assertively use the software. Government services to be socially inclusive and an enormous challenge to a government as it implies direct access of computers and its software. Assistance by authority available to Public is of ultimate importance in Pakistan as they may not easily utilize the facility of putting data on computers online. E-governance is a good answer to the issue of “office closing” where in Pakistan customers on jobs are mostly in critical situations to pay their bills, renew their license and to submit registration forms, the online service will be available to entertain employees and the public conveniently.

PAKISTAN AND COMPONENTS OF E-GOVERNANCE

A state functions in a various trends; hence government’s main functions substantially are the same components e-governance carries. These main components are: firstly e-democracy in which electronic use is being done to enhance the citizens’ activities in decision making process of a state. Secondly, e-services which provide accommodations like information, services, programs and projects through the tools of internet. Thirdly, e-management that not only revises but works in the improvement information availability, government’s management and records arrangements through information technology (IT). In the fourth component the respective mechanism gives easy access in give and take of money regarding trade, shopping, paying bills and registration etc through internet called e-commerce.^{xiv} These e-services automatically provide administrative process for its citizens through software but one service at a time. It carries different phases in first phase information is managed



and being provisioned, then in second phase, online interactions are executed between administration and its user citizens. Thirdly, transaction phase comes in which NICs, Payments, Passports and document are being transacted online. It requires high degree of security and basic infra structure allowing for secure transactions.^{xv} In a fourth phase, collaborative arrangements are done with government in its tasks and procedures by citizens and businesses. This phase requires collaborative infrastructure which brings together suppliers, consumers and the government in a network with the object of increasing value creations.^{xvi}

CHALLENGES AND REMEDIES FOR PAKISTAN

The goal of government and e-governance is the same “to provide services to the state people” thus the success of both lies in the fact that how much citizens of a state are set at ease. E-governance gives many opportunities to improve the quality of service to citizen and government employees must perform their duties easily and effectively.^{xvii} Government in placing emphasis on services supply, public centered tools and services improvement faces numerous challenges.

In developing countries budget is the biggest challenge, allocation of available budget which is mostly limited in developing states must be managed and given importance, e governance benefits a state like Pakistan to allocate its limited resources online and save time, money, electricity that is spent on manual procedures. Resources lag is a huge constraint as e-governance equipment and gadgets are costly. Smart budget allocation by Pakistan finance ministry in the wake of e-governance expansion is compulsory. Pakistan has many challenges regarding e-governance based on technical and institutional level. Technical challenges are compatibility of technology, Privacy of data from wrong use, Security and performance of multi service linkages between parties. Institutional Challenges contains Lack information sharing, Lack of professionals, increase in population, no command on local Languages. The presence of Economic Challenges is ultimate where the technology and institutions are involved for better performance here state also needs to overcome its economic constraints in this particular mechanism. The challenges involved are; cost of the whole process, maintenance of its objective and portability. The government institutions gives services to diverse based individuals who carry different culture, needs, beliefs, attitudes and educational levels.^{xviii}

Big share in success achievement of e-governance mechanism lies in its accurate continuous process, transparent management and avant-garde technology. Two technologies are essential to be linked with e governance for better performance these are Cloud Computing and Open source software. The Open Source Software (OSS) is an operating system which is available in source code and binary form, it permits users to perform free use of it, revise and redistribute the OSS all free of cost. Two entities active and passive perform actively in open source process are where Active develops code and passive are defined by those users who reciprocate their feedback freely e-governance later used by e-governance to entertain and deliver its services to the people.

The examples of OSS are rare but found in European countries As buying and upgrading registered software is quiet costly but that it is harmless to entrust information in the public domain to open source. Using open source would enable Pakistan to encourage its own human resource as software professionals to give software support which could be at a lower cost than other packaged software being sold globally. The Pakistani Government must go for the open source strategy in its e-governance projects, via Department of Information Technology to make policies in this respect .the authority should make its services available in technology which shall be cost-effective. OSS will benefit government by providing improved ownership and local self-

sufficiency, enlarged flexibility to address localization issues and data management facility. Many open source software projects have been extremely successful measured by market share.^{xix}

The cloud computing is part of world revolution in Internet domain that is shifting lives private sector and government sector where Cloud computing has become one of the popular technique in the IT zone through which e-governance is implemented. It benefits e-governance users to take right to use to fully featured applications, it is self-sufficient service and it gives network access. Santa Barbara, CA-Eucalyptus Systems, creators of the most widely deployed on premise cloud computing platform, discovered that open source Eucalyptus Infrastructure-as a-Service (IaaS) is the cornerstone of cloud project which is delivering the power of current IT.^{xx}

Cloud computing in E-Governance have different uses Clouds provide services Infrastructure as a service (IaaS), Platform as a service, (PaaS) and Software as a service (SaaS) through which, when pressure increases its performance is not affected. In current arena of fast technology implementing e-governance with clouds is a new method. It's in grows e-governance efficiently and implementation through;



Every bit of e-governance if performed accurately but without efficient and reliable online transaction is a complete failure. It is a base of e-governance thus it not only facilitates individuals at their door steps but also save money that is being spent on making files and printings. E-governance is a “voluntary channel” in the sense that uploading accurate and transparent data by public is important for officials to get answers for their efforts, to overcome areas where they could not deliver services and to know either the system they are running is working properly or not. Other challenge for government is “access to required unlimited information”, not only access but handling such information is another tough task to maintain. Pakistan needs high committee of professionals and advanced gadgets to carry this job of handling such challenge. Privacy and security of sensitive data either of government or customer both is important in this era of terrorism.

To ensure security and privacy different institutions and agencies need to collaborate with Pakistan e-governance main body to avoid any mishaps. Financial Transaction comes under very sensitive area due to cybercrimes speedy increase. Gaining trust will be an ultimate challenge for the system e-governance need to come up with adequate protection schemes, media workshops and seminars to gain the trust of citizens. Integration among different state institutions is essential so that security and service comes along to gain trust of an individual. Office work tradition is embedded in Pakistani culture from decades it would hard to scrap off it too quick hence file

tradition is needed to be swapped by online software system to make government more effective. This would hard and gradual phenomenon but it is possible only through enlightenment given to old and new employees.

Literacy needs to be diminished if e-governance is required to be successful. Pakistan adult literacy rate According to Education Secretary stood at 59.3% compared to 62.8% reflected in the Economic Survey 2022-23. To understand the techniques, structure and usage of e-governance tools like its software is not enough ever thing have to get right from the very basics level. Each child of this country has to have education and skills polishing. E-governance procedure highly necessitates skill full professionals and it cannot be done through few trainings or seminars, a proper education system is essential to deliver proficient state structure.

Training of old and new staff to get their skills updated on e-government services application are required otherwise there will be requirement of hiring additional staff to perform tasks.^{xxi} Pakistani leadership will require putting respective trainings part of hiring process to handle this challenge. The psychological challenge that Pakistan faces is the “fear’ of losing jobs where there is already big question mark on jobs market for the youth and other citizens. This culture may not easily absorb the enlargement of e-governance apparatus as jobs like clerks, file managers and IT staff (beginner’s level) may feel insecurity. The fixing is required, government have necessity to build a strategy that would erase the fear out of public’s psyche.

In Pakistan mostly old computer systems are being used and people do not prefer to spend capital on new releases but technically these old computers either need to be discarded or updated. Therefore both processes are costly and need professionals. E-governance development and success rate is approximated by percentage of a state internet usage. According to global digital insights 2023, there were 87.35 million internet users in Pakistan in January 2023. Pakistan's internet penetration rate stood at 36.7% of the total population at the start of 2023. This analysis indicates that internet users in Pakistan increased by 4.4 million (+5.4 percent) between 2022 and 2023. Pakistani government still needs to develop and popularize the apparatus of e governance so that public get aware of the services and prefer using e- methods rather than office ones. Less technology access prevents citizens to consume advantage for themselves from ICT and E-governance. Government need to provide general access of internet to its citizens for successful e-governance process. UN considers that lack of access to technology, poverty and inequality prevents people from fully taking advantage of e-governance and ICT.^{xxii}

Institutional coordination makes good secured connectivity between state institutions. This is because e-government marks institutional coordination between agencies technically easy, minimize the coordination cost of working across agency boundaries, and enables better communication and sharing of information, data, operations and procedures.^{xxiii} However in Pakistan, this will require a huge paradigm shift as it needs management transformation etc. To make these shifts possible there is immense need of investing in cross sectoral capabilities, robust infrastructures, transformational leadership, and e-government supported cross-agency coordination mechanisms.^{xxiv}

In the factor where policy integration can help positively in national statistics organizations there it also needs interconnectivity which comes forth with large data sampling, enormous data share, and financial shared information. The more system is integrated with e-governance and policy making the less governance issues will be seen. In Pakistan this interconnectivity level is at ease there is necessity to make open data policies, data capacities in collection and analysis to strengthen national statistical institutions. If this happens it will bring great benefits for Pakistan in handling natural tragedies and disasters, receiving support of people with government at all levels, securitization of data and information.

The “European Commission Office of Harmonization of the Internal Market” is successful examples in emerging as integrated yet federated featured systems from which developing countries can take learn. Open data itself is not a challenge but how to improvise appropriately its areas like privacy, legal framework, cyber security, rules, and management is a challenge. The remedy for this challenge is to bring and raise awareness in societies to understand how this open data service can empower and assist people with new IT tools. This would advantage Pakistan government to play accurate and constructive role in development of national and international peace progress. Publishing open data online not only ensures transparency of national governments but also parliaments and judiciary to get sustainable development goals.^{xxv}

Availability of service, awareness, lack of infrastructure and insufficient electricity, less transparency and in the end to measure the level of e-governance progress the satisfaction of its citizens is vital. Administration needs to know how much e-governance mechanism is in progress. Accurate measurement is a challenge for the authority but it is highly important to be evaluated to analyze the loopholes present in the system’s progress (if any). The staff will require designing such methods that precisely monitor and measures the satisfaction level of public through digital surveys, online feedbacks and public representative’s interviews.

REMEDIES AND REQUIREMENTS OF AN E-CITIZEN

Pakistan before going deep in e-governance system needs to understand the demands and requirement of its people to allocate its e- resources on mandatory areas .For that it is needed to consider the examples of other states. The Dutch ministry of interior puts forth charter which enlists,^{xxvi}

The citizen not only need different services to follow its needs but also requires different



sources or channels to interact with administration through internet, phone, email, online applications, websites, letter, call centers and guidelines. Now Pakistani authority needs to make it sure that website contains every single bit of information, instructions and contact number.

A resident needs a continuous information series, without any impediment by organizational divisions and differences. E-governance empowers unified government body with complete Domestic Database of public services giving access to national, provincial and local governments via providing digital maps, call centers and guidance to competent agencies to user.

Pakistan's e government will require to surveillance the queries services, associated organizations and availability of international web guidelines (WCAG).

In an "overview of rights and duties" each and every citizen is obligated under the laws of a country but they first need to be well known to those rules and regulations. They must know their responsibilities to offer their country. In Pakistan due the unawareness of responsibilities and laws many problems occur. Each citizen is left with no option but opt self-biased individual choices rather than choices for the whole community. E-governance gives services by providing each citizen their very own personal e-files and secure digital safe with letting each individual well known to their responsibilities and laws to be abided. Pakistan with its e-governance administration will require to evaluate either information is given systematically or not and do call center give their whole range of services or not?

Only changing paper files bureaucracy into digital one is not enough, personating information and its accessibility is the main problem. Citizens need full text of different information, laws and regulations and available online but it must be available on each individual privacy terms. Information provided by government must be trustworthy, non-changeable and accurate.^{xxvii}

The responsibility of e-government here is to overview the system that how citizens shall subscribe to a personalized information service and to revise individual own personal data. The citizens of a state require convenient services from e-government and it have to provide easy and handy procedure to its people in filling forms and registering themselves. The system must not require registration again and again but there must also have open options for updating the information. The authority must check the web forms available to file applications and are choices supported by decision making software? Is information available not asked for again and instead pre filled on the forms?

The sixth point is comprehensive procedure where a citizen needs to know how government and its procedure work. This can be done through tracing and tracking for instance, online shopping, shipment; buying tickets etc. This will bring transparency to the system and will upgrade the trust and satisfaction of a citizen. In Pakistan this will additionally end the risk of corruption, Irregularities and bribery. Pakistan will need to come up with a vibrant mission statement, with database of legitimate online decisions, with described procedures and with available option of tracking & tracing.

Afterwards a citizen highly requires e-government to be reliable when it comes to secure individual's identity and personal documents i.e. digital voting, digital archiving, digital signature, securing critical information, avoidance of hacking and spam issues. Hence the government will make sure privacy statement to state the preclusion of data abuse, electronic payments to be conceivable and the possible practice of digital signature.

A citizen requires an easy access to file complaints and suggestions. This will improve the performance of organizations to overcome in its mistakes. For example digital complaints and suggestions writings, however, this is not only convenient to the citizens but this service also enables government to collect large sample of data to quantitatively analyze the problems and find accurate effective solutions to problems. Thus e-governance needs to be that effective that it clearly states the possibility to file complaints electronically.

In the "Accountability and Benchmarking" a citizen needs to be able to compare, check and measure government outcome where on the same side Government actively supplies benchmark information about its performance. This service would help citizens to get quality in education, health and commercial sector. Horizontal checking is also part of it in which citizen can check if an organization or company have required permits or not? Hence to pursue the positive results of

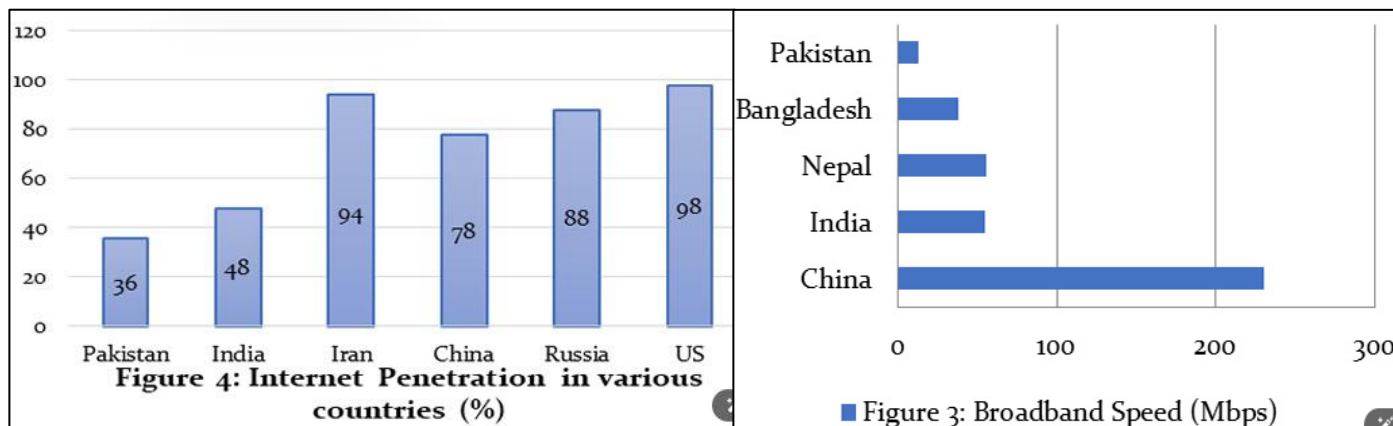
this service, administration have duty to check the online availability of organization's performance indicators, written policy plans plus annual reports.

Last but not least, the involvement and Empowerment is demand by citizens which allows a resident to take part in decision-making to endorse own wellbeing. E-Government empowers and gives participation platforms. E-participation is growing worldwide done via open data. Pakistan marked by UN as lower middle income federation needs to engage its people in development concerns. Lower middle income is not an impediment in better performance the challenge is how to involve people to take part in the system. However the level of public participation in decision making cycle will demonstrate the success rate of e-participation but for that leadership needs to put forth clear vision, unfolded policy making processes, digital literacy and the most important policy will.

While summing up, the contours of delivery service, Electronic voting, Chatting and blogging via internet is like a stage to empower citizens and abridge people and government distance. Demands and requirements of a society are mostly based on its culture and traditions. Government of a particular state requires understanding and analyzing the needs and wants of her citizens on large scale to make the efforts of e-governance guaranteed successful. The last challenge is Pakistan should be ready and be prepared for the occurrence of new challenges expected with adoption of ICT. Taking digital technology as a simple tool becomes increasingly problematic as "once new technologies are introduced to solve old problems, the problems themselves change" and this leads to the next challenge.^{xxviii}

CONCLUSION

To improve the quality of government services to provide good standard of living to every individual electronic services and information technology must be encompassed in all strands of government agencies and its institutions. Every ministry, agency, public and private organs carry websites and online services which means Pakistan is adjacent to its milestone that impartially need little more modification to change its system from paper files to online data. There are many



reasons that make cloud and open source technology much useful in E-Governance as these will overcome technical, institutional and economic constraints. Greater level of online services plays absolute role in a country's revenues. The more easy online services government provides the faster transactions will be done which results into better income level. Thus priority is access and availability of broadband and internet connection which still remains to be a question mark. In broadband speed and internet penetration, Pakistan stands at 13 Mbps and 36%, respectively, the lowest in the region, as shown in the graphs.

The broad adaption of e-governance spectrum will not only strengthen socio-political field but will set huge progress in socio economic division. These progressions will adjacently develop knowledge and information platforms country wide. The experiences of countries like American and New Zealand way of services provides valuable lessons for Pakistan. The positive and correct way to practice information and communication technology (ICT) is essential to fulfill the dream of every government service done in seconds. Embracing e-governance not only aligns Pakistan with global best practices but also helps in leveraging technology for socio-economic development. By fostering this culture of innovation, Pakistan can transform its governance landscape that leads to improved citizen satisfaction and a more equitable society.

References:

ⁱMcLean and Tawfik, *The Role of Information and Communication Technology in the Modernization of E-Government*, 2003.

ⁱⁱHaroon Shahzad and Waqas Younas Sandhu, "E-Government Services in Pakistan" 2007.

ⁱⁱⁱIbid.

^{iv}Kenneth L. Kraemer, J. N. Danziger, and J. L. King, "Local Government and Information Technology in the United States," *Local Government and Information Technology*, OECD Informatics Studies 12 (1978).

^vNikita Yadav and V. B. Singh, "E-Governance: Past, Present and Future in India," Arxiv Preprint Arxiv, 2013.

^{vi}Subhash Bhatnagar, Arsala Deane, and others, "Building Blocks of E-Government: Lessons from Developing Countries" (The World Bank, 2004).

^{vii}K. W. Kevin, "The E-Government Development, IT Strategies, and Portals of the Hong Kong SAR Government," *International Journal of Cases on Electronic Commerce (IJCEC)* 3, no. 2 (2007).

^{viii}"UN E-Government Survey 2016" (United Nations Department of Economic and Social Affairs, 2016).

^{ix}United Nations Environment Programme UNEP, "Integrated Policymaking for Sustainable Development: A Reference Manual." (ISBN 978-92-807-2923-8., 2009).

^xIbid.

^{xi}Government of Pakistan, "E-Government Strategy and 5-Year Plan for the Federal Government" (Electronic Government Directorate Ministry of IT, 2005).

^{xii}"National Information Technology Board, NITB," Retrieved from www.e-government.gov.pk.

^{xiii}"E-Government in Support of Sustainable Development."

^{xiv}Shahzad and Sandhu, "E-Government Services in Pakistan."

^{xv}E. Global, "Government Readiness Report 2004: Towards Access for Opportunity," 2004.

^{xvi}Ibid.

^{xvii}Shahzad and Sandhu, "E-Government Services in Pakistan."

^{xviii}Stephen T. Kent, Lynette I. Millett, and others, *Who Goes There? Authentication through the Lens of Privacy* (National Academies Press, 2003).

^{xix}Yadav and Singh, "E-Governance: Past, Present and Future in India."

^{xx}Deepak Kumar Mohapatra, "INDIA'S POTENTIAL IN 'E-GOVERNANCE,'" *International Journal of Industrial Electronics and Electrical Engineering* (2015).

^{xxi}Shahzad and Sandhu, "E-Government Services in Pakistan."

^{xxii}Ibid.

^{xxiii}Jane E. Fountain, *Implementing Cross-Agency Collaboration: A Guide for Federal Managers* with Dr. Jane Fountain, 2013.

^{xxiv} Nagy K. Hanna, *Transforming Government and Building the Information Society: Challenges and Opportunities for the Developing World* (Springer Science & Business Media, 2010).

^{xxv} “E-Government in Support of Sustainable Development.”

^{xxvi} Burger, “E-Citizen Charter Version 2.1” (Dutch Implementation Organization for ICT and Government, 2005).

^{xxvii} *Ibid.*

^{xxviii} Jonathan Bach, David Stark, and United Nations Research Institute for Social Development, “Technology and Transformation: Facilitating Knowledge Networks in Eastern Europe,” 2003.