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A SURVEY ON EXISTING FRAMEWORK FOR E-GOVERNANCE SYSTEM IN INDIA USING ICT INFRASTRUCTURE

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Abstract

There are many countries involve in the field of e-Governance through the ICT (Information and Communication Technology) which is play important role in the world of internet and mobile. e-Governance is basically the application of ICT to provide government services to citizens through internet. The effective model of e-Governance can change the scenario of the information accessing power from the internet and mobile which is needed to empower the user of government department or citizen. This paper represents the effective architecture framework of e-Governance for India which includes the Center, all States and respective District and Gram Panchayat through the ICT infrastructure. This paper also discuss about the central architecture for the Indian government which control all government department of whole states of the India. The main objective of this paper is to create or implement the framework for e-Governance that is beneficial or cost effective for the Indian government. Through this model all government organization and agencies will interact effectively and conveniently share the data and information.

Index Terms: *e-Governance, ICT (Information and Communication Technology) infrastructure, Framework for e-Governance using ICT infrastructure*

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1. INTRODUCTION

e-Governance is use the Information and Communication Technology with extreme and efficient service delivery that more likely citizen empowerment make effective government. e-Governance is the effective use of Information & Communication Technology (ICT) to improve the system of governance and thus provide better services to the Citizens[7]. In this paper we describe a model of e-Governance that declare boundaries of central to all state level.

Transparency of information and government processes, accountability of government employees and openness are the key factors in providing good governance to the citizen of India[8].The purpose is use the application of ICT infrastructure and provide the services between architectural model of the e-Governance and provide the central connectivity to the different State department of the Indian government. Use of ICT in the Government facilitates an efficient, speedy and transparent process for disseminating information to the public and other agencies. Objective of the proposed model is faster and reliable information exchange between the department and

make the better communication among the all department. Proposed model is use to integrate all government department and use of the different variety of the data sources in the architectural model of the e-Governance. The aim is to provide flexible communication between Center and State with cost effective way. The research paper is about the ICT infrastructure of India and trying to integrate the different department of the Indian government in a single architectural framework[1].

2. E-GOVERNANCE

e-Governance is the implementation of better service delivery model of government initiative. To make a better infrastructure for e-Governance is required the computing facility with e-Authentication for security system and tools, better communication network infrastructure. Government need to take the action and put the important resource within the better infrastructure. There are different organization which gives the fund to make the better e-Governance projects like World Bank, ADB(Asian Development Bank), and UN(United Nations).

The Indian Government announces the National e-Governance Plan (NeGP) in May 2006 which include 27 Mission Mode Projects and 4 projects in the field of Health, Education, PDS and posts had been introduced in 2011 so the total 31 Mission Mode Projects (MMPs) are currently running in the National e-Governance Plan. This 31 Mission Mode Projects are further classified as Central MMPs, State MMPs, and Integrated MMPs.
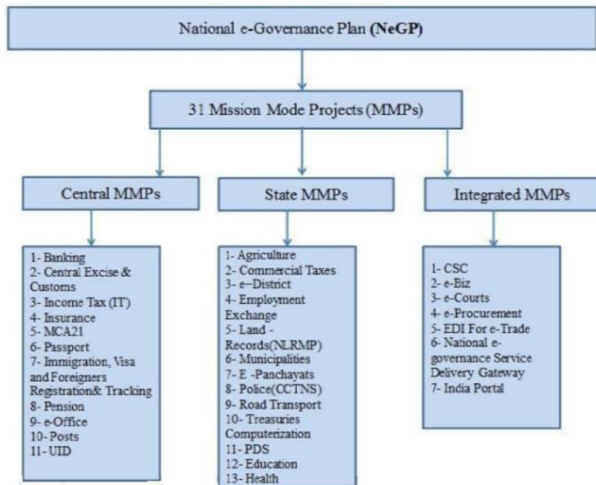

Fig-1 Mission Mode Projects under National e-Governance Plan in India

There are eleven Central Mission Mode Projects, thirteen State Mission Mode Projects and seven Integrated Mission Mode Projects in the national e-Governance Plan. There are different online services under the National e-Governance Plan which is include field of Banking service, Income Tax, Insurance, Passport service, e-Office, UID (Unique Identification) project, Agriculture service, e-District, Employment exchange, Road transport, Education,Health, e-Courts and National e-Governance Service Delivery Gateway[1].

The objective of the National e-Governance Plan is to make all Government services accessible ensuring efficiency, transparency and reliability, at the place, throughout the life, at Affordable cost to the common person [10]. The core infrastructure of the e-Governance initiative of National e-Governance Plan (NeGP) is State Data Center (SDC). State Data Center aim to provide efficient service delivery of G2G (Government to Government), G2C (Government to Consumer), G2B (Government to Business) services. These service delivery supports through the core connectivity infrastructure like State Wide Area Network (SWAN) and Common Service Center (CSC). State Data Center perform the function of information portal with Central Repository of the State. The emergence of Information and Communication Technology (ICT) has provided means for faster and better communication, retrieval of data and utilization of information to its users [2].

3. ICT INFRASTRUCTURE

Information and Communication Technology (ICT) infrastructure provide access to the information through telecommunication. Information and Communication Technology is similar as the Information Technology but it main concern is communication technology. In late 1990s, there was increase in the use of Information and Communication Technologies by government and private sectors. Information and Communication Technology have the greater capability for communication through the internet or mobile network. The initiatives of government agencies and departments to use ICT tools and applications, Internet and mobile devices to support good governance, strengthen existing relationships and build new partnerships within civil society, are known as e-government initiatives [4].

The main objective of ICT infrastructure is provide connectivity to all 250,000 Panchayats and provide the facility to accessing the G2C, G2B, G2G services. ICT infrastructure facilitate the flow of information at Central level, State level, District level, Block level and Panchayat levels. ICT is establishing a platform that provides service delivery of Mission Mode Projects (MMPs) under the National e-Governance Plan (NeGP). There are four important networks which establish under the ICT infrastructure which are given below:

- National Knowledge Network (NKN)
- State Wide Area Network (SWAN)
- National Informatics Center Network (NICNET)
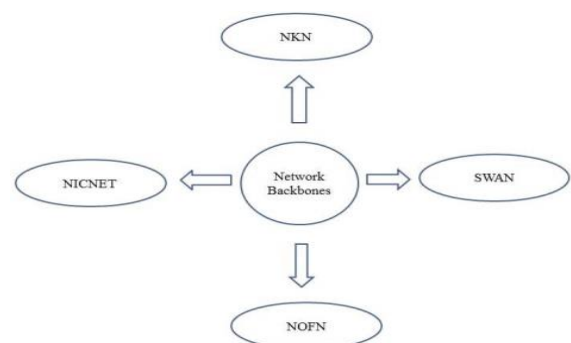- National Optical Fiber Network (NOFN)

Fig-2 Information Communication Technology Infrastructure Network Backbones

3.1 National Knowledge Network (NKN)

The National Knowledge Network (NKN) is designed as a Smart Ultra High Bandwidth network that seamlessly interconnects the leading Scientific and Technological institutions which are pursuing world-class research and development. NKN is a project which is aim to establishing a high-speed and robust internet connectivity for knowledge and Information sharing in India. NKN was approved by the cabinet of

Indian government in March 2010 with outlay of 5990 crores by government of India. 96 institutes have been connected to NKN [3].

3.2 State Wide Area Network (SWAN)

The Government had approved the scheme State Wide Area Network (SWAN) in March 2005 at a total outlay of 3334 crore. Under this SWAN project technical and financial assistance are provided to the states for establishing connection between all State up to the Block level via the District Headquarters with a minimum bandwidth capacity of 2 Mbps. SWAN is envisaged as the network for providing data, voice and video communications throughout states. Feature of SWAN is one PoP at each State or District or Block Headquarter. Each PoP has Configurable Aggregation Equipment to enable connectivity.

3.3 National Informatics Center Network (NICNET)

National Informatics Center Network (NICNET) is providing network backbone and support e-Governance for Central Government and State Governments and District Headquarter. NIC was established in March 1976 by the Government of India. NICNET is play a pivotal role in steering e-Governance applications at National, State and District levels. The main objective of NICNET is to establish a communication network at Nation level, State and District. Almost all Indian government websites are developed and managed by NIC.

3.4 National Optical Fibre Network (NOFN)

National Optical Fibre Network (NOFN) is approved in October 2011which is use to establish connectivity in all State, District Headquarter and up to the Block level and Gram Panchayat level. Main objective of NOFN is to connect 2,50,000 Gram Panchayats through Optical Fiber Cable (OFC). Through this network internet connectivity is provided to the all Gram Panchyats of India. The service providers like Telecom Service Providers (TSPs) and Internet Service Providers (ISPs) provide various services in rural areas.

4. PROPOSED MODEL
4.1 Framework for e-Governance

The Framework for e-Governance is the interactive model which integrate the Center, State, Block headquarter and all Gram Panchayat of the India. The proposed model is use the ICT infrastructure to make a better service delivery of information between Center and State level. In propose infrastructure central commission office is coordinate the all State level commission office and Block level office is coordinated by State level commission office and all Gram Panchayat is coordinated by Block level office. By this methodology the communication between the

Center and State will be flexible and cost effective and provide the better connectivity for all department of Indian government.

The aim of this framework is to make all department centralized in one organized framework. The security purpose for this framework is to use the proper e-Authentication approach. This framework include the National e-Governance Plan for 31 Mission Mode Projects and proper e-Authentication approach. The main objective of this framework is to communicate the all Gram Panchayat which is located in rural areas, those connected to State and Central commission office, because the National Optical Fiber Network aim to connect more than thousand Gram Panchayat through Optical Fiber Cable.
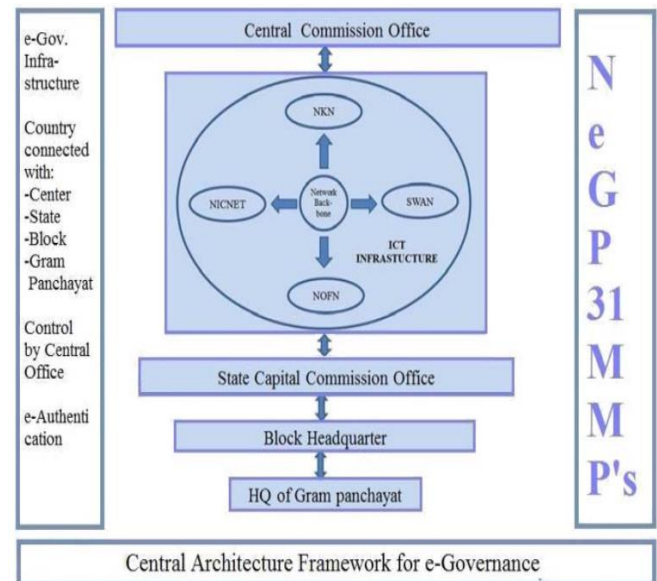

Fig-3 Framework for e-Governance using ICT infrastructure

4.2 Layout for Framework of e-Governance

Central Commission Office control all the states of the country and it is connected to the State and further Block and up to District Commission Office and Gram Panchayat. All these are connected through the ICT infrastructure and all Gram Panchayat's are connected with the fiber optics of National Optical Fiber Network with the aim of more than thousands of Gram Panchayat connect with the Block head quarter and District commission office. This framework for e-Governance system cover city as well as rural area, so it is easy to connect the user across the country with this framework. SWAN provides the connectivity with minimum capacity of 2 Mbps to District Commission Office.

5. CONCLUSION

e-Governance play a key role in current and future development. It can offer improvements to the efficiency and effectiveness of governance. Information and Communication Technology(ICT) is
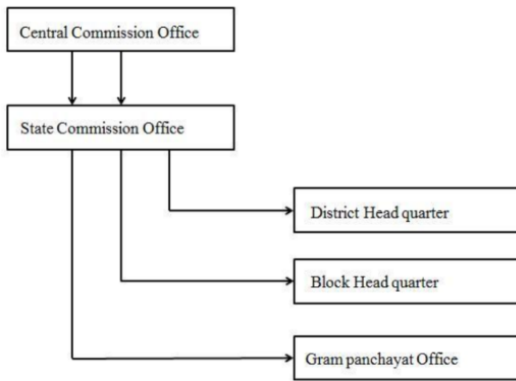
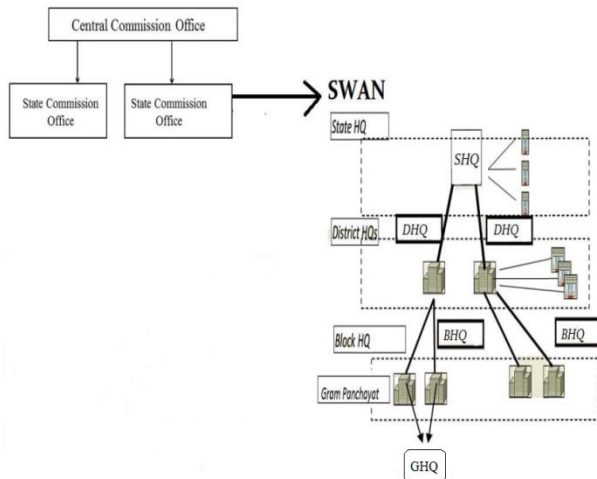**Fig-4 Layout for Framework for e-Governance**

Fig-5 Technical Architecture for e-Governance

the medium that transmit information and knowledge to individual to widen their choices for Economic and social empowerment.

The analysis of the framework for e-Governance integrate the National e-Governance plan with ICT infrastructure and e-Authentication process. This framework makes the helpful coordination between Center office to State and up to District, Block or Gram Panchayat with cost effective way. All department of India communicate with single framework with effective manner and reduce the communication cost.

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REFERENCES

[1]. Manish Kumar, Rahul Bhatt, Kunwar Singh Vaisla, "Central Architecture framework for E-Governance in India using ICT Infrastructure", International Conference

Advances in Computing and Communication Engineering (ICACCE), 2015. Available: http://ieeexplore.ieee.org/document/7306774

[2]. Dr. Pardeep Mittal, AmandeepKaur, "E-Governance–A challenge for India", International JournaL of Advanced Research in Computer Engineering & Technology, ISSN: 2278-1323, Volume 2, Issue 3, PP 1196-1199,March 2013.

[3]. Puneet Kumar, Prateek Bharti, "Prospects of e-Governance in India", International Journal of Engineering and Innovative Technology, ISSN: 2277-3754, Volume 2, Issue 3, September 2012.

[4]. Jaspreet Kaur, Dr. Vijay Singh Rathore, "Significance of e E-Governance and Implementation Challenges in Developing Countries With Reference To India", International Journal of Computers & Distributed Systems, Volume 1, Issue 2, August, 2012.[Online],Available:cirword.org/journals/index.php/ijdcs/article/downlosd/IJCDS4/pdf

[5]. Heng Wang, Jinchang Hou, "Main Contributions of e-Governance", International Conference on Computer Design and Applications (ICCDA), 2010. Available: http://ieeexplore.ieee.org/document/5541196

[6]. A. V. Poulose, "E-Governance and Infrastructure : Looking Ahead", RITES Journal, Jan, 2010, [Online], Available;http://www.rites.com/ritesjournal-2010/PDF/Poulose.pdf

[7]. Dr. Sanjay Kumar Dwivedi and Ajay Kumar Bharti, "e-Governance in India- Problems and Acceptability", Journal of Theoretical and Applied Information Technology, Vol. 17, [Online]. Available: http://jatit.org/volumes/researchpapers/vol17No1/5vol17No.pdf

[8]. Bhudeb Chakravarti, VasudevaVerma, "An Enterprise Architecture Framework for Building Service Oriented e-Governance Portal", TENCON 2008 - 2008 IEEE Region 10 Conference, Hyderabad, India,19-21 Nov. 2008, PP 1-6,2008, IEEE. Available: http://ieeexplore.ieee.org/document/4766563

[9]. Narasimha Murthy D., Prasanna Kumar R.V., "Software Architectural Design Model For e-Governance System", Conference on Convergent Technologies for the Asia Pacific Region, 15-17 Oct. 2003 PP 183-187 2003, IEEE. Available:http://ieeexplore.ieee.org/document/1273310

[10].Geetika, Neeraj Pandey, "National e-Governance Plan Revisited: Achievements and Road Ahead", Computer Society of India. PP 86-94, [Online] Available: http://wwww.csi-sigegov.org/1/9_409.pdf