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A NOTE ON E-GOVERNANCE SYSTEM IN INDIA

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Abstract
This is a research paper based on the most emerging trend in the Indian e-world today: the phenomenon of possibility of E-Governance, with digital democracy being a radical and an indispensable benefit out of it. Starting from the evolution, the minutes of needs for the generation of this concept, up until the most diffused prospective of this giant technology, there has been a touch on every detail of the concept of E-Governance, including the Political, Economic, Social, Technical and Legal aspects.

Model infrastructures of simple E-Governance and digital voting process is also provided for making further room for improvements. Statistics play a key role for establishing any research's foundation. In this research paper, all the statistics, including the pivotal statistics of internet penetration with respect to population are precise, till the date on which it was accessed. Hence, all ratios that are inferred as a result of this calculation are more or less indicative of the present scenario. Apart from that, all the benefits and challenges to E-Governance are also discussed and E-Governance mechanism of some famous and successful e-governance organisations of India is mentioned. This helps in visualization of the current established position of this giant technology in India.

Introduction

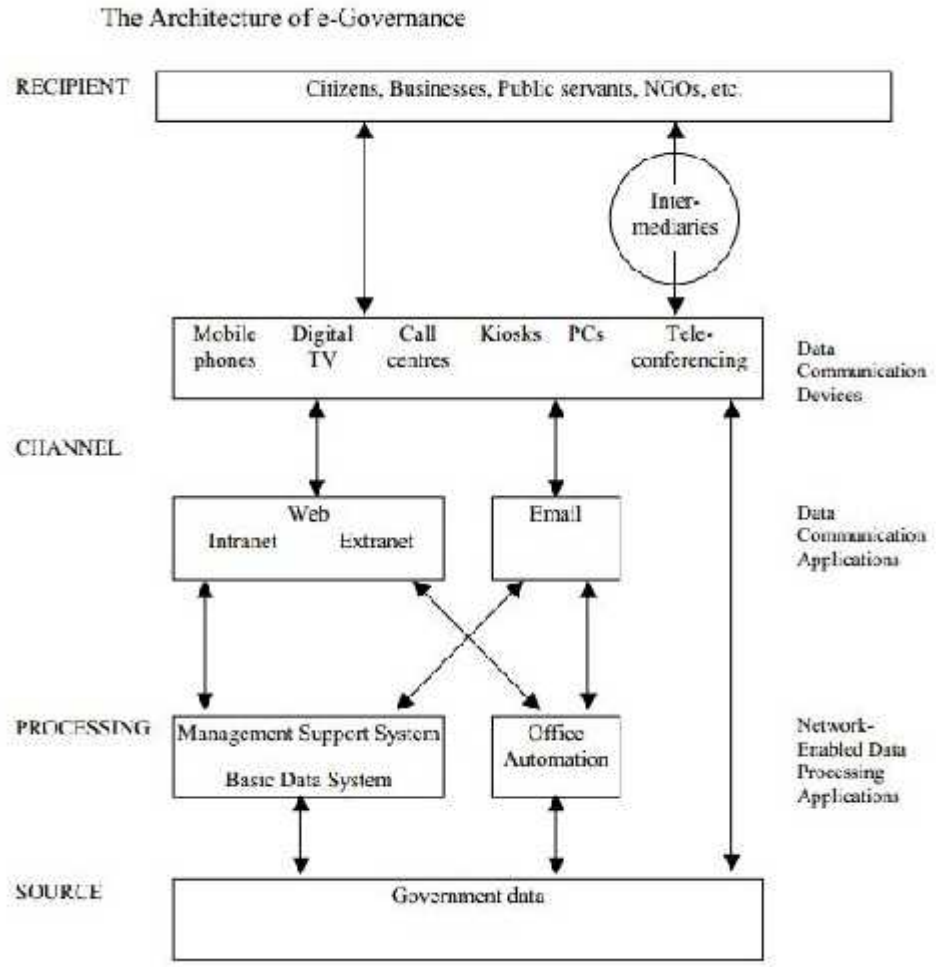
In order to be declared as a state, every country needs to have the following parameters fulfilled: Population, Territory, sovereignty and **Government**. Any government primarily exists for serving the needs of its citizens and to facilitate the smooth running of the country as a whole. It does the same, sometimes by making the laws, sometimes through executing and enforcing them and sometimes through adjudicating against the non-performance of the execution. Hence, one can say that the government of any given country has a lot of duties to perform. This performance requires staff, knowledge, resources and most importantly, time: a lot of time. For instance, a simple delay in passport processing could be a question of destruction of career of an individual on one hand, and on the other hand, the continuing delay in justice delivery system might be so late that the victim might have spared his whole life, devoid of justice.

Seeing all these circumstances, a rising need emerges in the mind of every citizen of our democratic republic to not only fasten the governance process at an extraordinary rate, but also to smoothen, clarify and account every such detail with transparency as these are the only decisions that prevail around the life of an individual, either by making it or by breaking it. For this reason, the Government of India has started the National E-Governance Plan (NeGP) in the year 2006 to facilitate and speed up this process for the benefit of every Indian. With over **1374 services offered**[1], the NeGP is the most comprehensive e-governance service provider that one would ever come across the advantages.

Better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits are : less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.

[1]*Services, National E-Governance Plan, https://www.negp.gov.in/service/finalservices.php?st=-2:29:36:2:3:4:30:5:31:32:33:6:7:8:9:10:11:12:13:34:14:15:16:17:18:19:20:35:21:22:23:24:25:27:26:28 (Accessed on 04 March 2014).*

A typical ICT design for E-Governance is as follows:



Typical ICT Infrastructure[2]

In this illustrative model, the Government data is the source and the citizens, businesses, public servants and NGOs are the recipients. The main task of the ICT is to flow the information from the source to the recipient. For achieving this, it requires networking and data communication applications.

The flow can be explained in the following steps:

1. Within the Government organisation, data is generated.
2. Then it is channelized into its respective departments, like, if the generated Government policy is about agriculture department, then the data is transmitted to the agriculture server, or else if it is regarding mining or information technology, it is accordingly transmitted to the respective servers. This transmission takes place in the 'Processing' state of the design illustrated. The Government agency has the sufficient technical knowhow in the form of Management Information System[3] or the Intranet[4], all being the components of ICT.

[2]*Sameer Sachdeva, White Paper on E-Governance Strategy in India, 26, http://indiaegov.org/knowledgeexchg/egov_strategy.pdf (Accessed on 12 February 2014).*

[3]*A system in an organisation consisting of hardware, software, data, people and procedures which helps in smooth flow of information into and out of the organisation.*

[4]*"Intranet is the generic term for a collection of private computer networks within an organization. An intranet uses network technologies as a tool to facilitate communication between people or work groups to improve the data sharing capability and overall knowledge base of an organization's employees.", Bradley Mitchell, About.com, http://compnetworking.about.com/cs/intranets/g/bldef_intranet.htm (Accessed on 12 February 2014).*

3. After the automated processing is finished, Government commences the transmission of the information generated through various electronic forms like E-Mails, notifications, website updates through the internet.
4. This information is received by the recipients through various mediums like Laptops, Mobile Phones, Digital TVs, Teleconferences and various servers.

Presence of ICT at both the senders' and recipients' end is a must. Without it, even step once can't be commenced.

Now that the we have explored the mechanism of flow of information from senders to recipients, the next thing that we need to know is that who are the target recipients of the Government, how is information transmitted to them through internet and how much percentage of the people of the world actually utilize internet properly, for facilitating E-Governance at their receiving end.

The Target Recipients of the Government

The target recipients are those people to whom the Government sends its relevance E-Governance information. The targets are primarily business agencies, Government Departments, constituents, citizens, employees and NGOs.

Each target is sent its particular information through the ICT. The classification and types of information sent is as follows:

G2C – Government to Citizen

The G2C interaction is a pretty visible online interaction with the National Portal of India by the citizens of India. It is essentially the communication between the citizen and the government in matters of information about all the departments, filing and lodging complaints against every single department, availing all services provided by Government of India, posting and seeking inquiry about any and everything and the list goes on and on. The website that the citizens access for this is http://india.gov.in/. This is a comprehensive portal which not only just saves time, but also is pretty informative, easy to access and pretty exhaustive. A literate citizen would have no problem in accessing and getting help from it. Besides this, the National Portal of India also gives the facility of booking train tickets with Indian Railway Catering and Tourism Corporation Limited, checking Aadhaar card status online, applying for Passport at Indian Missions or Posts for NRIs, ePost Office service of India Post, checking visa application status online, tracking status of PAN or TAN application online, checking Pension with Pension calculators, availing e-filing tax returns services of Income Tax Department, availing services for Overseas Citizenship of India by Bureau of Immigration and so on.[5] Similar portals also exist for the governments of all the states in India.

G2B – Government to Business

The Government also interacts with business agencies and has launched Government to Business Portals for many purposes like e-procuring, auctioning of government surpluses, obtaining services relating to planning, starting and operating businesses in India including licenses, approvals, clearances, obtaining no objection certificates, permits and filing returns.[6] E-biz is one of such examples. Its focus is to improve the business environment in the country by enabling fast and efficient access to Government-to-Business (G2B) services through an online portal which will help in reducing unnecessary delays in various regulatory processes required to start and run businesses.[7] Besides that the Government of India also has a Ministry of Corporate Affairs which is primarily concerned with administration of the Companies Act 2013 and 1956, other allied Acts and rules & regulations framed there-under mainly for regulating the functioning of the corporate sector in accordance with law.[8]

G2G – Government to Government

G2G deals with those activities that take place between different government organizations/agencies. Many of these activities are aimed at improving the efficiency and effectiveness of overall government operations. It also includes flow of information like transfer of information through intelligence agencies, information regarding functioning of the state through e-secretaries, database of police and criminals, database of pending cases, recording of court proceedings etc. A state wide network will be introduced which will involve linking all the departments of the Government with various district headquarters and the state capital, facilitating the flow of information between the various state departments and its

[5] *Online Services, National Portal of India, http://india.gov.in/services/online-services (Accessed on 12 February 2014)*
[6] *Ministry of Commerce And Industry, Infosys Jointly Launch EBiz Portal, Press Releases, Newsroom, Infosys, http://www.infosys.com/newsroom/press-releases/Pages/government-business-eBiz-portal.aspx (Published on 28 January 2013) (Accessed on 12 February 2014)*
[7] *About eBiz, E-Biz, https://www.ebiz.gov.in/aboutus (Accessed on 12 February 2014)*
[8] *About MCA, Ministry of Corporate Affairs, Government of India, http://www.mca.gov.in/MinistryV2/about_mca.html (Accessed on 12 February 2014)*

constituents. Here various blocks will be linked to district Headquarters, district headquarters to State Headquarters and State Headquarters to the National Capital.[9]

G2E – Government to Employee

Through this mechanism, the Government controls the activities of the employees. The activities might include information to calculate retirement benefits, access to important applications and content and collaboration with other government employees anytime, anywhere.[10] This method provides E-Learning opportunities to the employees and also a comprehensive database of all the personal details of the employees.

The Internet

The entire writing is valid and possibility of E-Governance is a reality on due to the fact of the presence of internet. Internet is the communicating link between two computers. It is the backbone behind the communication between two servers, or in other words, people being as far as each other. It is the network of networks.

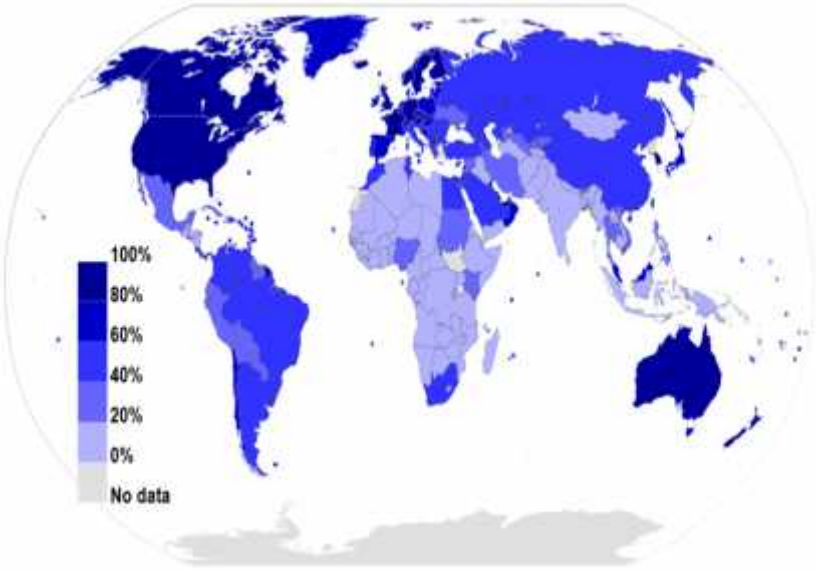
When two computers are connected over the Internet, they can send and receive all kinds of information such as text, graphics, voice, video, and computer programs.[11]

A typical internet connection operates in this manner:

This network is a complex arrangements of servers connecting to one another as a result of which data can be shared, transferred and communication can be facilitated. However, the internet is not completely open. It is firewalled[12] to ensure privacy and prevent fraudulent attacks on the computer.

E-Governance works through this mechanism. But for successful possibility of E-Governance, one needs to properly know how to browse the internet and use government sites. So let's check the literacy rate of internet usage:

Graphical Representations: Population and Proportion of Internet Users



[9]*Sameer Sachdeva, White Paper on E-Governance Strategy in India, 7, http://indiaegov.org/knowledgeexchg/egov_strategy.pdf (Accessed on 12 February 2014)*

[10]*Shailendra C. Jain Palvia, Sushil S. Sharma, E-Government and E-Governance: Definitions/Domain Framework and Status around the World, 4, http://www.iceg.net/2007/books/1/1_369.pdf (Accessed on 14 February 2014)*

[11] *Internet, BusinessDictionary.com, http://www.businessdictionary.com/definition/internet.html (Accessed on 16 February 2014)*

[12] *A firewall is a set of related programs, located at a network gateway server that protects the resources of a private network from users from other networks. It works closely with a router program, examines each network packet to determine whether to forward it toward its destination. A number of companies make firewall products. Features include logging and reporting, automatic alarms at given thresholds of attack, and a graphical user interface for controlling the firewall.*

India falls in the category of 0-20% of utilization of Internet as compared to its population. Out of a population of 1.236344631 billion, only 151.598994 million users use the internet which amounts to only 12.2 % penetration, giving India a rank of 126 in penetration.[13]

But on the other side of it, India also ranks 3 when it comes to the total number of internet users, giving a similar effect of accumulation of digital intelligence in one class of people just like wealth. Due to this disparity, a division comes among the population with respect to knowledge about accessing the web. This division is called **Digital Divide.**

Strategy for E-Governance Implementation

Every plan of action needs a proper strategy to initiate, operate, function and evaluate it. E-Governance, being such a large prospective that runs throughout the country, even with a few international links requires a proper strategy and feedback system right from its initiation stage. The following model is a hypothetical strategy that a given E-Government system can run with. It has several stages and each stage is cohesively linked to another.

Building Awareness and Commitment

Creating awareness is the first ever stage for starting any programme. Awareness can be made possible by introducing a number of seminars and summits[14] at the national and state level. In addition to summits, awareness must be generated among senior officials like the President, Prime Minister, Chief Minister and leaders of other institutions of civil society who largely determine whether and how change takes place.

Building Legislative Infrastructure

Creation of an E-Governance programme requires a large number of laws related to it, like freedom of information laws, laws regarding computer crimes, information technology laws, intellectual property rights etc. Regulatory changes are required for a host of activities like, from procurement to service delivery. The Government of India already has the Information Technology Act. Besides that, a few amendments are needed to be made in consumer protection laws, tariffs and taxation laws. There needs to be a further expansion regarding laws related to accountability, privacy and specific improved guidelines for technological standards, electronic payments and electronic phishing, publishing and archiving are necessary

Building Technological Infrastructure

The Government of India's E-Governance infrastructure model in itself is a pretty complete model to show a proper infrastructure system. This model gives a proper linkage from the state headquarters to the Common Service Centres. By installing multifold CSCs in villages, the rural India can have all access to the real objective that every E-Governance Scheme plans to project. The CSCs are much more than mere service delivery points in the rural India. A CSC is positioned as a Change Agent as it - promotes rural entrepreneurship, builds rural capacities and livelihoods, enables community participation and effects collective action for social change - through a bottom-up approach having a key focus on the rural citizen.[15]

The CSCs would provide high quality and cost-effective video, voice and data content and services, in the areas of e-governance, education, health, telemedicine, entertainment as well as other private services. A highlight of the CSCs is that it will offer web-enabled e-governance services in rural areas, including application forms, certificates, and utility payments such as electricity, telephone and water bills. In addition to the universe of G2C services, the CSC Guidelines envisage a wide variety of content and other services.

Recruitment and Training

Qualification for recruitment must be changed to more IT oriented requirement so as to employ every person with typing skills and required level of computer training. A system of incentives would go a long way in ensuring that employees have the requisite skills for effectively using computers. IT as a subject should be introduced in civil services. Secretaries of

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[13] Calculated using penetration rate and population data from "Countries and Areas Ranked by Population: 2012", Population data, International Programs, U.S. Census Bureau, http://www.census.gov/population/international/data/idb/rank.php (Accessed on 16 February 2014)

[14] A Summit to create a document laying out process and structure, programme and project priorities for the National E-Governance Initiative, including any targets should be organized. It should ensure participation from all stakeholders concerned political parties, bureaucrats, academia, private sector, NGO and the citizens.

[15] CSC as a Change Agent, Common Service Centre Scheme, Government of India, http://csc.gov.in/index.php?option=com_content&view=article&id=103&Itemid=349 (Accessed on 16 February 2014).

ministries must identify persons with an aptitude for computers and an ability to perform the role of leaders and mentors in spreading the IT culture not only in the ministry but also in subordinate organization.

Key implementation capacities to be developed for training would be likely to include capacity to develop information systems, manage projects and to manage change, capacity to be an 'intelligent customer': able to raise project finance, specify needs, manage procurement and capacity to operate and maintain information systems. Training should also give a high priority to attitude change since a key stumbling block to e-governance is the lack of motivation amongst those involved. Such training should aim to speak to both 'hearts and minds'.[16]

Picking Up and Implementation of a Government Project

The next step is departmentalization. Various departments will be built by the government for E-Governance. For instance, if the Government wants to digitalize agriculture department, then it'd bring up various schemes like licensing and registration with Food Safety and Standards Authority of India, knowhow about production process, details of storage warehouses, details about animal husbandry, crops, insecticides and pesticides, agriculture machinery, marketing strategy and so on in its official website and create provisions for online accounts and grievances. The Government of India has done a tremendous job in its National Portal which can be accessed at http://india.gov.in/topics/agriculture.

Hence, projects must be suitably chosen by the Government. Only those projects must be chosen whose operation would actually bring an advantage to the people of India and would most importantly save their valuable time.

Evaluation and Feedback

This is the last step of any project. Simultaneously with the launch of the E-Governance scheme, the stats-meter would also be in operation. Statistics and records should be made and reviewed with respect to the proportion of users accessing and benefitting from the E-Governance scheme compared to the total number of persons for whom the scheme was prepared. Concurring with that, a mandatory feedback facility must also be put in operation for the response from the users regarding the quality of the website, bugs and improvements required.

With regular implementation of all steps, especially the last step, any E-Governance programme can successfully run and not only the urban citizens, but also the 70% of Indian population, the rural group would highly benefit from this scheme and most importantly, the very high digital divide will be reduced.

Benefits of E-Governance

Shifting from the traditional form of governance to e-governance is neither any simple or easy task. It's a giant leap of development, which not only requires humanware, but also requires infoware, organware and technoware. A large support and huge amount of investment is also required from the government. But why is all of this done? Logically, all of this must have some benefits, in fact exceptional benefits. *Sumanjeet* in his article E-GOVERNANCE: AN OVERVIEW IN THE INDIAN CONTEXT, which was published in The Indian Journal of Political Science, explained the proper benefits of e-governance, if it is implemented successfully:

E-Governance would

- "Increase the accessibility of individual citizens to information and services that allows them to influence Government operations.
- Opportunities to earn a living by learning a new skill in the knowledge based economy.
- Producing same output at lower total cost.
- Opportunities to trade and banking online.
- Reduction in time and paperwork.
- Supports effective decentralised decision making by providing an efficient information flow.
- Various Government departments find it very easy to perform their functions like collection of tax, water charges, professional taxes etc.

ITC E-Choupal

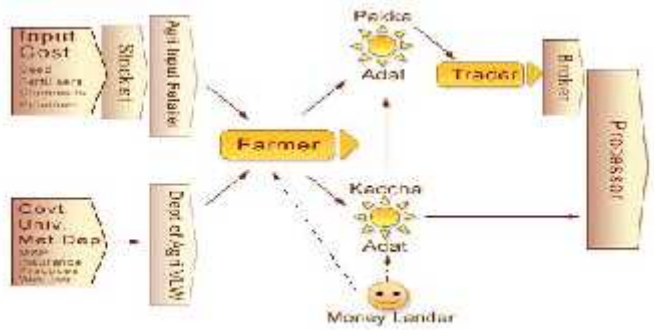
ITC's e- choupal is a one-stop shop, through internet, transmitting weather information, market prices, news, knowledge about farm equipment, risk management, facilitating sale of farm equipment's and consumption goods of verified product quality, price and offering choice of an alternative output marketing channel to the farmer right through his doorstep. This

[16] *Rajendra Kumar, Information and Communication Technologies, 141.*

Agri Business Division, one of India's largest exporters of agricultural commodities, has conceived e-Choupal as a more efficient supply chain aimed at delivering value to its customers around the world on a sustainable basis. The e-Choupal model has been specifically designed to tackle the challenges posed by the unique features of Indian agriculture, characterised by fragmented farms, weak infrastructure and the involvement of numerous intermediaries, among others.[17]

Working

The working of this system is pretty simple: ITC brings in the required information technology to the village of farmers in the form of internet kiosks and provides him the knowledge about weather, farm equipments, risk management. It becomes a retailer for providing raw materials like seeds and fertilizers at a reasonable input cost. The farmers produce crops with enhanced knowledge and technology provided by ITC. This saves a lot of money, eliminates wasteful intermediation and multiple handling, as would have happened in the Mandi system. As a result of this, farmer gain more profit, sell crops to kacha and pakka adats (small and large traders) at a higher rate and ITC benefits from the lower net cost of procurement (despite offering better prices to the farmer). The diagrammatic representation drawn from ITC website is this:



Function of ITC E-Choupal[18]

This famous initiative wasn't any ordinary management. It was an award winning e-governance programme. The ITC e-Choupal for its farmer welfare scheme has won the **United Nations Industrial Development Organisation (UNIDO) Award** at the international conference on **Sharing Innovative Agribusiness Solutions 2008, The Ashoka - Changemakers 'Health For All' Award 2006** for the Rural Health Services model for delivery of health services**, The Stockholm Challenge 2006** for using information technology for the economic development of rural communities, **The Development Gateway Award 2005,** The **'Golden Peacock Global Award for Corporate Social Responsibility (CSR) in Emerging Economies for 2005** and many more![19]

Challenges to Digital Democracy and E-Governance

Success of any digital phenomenon that aims to completely replace a long standing process of involvement of people in large scale for making decisions requires clarification. It must be full proof and problem free. When it comes to E-Governance, the biggest challenge is authenticity of the weight of authority. Every transaction with every agency requires documents of proof which can be cited as authority. In fact, authorized documents play the most important evidence for establishment of a proof in any court of law. Hence, a proper set of technology must be initiated to check the authenticity of any authority.

A simple example could be **digital signatures**. Digital signatures contain every detail of any person, starting from his personal address and personal account number to all his sensitive and financial details. Hackers could easily find simple ways to evade the security systems laid down by the E-Government agency and loot millions of rupees or create uncountable civil and criminal offences. If this situation ever happens, it might lead to chaos!

Another issue is the **wide variation in development rate of developing countries.** Internationally speaking, if the Government of country A has adopted all its policies, including maintenance of diplomatic relations with other countries in certain digital standards with a certain set of laws and country B doesn't have such sophisticated set of technological standards, communication becomes potentially flawed. This happens only due to the absence of uniform international guidelines which would match the parameters of all the countries, especially those, which are at a varying development rate.

[17] *The Big Picture, ITC e-Choupal, http://www.itcportal.com/businesses/agri-business/e-choupal.aspx (Accessed on 17 February 2014).*
[18]*The Value Chain: Farm to Factory Gate, ITC e-Choupal, http://www.itcportal.com/businesses/agri-business/e-choupal.aspx (Accessed on 17 February 2014)*
[19]*Awards, ITC e-Choupal, http://www.itcportal.com/businesses/agri-business/e-choupal.aspx (Accessed on 17 February 2014)*

Although OECD has come up with a few guidelines, it is only for members of OECD, who are Austria, Canada, Denmark, France, Germany, Luxembourg, Norway, Sweden and the United States only.[20] So, this is another challenge.

Yet another problem in this regard is **security systems in the computer**. The infamous virus attacks on the computers always stay at the back of everyone's mind. With improving technology from time to time, hacking of personal information theories also improve. Modern web browsers have the features of caching[21] and cookies[22] which add to the problems. People don't bother to buy anti-virus software which puts them in biggest jeopardy and just opens the door for anyone and everyone to steal personal information.

The biggest challenge of them all is the combination of all these issues: the **Right to Privacy.** In *Unni Krishnan v. State of A.P.*[23], the Supreme Court held that right to privacy is covered under Article 21[24] of the Constitution of India. he slightest apprehension on the part of a person using the Internet about who will see their personal information and how it will be used would by itself mean that they have lost a basic freedom. Moreover, the more others know about the details of a person's life, the greater their opportunity to influence, interfere with, or judge the choices the person makes.

But after a country has invested so much upon e-governance and the project has reached its penultimate stage subsequent to an enormous investment of mind, money and technology, the e-governance system must make its last step, which is security from all the loopholes for outflow of privacy. The law must allow the flow of personal information, but fair and equitable rules must be running side by side in order to protect the right of privacy and bring clarity on the mind of the concerned user, as to what information he is providing and what he is not.

Conclusion

No matter how much, this system has progressed, e-governance is still in its introductory stage, if not, just a step above that. All the systems, computers ICT, storage and human resources that are being utilized are only for its advancement, with an eye for the facilitation of the citizens only, nobody else. It is quite easy today to utilize all the facilities and transmit and receive information in seconds and save large chunks of time, only due to the advanced infrastructure and global reach, rural areas included, of this mammoth phenomenon. We all take this facility, this opportunity for granted, yet we stand indifferent for its creators and maintainers.

It is not difficult for leading India from being the second largest in e-government development countries (population wise) to becoming the world's largest e-governance leader by overthrowing the Republic of Korea. Educational advancement rate in this mighty nation is proportionally developing along with the plethora of universities being established for diverse projects that all form a part of e-governance mechanism. The National E-Governance Plan (NeGP) has a large room for improvements, and it is we, the people of India who can only fill that gap and make it the most comprehensive and exhaustive portal for citizen's accessibility, facility and grievance solving. There are some challenges to the basic structure of the e-governance itself, like a potential hint of denial of right to privacy. But, from now onwards, this issue can be foreseen to be solved, if the Legislature steps up and builds a clear set of guidelines and procedures regarding the protection on the flow of information, the limits of accessibility of every detail and the citizen's awareness of the information that he sends to the government. So all in all, the entire concept of digital democracy and e-governance is a benefit and success!

[20] *Preface, OECD Guidelines on the Protection of Privacy and Trans border Flows of Personal Data,* http://www.oecd.org */internet/ieconomy/oecdguidelinesontheprotectionofprivacyandtransborderflowsofpersonaldata.htm (Accessed on 19 February 2014)*

[21] *'Caching' occurs when any web page accessed by a user is stored by that client's computer (client caching) or by the network server that provides the user with access to the internet (proxy caching). Caching causes a potential problem where it occurs for profiling purposes.*

[22] *The use of 'cookies' is more intrusive, as they have the capacity to build profile on the needs, preferences and patterns of expenditure of any individual visiting particular web sites. Cookies work by placing an identifying code on the hard drives of those who visit the site. This code allows the visitor to be tracked as they travel through the website and to be recognized on subsequent visits.*

[23] *1993 SCC (1) 645 JT 1993 (1) 474*

[24] *No person shall be deprived of his life or personal liberty except according to procedure established by law.*