E-GOVERNANCE: A RUNNING REQUISITE FOR KNOWLEDGE SOCIETY IN INDIA

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Abstract: *Digital development affords a new perspective from which to imagine the future direction of India's social structure. Rather than remaining locked in the paradigm of an eternally developing nation, it now seems possible to aspire to becoming a knowledge society (KS). India can become successful in achieving such an empirical and epistemic shift, and become KS. This can begin to happen if major estates of society - the state, private enterprise, academia, civil society organizations come forward for e-governance. Knowledge Society and e-Governance have close association, as e-governance is one of the major characteristics of KS.*

The paper discusses the basic aspects of KS. How e-Governance and KS are related, related elements of e-Governance for KS are discussed. Highlights the manners (Knowledge-transfer process: knowledge assessment) responsible for association and the typical relationship existing between E-governance, KS and citizens. Roles of government and business counterparts in materialization of plans are given. The basics of e-governance and how it runs in knowledge society is given along with the requisites in order to sustain in KS. The Digital divide has been highlighted so narrowing digital divide basically in rural areas through language facilitation, education of information and communication technologies is discussed. Efforts of central government and various state governments are highlighted regarding the reducing digital divide problem. Help from private enterprises for government machinery is highlighted. The increasing span of e-governance in KS is discussed through the ideas such as channels for the flow of information through e-governance in KS, factors, which necessitates e-governance in KS, creation of KS with "Equity", Benefits of e-governance in KS and impact of e-Governance on KS. The paper gives over-view of developed and developing countries regarding the role of e-governance to develop KS. Concludes with discussing the role of e-Governance in the Current KS.

1. E-GOVERNANCE

E-Governance is a technology for governance using Electronic Media, Internet Technologies and Knowledge Management. E-governance involves new styles of leadership, new ways of debating and deciding policy & investment, new ways of

accessing education, new ways of listening to citizens & new ways of organizing and delivering knowledge & services. It is more than just citizen services, being re-engineered by technology or procurement over the Internet. In the age of knowledge, the use of information and communication technologies (ICT) is increasing in developing countries with the outcome of ease in communication between individuals and governmental organizations. Knowledge has become accessible, verifiable, and replicable and it can be distributed easily.

Blake Harris (2003) says,

"E-Governance is not just about government web site and e-mail. It is not just about service delivery over the Internet. It is not just about digital access to government information or electronic payments. It will change how citizens relate to governments as much as it changes how citizens relate to each other. It will bring forth-new concepts of citizenship, both in terms of needs and responsibilities. E-governance will allow citizens to communicate with government, participate in the governments' policy-making and citizens to communicate each other. The e-governance will truly allow citizens to participate in the government decision-making process, reflect their true needs and welfare by utilizing e-government as a tool" [1].

2. KNOWLEDGE SOCIETY AND E-GOVERNANCE

The development of society can be seen as transformation of Pre-Industrial Agrarian Society into Knowledge Society (KS) clearly. It reached to this stage after crossing industrial, post-industrial and information stages. So in the 21st century, a new society is emerging where knowledge is the primary production resource instead of capital and labor. Now as the knowledge age is going on so it becomes necessary to understand what knowledge society is in real! KS gives emphasis on knowledge in each its activity; knowledge is used as an important commodity. At one hand, all services are based on knowledge on the other, knowledge based services are main services in KS. So we can say that knowledge is an essential component of each and every activity of KS and basic network in KS is found as knowledge-network. When it comes to governance, knowledge based society can be run by efficiently through e-way i.e., e-governance. e-Methods become important part to share knowledge and to administer citizens in knowledge-society.

2.1 Basic aspects of KS:

- Knowledge is an essential ingredient.
- Services are knowledge-based.
- Knowledge is used as commodity (input, creation, share), rather a stored piece.
- Citizens are knowledge-user.

Basic aspects of KS show that citizens are knowledge centered. Citizens are the basic component of any society so the knowledge demanding citizens are the prime part of knowledge-society. Knowledge components of the citizens are attitudes, sharing, communication, skill teamwork, motivation, organization, and vision/objectives. The citizens require knowledge whether they are interacting with other citizens in the society or with the government.

Building KS calls for the restructuring of social, economic and political systems. Here e-governance provides the interface between public, private and community interest. In fact it is and leads to good governance. The key success factor is a 'mindset' that includes attitudes and values. Knowledge-Based Development Strategy requires: Access to the rich diversity of human social and cultural experience in order to build not only an informed or knowledgeable society, but a wise one; the capacity and opportunity to participate actively in local and national decision-making processes; and an Institutional governance framework to promote and encourage smart-partnerships.

2.2 e-Governance and KS: The relationship

- Knowledge is key to economic opportunity.
- The KS will transform social structures and totally reshape the world of work.
- Demands of the future: Lifelong learning.

For if knowledge is not just a constitutive feature of our modern economy but a basic organizational principle of the way we run our lives, then it is justifiable to talk about our living in KS. This means nothing more and nothing less than that we organize our social reality on the bases of knowledge.

2.3 Related Elements of e-Governance for KS

- Networking and access
- Knowledge superhighways and infrastructures,
- Knowledge-based generation,
- Quality issues,
- Lifelong learning and distance education,
- Integrity,
- The consequences on business and industry, and
- The impact on the knowledge professionals.

2.4 Association of e-Governance with KS

e-Governance is associated with KS in following manners:

- **Knowledge-transfer process:** e-Governance provides the best means to the knowledge transfer process. It provides the means and methods to make the transfer process possible with out hindrances, the knowledge reaches to the demanding section of the society and the people can make use of it.
- **Knowledge assessment:** e-Governance provides the ability to assess the quality of knowledge. *What is required for what* can be understood by fully, equally and in right manner by the people of the KS. The basic element of the KS is the knowledge assessment.
- **New measures of value:**

a. **Financial:** the very important measure as the country is developing one and e-governance can lead to good financial condition with the help of knowledge-generation, assessment and transfer in various activities.

b. **Intellectual (customer, human, structural):** the second measure is very important in the terms of intellect found at customer, human and structural basis. E-governance leads to KS, so the user of knowledge assess its value as customer, in general as human being and it takes finally form of the structure of the KS.

As KS has two important components (a) societal transformation, (b) wealth generation, the societal transformation has to be through large-scale development in education, healthcare, agriculture and governance. These in turn will lead to employment generation, high productivity and rural prosperity. It can take place only with the help of e-governance. e-Governance takes the fastest, purest and most required form of administration which in turn leads to better society and future.

3. E-GOVERNANCE, KS AND CITIZENS: A TYPICAL RELATIONSHIP

A typical e-governance in knowledge-society will take the following form showing relationship with the citizens, flow of governance towards citizens and use of information technology along with business counterparts.

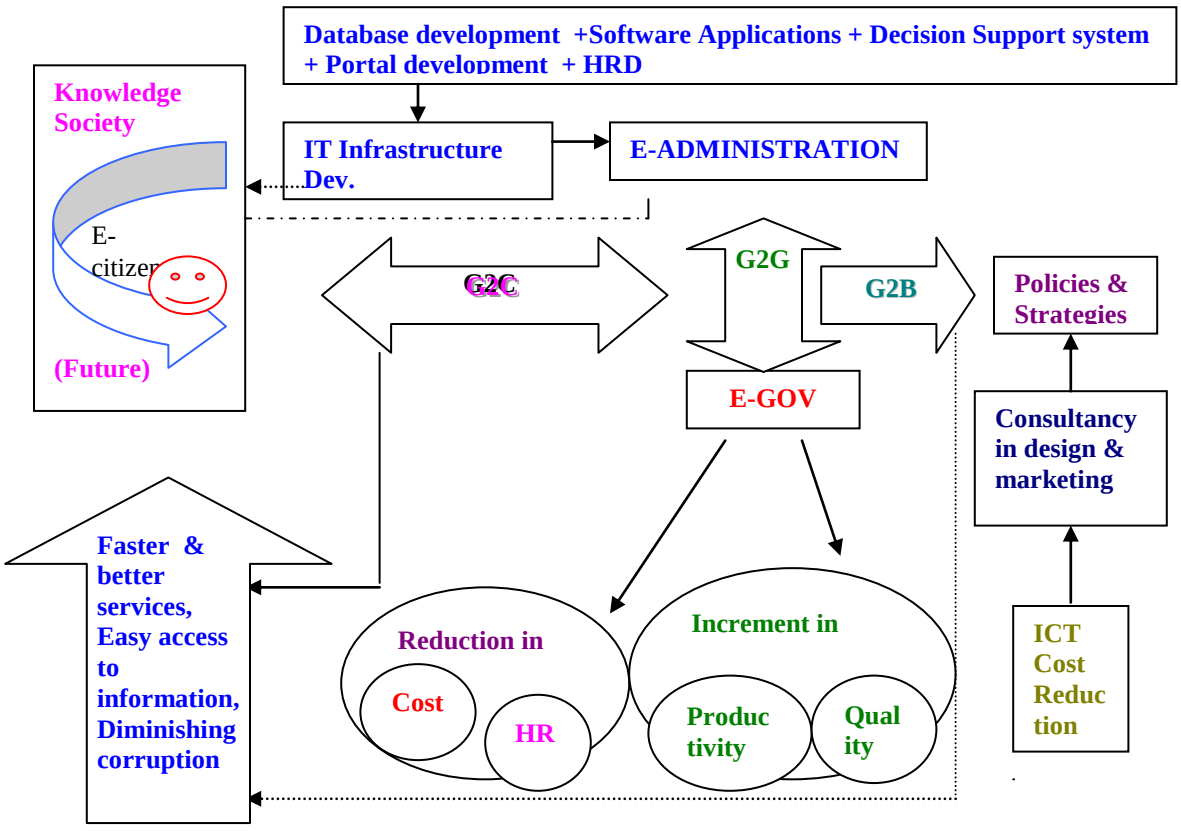

Figure 1: e-Governance in Knowledge-Society

In e-governance, the Citizen is represented in the Government. It encourages the citizen to participate in debates and exchange views and opinions. The citizen is being consulted in important decisions. It also engages a citizen towards establishing a healthy relationship between him and the Government.

3.1 Materialization of Plans through e-Governance in KS

The most important aspect of e-governance is the materialization of the framed strategies. It indicates the working out of the planned steps. With out working out the plans, e-governance cannot be implemented. It involves following major responsibility:

3.11 Role of government: Government is the sole responsible for the soul of e-governance. In India, following aspects can be considered where the govt. can:

- Create an environment to facilitate growth of technology and related industries
- Increase the use of ICT in governance
- Encourage private sector to help in this field

Besides this, we should remember that without controlling mistakes, errors we cannot move towards a proper and high yielding e-governance. At another hand, minimizing the repeating mistakes we can forward on the path of correct planning. Change management should be the key focus area. State governments should look at closely, as it goes beyond investments in hardware and networking.

3.12 Role of Business Counterparts: The govt. alone is not sufficient to cope with the challenges of e-governance as the business, industries and commercial organizations are also related with the citizens. They are the players in the field of governance along with the govt. organizations where the common goal of service is the citizen. Following important areas are intended to welcome the commercial counterparts:

- Policies and National strategies
- Project designing,
- Promotion of regional integration projects with wider markets
- Development of appropriate educational materials and software
- ICT training skills
- Innovation and development of ICT applications

4. HOW E-GOVERNANCE RUNS IN KS?

4.1 Internet: the interface

The Internet is becoming the focal point for redesigning state government and providing better information and services to citizens in KS. The best state web sites focus on the needs and preferences of users and offer the same kinds of customer conveniences found on private-sector web sites. Under its India Image Programme, NIC is providing WWW services to Ministries, Departments, State Governments and other Government organizations. Various states are providing interfaces and information with the creation of web-sites [2,3]. The web sites of various small cities are being created to provide useful information about the History, Geography, Political, Social & Cultural Activities, Important phone no. and Statistical data relating to the town.

4.2 Video Conferencing Network

Video conferencing networks are becoming important ways for G2C interaction in distant places**.** Tamil Nadu is the No. 1 State to have video conferencing network installed for revenue and police officials. A Video Conferencing Network linking the Ministers, all Secretaries, 29 District Collectors and other senior Government officials installed [4]. The State of U.P. recently achieved a landmark with the setting up of Demand Assigned Multiple Access (DAMA) based Videoconferencing by NIC, connecting all its seventeen Divisions [5].

4.3 Computerization

Use of computer must be increased. Computerization has started happening in various sectors. All District Collectors in Tamil Nadu have been provided with Laptop Computers. Govt. of India is also taking help of computers for various departments. The Ministry of Finance has started computerizing its Principal Accounts Offices (PAOs) [6]. Delhi Transport Corporation (DTC) has introduced its computerized bus pass system for the masses of Delhi, taking a big step forward in the direction of e-governance [7].

4.4 Online Services

Online services are basic in interest of public services. These services are passport application [8], registration procedures [9], school examination results [10], trade guidelines [11], tele-medicine [12], and land records computerization in 'taluks'. Online admission will be the norm in the years to come as already four or five colleges have started taking forms online [13]. In Kerala, PEARL (Package For Effective Administration Of Registration Laws) intends to replace the existing registration system by a system of online processing. Besides this, Centralized web-enabled billing and collection at Trivandrum is under consideration [14]. Recently 'Sampark', software was launched by the Finance Ministry to enable income-tax return in a prescribed format on Internet [15]. All this is directed towards the online government of India.

4.5 In Social Security

Society is what for which each govt. works in the world and this is the IT, found everywhere to make its impact, so why not advancing towards the use of IT for society. The use of IT can play a very important in the most basic feature of civil society. In the world of crime, the use of IT can save time of Police and help them in mapping the crime. The Indian Police can learn something great from the New York Police in this context. The 'CompStat' is working well there [16]. The U.P. Police is prepared to tackle with the cyber fraud [17]. It is the impact of IT to save the society from the crime.

4.6 Check on Corruption

In KS, e-Governance can play an important role in reducing corruption by materializing the 'access to information' concept in KS. The transparency can be created and executed by e-governance to diminish corruption. The digital signature [18] is one of the steps towards check on corruption in emerging KS in India.

5. REQUISITES FOR E-GOVERNANCE IN ORDER TO SUSTAIN IN KS

5.1 Narrowing Digital Divide

The current problem on the part of citizens is the "digital divide". To avail and access the facilities and fruits of e-governance, it is necessary to narrow the digital divide. The common man in the country continues to be largely unaware of the potential of IT in daily life.

5.2 In Rural Areas

Digital divide is a significant problem. The e-governance should analyze the digital divide, particularly in rural areas, and develop possible remedies to make digital information accessible to them. Though the central govt. is planning to bridge it yet a lot is to be done by govt. of states. With out the effective efforts and steps, the gap is not going to be filled. SARI (Sustainable Access in Rural India), piloted by Government, Private and Academia partnership, now upgraded as RASI (Rural Access to Services through Internet) to cover the entire state [19]. Presently more than 50 per cent of the population in the U.S. own computers, and a vast majority has access to computers at work place. But only as low as 2.7 per 1,000 people in India have computers, whereas the world-average itself is 70.6 per 1,000 [20]. '**Simputer**' for narrowing digital divide is a low cost alternative to personal computer that can be operated by computer illiterates with the text to speech capability [21].

5.3 Language Facilitation

Govt. should take initiatives for language-facilitation. For example, the Government of Kerala has constituted a Committee for setting up Standards for Malayalam language Keyboard and character encoding [22]. The web site of Orissa Legislative Assembly represent another example for language facility by providing a link for reading important information in Oriya language [23]. Apart from it, a special feature of the Food & Supplies Department Haryana web site is the facility to download the Ration Card application form in Hindi [24]. Tamil Nadu is making notable progress in online citizen services in Tamil and English, especially Web-based information about land records, birth/death certificates, subsidy schemes, college admission forms, and examination results.

5.4 Education of ICT

India is among the countries with national ICT policies and master plans, applying and testing various strategies but not fully integrating ICT within education. [25]. The government will spend Rs 12,000 crore in next four years on e-governance and to take e-learning to schools in every district across the country [26]. Recently government launched a computerization programme 'Vidya Vahini' proposing to connect 60,000 government –funded senior secondary schools through Internet and Intranet [27]. In Kerala, **'IT@ School'** is set to introduce computer training in government schools, with the involvement of the private sector [28]. An initiative from the central govt. to launch an IT program for secondary schools is the first of its kind [29].

5.5 Help of Other enterprises for efficient service

Where the govt. cannot make path herself, private enterprises can be consulted in KS. Cisco Systems and IBM made partnership when Punjab State IAS Officers Organization organized a day seminar on "Governance in the 21st century-Challenges before the Civil Servants" [30]. These sorts of activities will help in learning as well as proper implementation of e-governance. For the 'Vidya Vahini' project, Super Infosoft, vision Info Solution and JIL Information Technology have provided the service [31]. For Hi-tech education in U.P., Intel (for training) and Microsoft (for technology) are joining hands with the govt. [32]. The government of U.P. also announced a strategic partnership with Lotus Development Corporation to source solutions specifically designed for Government use, on Lotus Domino and Notes platform. These solutions will be implemented through their joint venture partner, Cyberspace Infosys Ltd., who has recently become partners for the Lotus Authorized National Support Center as well. [33]. TGK India, an IT systems company, bagged the contract in June last year to implement PAO-2000 in 108 PAOs [34].

5.6 Bringing Internet Closer

The Internet has cut the frontiers of time and space. Accessing information and giving feedback has become easy to handle. But this calls for a strong network of internet-perfect government as well as internet-intelligence on the part of the citizens. The key solution to bringing the Net to a wider citizen base will reside in innovative approaches like installing cyber-cafes along railway stations outside cities, using solar power for computers, developing low-cost PCs. New access techniques like DSL (Digital Subscriber Loop) and WLL (Wireless in Local Loop) should be developed and used at wider level. The Toronto Star reports the use of web by women to gather information on reproductive health and child rearing, learn how to treat snakebites, make doctors' appointments, and check into social programs for which their families qualify [35]. New York Times mentions a rare social experiment, that in one village, elders have allowed one side of the temple to house two solar-powered computers to give the poor village a wealth of data, from the price of rice to the day's most auspicious hours [36]. It shows that rural India is equally aspiring for Internet.

5.7 Use of software to download and upload information in desired language

There should be some facilities like getting into in desired language. Such software must be developed to download and upload information in desired language, as many of our people are not aware of English so it becomes requisite to become KS.

6. INCREASING SPAN OF E-GOVERNANCE

6.1 Channels/communication points which shows flow of information through e-governance in KS*:* as KS demands free flow of knowledge, so it is necessary to provide such points or ways as are required by the stored knowledge. The channels or communication points can be as following:

- Public ICT centres as community Internet centre, and at greater level;

- Combining ICT with conventional modes like newspapers, which can transmit information with the help of ICT to a large number of targeted users.

6.2 Factors, how and why e-governance is necessary in KS: e-governance is one of the characteristics of KS. It is clear through following aspects:

- Open and timely access to Information and Knowledge.
- The capacity to absorb and interpret information.
- Avenues and opportunities to use knowledge for informed decision-making and for transformation to higher quality of lives.
- **Creation of KS with "Equity":** e-Governance is a kind of dynamic process where not only the people access information and knowledge, but also the knowledge finds its way to the probable users.

6.3 Benefits of e-governance in KS

- Electronic delivery of services to meet citizen expectations and requirements
- Convenient, anytime, anywhere citizen services
- Support for e-commerce initiatives (e.g. online filing, payment)
- Significant improvement in Government to Citizen (G2C) interfaces.

6.4 Impact of e-Governance on KS

Impact of e-governance can be discern through following aspects:

- knowledge Awareness
- Economic Liberalization and Integration
- Politics
- Culture
- Law
- Technological environment

7. KS AND E-GOVERNANCE: AN OVER-VIEW OF DEVELOPED AND DEVELOPING COUNTRIES

Developed countries are becoming KS due to e-Governance. Applying for Citizenship, employment, finding information about national security, Government Sites, Communities, Education, Immigration Indigenous, Law & Justice, science & Technology, Tax, Women and Youth is possible due to the effect of e-governance. We can take example of Australia [37]. Fiji is advancing towards KS with the impact of e-governance [38]. Ministry of Information, Communication and Media Relations of Fiji is working for providing information and related knowledge to its citizens. New ICT development policies of Fiji are one of important features [39]. New Zealand and UK facilitate the participation of its citizens in government [40,41] It can be said a good example of KS with effect of e-governance. In UK, people can register to vote online [42]. Each information regarding central and local government can be searched online. In Singapore, citizens are well equipped with knowledge regarding govt. activities from PMO to budget [43].

In developed countries, e-Governance started with businesses demanding an increase in productivity and efficiency from their governments' functioning. That was the

key driver for E-Governance in developed countries such as Western European countries, Canada and US. Citizen service was delivered later [44]. UNESCO studied the Country Profiles for e-Governance of 15 developed and developing countries [45]. The countries are Botswana, Mauritius, South Africa, and United Republic of Tanzania, Morocco, India, Malaysia, New Zealand and Republic of Korea, Canada, Estonia, Hungary, Malta and Jamaica, Mexico. Study develops national profiles detailing current status and developments in this area. Whilst impacts of e-Governance in the commercial, NGO and professional areas are covered in these studies, the main focus centers on specific Government initiatives regarding e-governance.

8. E-GOVERNANCE AND KS: A DISCUSSION

- ✓ **e-Governance** - the increasing e-way of governance through growing ICT -- is generating controversy and concern in the KS.
- ✓ Is e-Governance working as a force for progress, bringing intellectual opportunity and greater knowledge access to all?
- ✓ Is e-Governance a vehicle for domination of knowledge-poor people by wealthy corporations, of individuals by global organizations, of the "weak" by the "strong"?
- ✓ Does e-Governance undermine democracy, cultural diversity and a clean environment -- or boost them?
- ✓ Is e-Governance and its effects are more complex in the KS than captured by these questions?

While framing e-governance for KS, it should be considered that e-governance should be able to provide means and methods for communication, accessing information with in various groups and strata of the society. For making this possible and a basic aspect of KS, liberalization of telecommunication policies, establishing community e-centers and opening ways to grasp social feedback are necessary. Further developing user-friendly web sites reflecting all possible information, interaction and daily life services are must. For smooth and error free communication and flow of information, drafting cyberlaws, legislation etc. is also requisite.

9. ROLE OF E-GOVERNANCE IN THE CURRENT KS

e-Governance can play following role in the KS:

- ♦ Creation and support of a "forum" for the purpose of rethinking education in the age of globalization and information.
- ♦ Support mechanisms for the exchange of ideas and experiences in the use of educational technologies.
- ♦ Encouraged explorations, experimentation to push the frontiers of the potential of information technologies and communications for more effective learning.
- ♦ Engagement in the design of pilot "knowledge communities"
- ♦ Encouraged, and engaged in, collaborative schemes for the development of educational curriculum-related software.

e-Governance, a very real phenomenon, is transforming the world economic system. The era of e-Governance has tremendous concomitant implications for knowledge and KS.

Dr. R A Mashelkar says [46] "Only those nations will survive in the present millennium, which build knowledge-centered societies; the others will vanish into oblivion. If the Indian society has to become a knowledge-centered society, then it is important that every Indian becomes a knowledge worker, be it a farmer, a rural woman, a media man or an artisan. In a KS the knowledge workers will perform different tasks. Some of them will generate knowledge, some will acquire knowledge, some will absorb knowledge and some will communicate knowledge".

Far from replicating the online behavior of highly connected and cosmopolitan societies in North America, Europe, or South East Asia, therefore, digital development in India requires us to design products, services, and technologies that solve very local problems and ameliorate local socioeconomic conditions leading to knowledge society.

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