DIGITAL REVOLUTION AND GOOD GOVERNANCE: A NEW STATE IN MAKING

Dr. Durgambini Patel*

Introduction

Science, technology and law share unique relation. Technological advancement has tendency to alter human relations and social ethos, posing new challenges to the existing laws in the context of society. As the function of law is to regulate social conflicts and deliver justice, law must be restructured to meet the exigencies, and suit itself to cater to the new issues that have science and technological derivatives. The passing of the Indian law titled, the Information Technology Act, 2000 is one such example that was implemented to give legal recognition to electronic revolution that created novel mean of legal transactions and also opened new forms of human interactions that needed to be recognized and regulated if lead to conflicts. The science and technological innovations have twin implications. On one hand, ethical use may bring unprecedented benefits to the society, and on the other hand, they may be a very cause of destruction. Hence, the law must promote the boon and eliminated the bane caused by science and technological revolutions by means of social engineering and balancing of conflicting interests.

Information Communication Technology (ICT) resulting from computer and internet systems has opened up new vistas and created a form of cyber space that is borderless and virtual in nature. To govern is the function of a government. It is responsible to run the machinery of the state. The ICT revolution has altered the modus operandi of governmental functions. Digitalization is a boon for government to reach the masses and receive feedback from them. However, as any other technology also has their adverse repercussion. Massive digitalization in governmental functioning is a device to achieve good governance. However, at the same time it creates a digital divide, especially in developing countries with large populations of poor, illiterate and the eliminated. They are in a disadvantaged situation to avail the benefits of digital revolution and unable to ameliorate their conditions. Therefore, the government must attempt to reach the most disadvantaged category to use the technology to do distributive justice and establish an egalitarian

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* Associate Professor, Department of Law, University of Pune, Pune.

society. These factor and trends are indeed a march towards creating a new concept of state that uses electronic medium for governance.

Good Governance

Good governance means governance based on certain principles. Parameters of good governance include transparency, accountability, participation, decentralization and fairness. As per the World Bank good governance is in two forms:

1. Economic role for the state to set up policy reforms.
2. Non-economic aspects, e.g., transparency, accountability, participation and responsiveness to be followed in the process of governance and functioning of state organs leading to administration of justice.[1]

There is a general feeling among the citizens, even in democratic polities, that the governments take decisions unilaterally, and this is further compounded by the secrecy involved in making/taking decisions. The citizens normally feel that the government and its officers are never held accountable for their decisions and actions. Society always feels that the government is never efficient when it performs its tasks. There is always a perception that the government officers function with lethargy. When contrasted with private employees it is believed that the government officers are corrupt and inefficient. Corruption, unaccountability, non-transparency, unfair and arbitrary means of functioning are the major shortcomings that have created a massive unrest in the minds of the masses. Loss of trust and faith in the government is a sign of unhealthy democratic process. Due to this, it is always felt that there is need to decentralize power, eliminate absolutism and create element of responsiveness among the elected government who is accountable for its deeds and actions.

ICT technologies can create far-reaching and sweeping transformation and miraculous achievements with regard to improving the image of a government resulting in increasing its efficiency. The Government of India has embraced the ICT system in governance to bring its services close to the people and meet their expectations. ICT advances have touched almost all aspects of life of the people and therefore the government service delivery could not be left out. In fact extending ICT to governing functions is a device to

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[1] Atul Lalsaheb, An Appraisal of the Judicial System in India: A Critical Study of Judicial Independence vis-a-vis Judicial Accountability 79-80 (Jan. 2013) (Ph.D. thesis, University of Pune), (on file with author).

achieve a more efficient and highly desired governmental system that can stand up to the expectations of the people. Due to pressures of technological inputs like internet that mobilizes information with faster speed and accuracy the concept of e-government was brought to fruition.

E-government and its Impact on Good Governance

Citizens expect good governance from their government and e-government helps in furthering the goals of good governance, viz.:

1. To increase transparency
Citizens expect a transparent government and e-government brings transparency by disseminating government rules, procedures and its performance data to a wider audience. It helps to make public the decisions of civil servant/officers of the government. Transparency is further entrenched as public assets disclosure is made; procurement information is given i.e., not kept hidden/under wraps.[2]

2. Reducing corruption
E-government helps to reduce corruption by ensuring that financial transactions are monitored, and this is done by putting the information of the procedures online. This helps more people keep an eye which reduces chances of corruption. By removing and eliminating intermediaries corruption avenues get reduced. By resort to e-government there are less discretionary powers on the civil servants. Further, role of civil servants being gate keepers is curbed hence reducing their chance of being corruptible.[3] The consequences of administrative corruption are quite severe for developing societies as corruption in any system has a tendency to hit the poor the hardest. In the liberalized economy of 21st century corruption creates impediments for the flow of Foreign Direct Investment (FDI). It causes loss of revenue to the government and encourages dishonesty and inefficiency among the employees/citizens.

3. Improved service delivery
Since processes and functions are automated, time taken to complete transactions is considerably reduced. This reduction in time, counts as improved service delivery to the service seeker. Due to the ICT revolution citizens even in remote and far flung areas have access to internet facilities. This accessibility of internet has enabled the government to deliver services to a great number of

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[2] SUBHASH BHATNAGAR, E-GOVERNMENT FROM VISION TO IMPLEMENTATION: A PRACTICAL GUIDE WITH CASE STUDIES 37 (Sage Publications, New Delhi 2004).

[3] *Id.*

people/population. Since ICT processes are automated and interactive this has reduced the cost and need of citizens to go directly to governmental offices for seeking services.[4]

4. Improving civil service performance
Due to automation, tedious repetitive work gets eliminated hence furthering efficiency, which boosts the performance of civil servants. As processes become automated the redundant staff gets eliminated. As bandwidth speed increases, data exchange both intra and inter department wise is increased, with it comes increase in speed and efficiency of workflow. As all work and functions get increasingly done by computers the task completion rates can easily be monitored by senior staff. Because of the above mentioned factors the performance of the civil servants in the eyes of the service seeker improves.

5. Empowerment
Without ICT i.e., in the traditional mode, there used to be many intermediaries who acted as brokers for government services. They know how the system works, all rules, people, and could manage to solve any situation. This is the breeding ground for corruption and malpractices. However, because of ICT many intermediaries have now been eliminated as services are brought closer to the people. This has empowered people to complete their transactions with the government at a speedier and cheaper cost. Far flung communities and villages which had no access to governmental services are now able to access the same services at the touch of a button. Hence, such communities will be empowered especially after the E-governance National Plan is executed whereby all parts of India will be connected digitally.[5]

6. Improved finances for the government
Due to advances in ICT there are more automated services. As automation increases, cost of transactions for government processes gets reduced substantially. With this reduction citizens save as well as the government. There is improvement of audit functions which leads to increased finances for the government. As all processes are computerized, all expenditures can be checked. With this checking, expenditure can be monitored and hence better control and management of the expenditure which further improves government finances.[6]

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[4] *See supra* note 2, at 38.
[5] *Id.*
[6] *Id.*

Therefore, introduction of ICT in governance results in less corruption, increased transparency, greater convenience, revenue growth and or cost reductions.[7] The Government of India has focused on e-governance as a critical area in the larger context of improving governance.[8] Due to computerization of local governing bodies that has been and is taking place, e-governance in India is becoming a reality. Through e-governance citizens can get services such as birth and death certificates, tax payments, e-mail etc. In the rural areas once connected[9] they can get the same services at the *Gram Panchayat* office itself.[10]

Conceptual Analysis

The term "e-governance" is a process of enabling transactions between concerned groups and the government through multiple channels by linking all transactions points, decision points, enforcing/implementation points and repository of data using information and communication technologies to improve the efficiency, transparency, accountability and effectiveness of a government.[11] In other words as stated by World Bank in 1992, governance is defined as the manner in which power is exercised in the management of a country's economic and social resources for development. According to the United Nations Development Programme (UNDP):

"Good governance is, among other things, participatory, transparent and accountable. It is also effective, equitable and promotes the rule of law."[12]

"E-government" is a process of reform in the way governments work, share information and deliver services to external and internal clients. E-government harnesses information technologies to transform relation with citizens, business and industry; citizen

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[7] *See supra* note 2*,* at 21-22.

[8] R. Chandrashekhar, *NeGP and Urban Local Bodies*,
http://indiagovernance.gov.in/files/NeGP.pdf.

[9] The Government of India under the National E-governance Plan intends to computerize 250,000 *panchayats* at cost of Rs.5,400 *crore.*

[10] *Taking E-governance to Rural Areas*,
http://southasia.oneworld.net/archive/Article/taking-e-governance-to-rural-areas#.UQjGAiLKPYM (last visited Jan. 29, 2013).

[11] Anil Srivastava, *E-governance or Development What Comes First: Issues and Correlations* (The Maxwell School of Citizenship and Public Affairs, Syracuse University) *referred in supra* note 2*,* at 21.

[12] *What is Governance?*,
http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/MENAEXT/EXTMNA REGTOPGOVERNANCE/0,,contentMDK:20513159~pagePK:34004173~piPK:340037 07~theSitePK:497024,00.html. (last visited Jan. 12, 2013).

empowerment through access to information or more efficient government management. As per the World Bank, "e-government" refers to the use by government agencies of information technologies (such as wide area networks (WANs), the internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends, viz., 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 can lessen corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.

   "Governance" is a broader concept that encompasses the state's institutional arrangements, decision making processes, implementation capacity, and the relationship between government officials and the public. E-governance is the use of ICT by the government, civil society and political institutions to engage citizens through dialogue and feedback to promote their greater participation in the process of governance of these institutions. E-governance consists of two distinct but intimately intertwined dimensions, viz., one political and the other technical, relating to issues of efficiency and public management.[13]

Technical Transitions Outputs

Traditionally, the interaction between a citizen or business, and a government agency used to take place in a government office. With emerging information and communication technologies it is possible to locate service centers closer to the clients. Such centers may consist of an unattended kiosk in the government agency, a service kiosk located close to the client, or the use of a personal computer in the home or office.

   Analogous to e-commerce, which allows businesses to transact with each other more efficiently (B2B) and brings customers closer to businesses (B2C), e-government aims to make the interaction between government and citizens (G2C), government and business enterprises (G2B), and inter-agency relationships (G2G) more friendly, convenient, transparent, and inexpensive.[14]

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[13] *See supra* note 2*,* at 21, 22.

[14] *Definition of E-government*,
   http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCO
   MMUNICATIONANDTECHNOLOGIES/EXTEGOVERNMENT/0,,contentMDK:2050715
   3~menuPK:702592~pagePK:148956~piPK:216618~theSitePK:702586,00.html,   (last
   visited Jan. 12, 2013).

E-government applications normally evolve through a four stage process:

1. The first stage (web presence) includes the publication of information on a website for citizens to seek knowledge about procedures governing the delivery of different services.
2. The second stage (limited interaction) allows for interactivity online. Client can download applications for receiving services.
3. The third stage (transaction) involves electronic delivery of documents.
4. And the fourth stage (transformation in nature of single window service) joined up government i.e., interlink between different sections of government departments which results in electronic delivery of services where more than one department maybe involved in processing a request or a service. This new model of service is based on public private partnership (PPP).[15]

E-governance in Rural Areas: Indian Experiences

1. Gujarat

The e-*Gram* Project, collaboration between Adobe and the *Panchayat* Rural Housing and Rural Development Department, Government of Gujarat (GoG). Its main goals were to deliver transformational solutions to its citizens through Common Service Centers (CSCs) offering a range of services to villages including the electronic issue of certificates of birth, death, income, caste, domicile, property, residence proof, agriculture, tax collection, marriage, family information and land ownership. These documents are electronically issued, managed and stored thereby empowering the citizens as they provide for ease, speed[16] and security which was lacking earlier.

Due to adoption of Adobe Systems Incorporated, over 18,000 *Gram Panchayats* across Gujarat installed Adobe Acrobat for the electronic issue of vital citizen certificates and other official documents under the e-*Gram* Project. For the digital transition from paper based system, Adobe provided training (live sessions and video-on-demand) to the stakeholders in rural areas. This helped bridge the digital divide between urban and rural Gujarat by providing citizens access to digital information for all government documentation.

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[15] *See supra* note 2, at 20.
[16] The e-*Gram* Project has reduced time for delivery of services from days to minutes for millions of villagers in India.

The e-governance project backed by the GoG has helped in the effective and quick redressal of grievances that previously took a long time to resolve. This is because it provides for immediate access to necessary documents and information. E-governance enables governance at every level, e.g., the e-*Gram* initiative provides all the basic amenities available in big cities to villages. This reduces need of the citizens to migrate to urban centers for service delivery especially delivery of documents as the same can be done at the *Gram Panchayat* level making life simpler.[17]

2. Rajasthan

E-SANCHAR (e-**S**peech **A**pplication through **N**etwork for **A**utomated **C**ommunication, **H**elp and **R**esponse), is an innovative e-governance application by the Government of Rajasthan (GoR) and OneWorld Foundation-India that brings real benefits of social sector programmes to the poor segments of society. E-SANCHAR integrates mobile/telephony with information technology for generating voice calls for the timely transfer of information to rural citizens. Specific target groups include the elderly, physically challenged and widowed persons. The application integrates data migration, text to speech in Hindi, automatic dialing and communication of citizen centric government advice, and information in the form of fixed as well as variable voice messages to beneficiaries. The project facilitates a reality check whilst doing away with intermediaries between the government and the target groups. It further harnesses and synergizes individual expertise and partner organizations to facilitate citizen centric information and knowledge. This therefore provides governance delivery at the grassroots through ICT innovation and outreach.[18]

Its main advantages are:
- Timely communication to citizens about their pension payment orders (PPOs)/payment/releases.
- Brings information delivery at the doorstep of target beneficiaries.
- System removes intermediaries.
- Removal of confusions/anxiety of payment/transaction cost.

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[17] *Adobe Project in India to Deliver Timely Government Services*, http://southasia.oneworld.net/news/adobe-project-in-india-to-deliver-timely-govt-services#.UQjATyLKPYM (last visited Jan. 29, 2013).

[18] Kalyan Singh Kothari, *Indian State Rolls Out E-sanchar for Better Governance*, http://southasia.oneworld.net/news/indian-state-rolls-out-esanchar-for-better-governance#.UQjW_SLKPYM (last visited Jan. 29, 2013).

- Information flows over a telephone/mobile network which has a much larger penetration in rural areas as compared to Information Technology (IT).
- Information flow also presents the humane face of administration and helps build trust and faith in government.
- Voice call does away with the problem of illiteracy which is quite common in this age group and gives a personalized touch of administration.
- Greater transparency, responsiveness and accessibility.
- No substantive extra burden on treasury offices or existing process.
- Due to the above stated reasons, citizens feel that government is concerned about their welfare and cares for them and enhances the dignity of the target group in the eyes of the local community.[19]

Legal Dimension of E-governance/E-government

E-government initiative is dream come true in the Indian scenario because of the Public Private Partnership (PPP) model that acts as a back bone. At the initial stages e-governance was resorted to only for providing facilities but did not have any regulatory dimension. The regulatory mechanism took time to be established and now it exists in many spheres of governmental activities. Regulatory means creates rule of law and legal norms for regulation of a system. E.g., RFP request for proposal (RFP) documents that acts as inviting offer for creating contractual obligations and would work as having a binding, and legally admissible documentary evidence.

Regulatory means creating rule of law/legal norms and policies, viz.:
- RFP documents.
- E-governance applications.
- Inter and intra governmental e-governance policies.

Institutes/bodies/personnel involved in e-governance must follow established principles of law while creating, hosting and disseminating e-government records, viz., protecting right to privacy, enabling citizens to exercise right to know, right to be heard and similar natural justice principles which are fundamental and inalienable in administrative processes.

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[19] *E-speech Application through Network for Automated Communication Help and Response Integration of IT with Mobile Telephony,* http://www.nisg.org/knowledgecenter_docs/A03060023.pdf.

RFP documents are used in administration for parties to participate in bidding process and other administrative actions and decisions that require people to submit proposals. The problem with RFP is that many times it lacks legal clarity regarding commercial risks and practices for which it is essential to have legal coverage to deal with the risks. Therefore, RFP must have functional and technical specifications, commercial terms and bid formats and finally legal specifications for legal coverage. Legal coverage and specifications means definitions, scope and terms of agreement, right and responsibilities with respect to digital and physical assets, terms of payment and invoice procedure, tax liabilities, confidentiality and non-disclosure of data, governance structure, change and control procedure.

E-government is a step towards better administration by facilitating transparent, speedier and non-hierarchical system of governance. Better administration leads to better management of delivery of government services.

With respect to statutory provisions in India, Chapter 3 of Information Technology Act, 2000 (hereinafter the IT Act) gives a legal recognition to e-governance. Sections 4-10 including 6A highlight the extent of e-governance and rights conferred by the IT Act to:
- the government,
- e-governance service provider,
- the individual.

These provisions give legal recognition to e-records, electronic signature, electronic delivery of services, retention of e-records, and dissemination of information regarding electronic form, rules, regulation, order, bye law, notification etc. in electronic gazette.

Professional Bodies for E-government Initiatives

1. Computer Society of India (CSI)
Certain initiatives for e-governance by use of ICT have been by establishing professional bodies such as CSI who have recommended various modules for ICT for rural India. CSI considers e-government to be an inescapable need for the upliftment and benefit of the rural population. It has also acknowledged the fact that as compared to the urban masses the rural masses are eliminated from the benefits of ICT technology.

2. National Knowledge Commission (NKC)
The NKC gave several recommendations with respect to e-governance. Prominent among them are reengineering of

government processes in 21st century, replacing of old controlled and mistrusted regime of British *Raj* with decentralized and devolutionary powers towards the rural masses and at the grassroots levels.

According to the NKC, e-governance by the government will provide for traceable records, improved enforcement and individual performance, increase accountability, efficiency productivity as well as transparency of policies and process.

3. Administrative Reform Commission (ARC)

ARC in its 4th report, on fighting corruption, stated that the introduction of information communication technologies, e-governance initiatives and automation of corruption prone processes in administration have succeeded in reducing corruption. E-governance is the logical next step in the use of ICT in systems of governance in order to ensure wider participation and deeper involvement of citizens, institutions, civil society groups and the private sector in the decision making process of governance. There have been several successes in introduction of e-governance. But the greatest challenge has been their replicability and up-scaling. There are very few examples of e-governance with a nationwide impact (e.g., the railway reservation system).

Hurdles in e-governance include the lack of good infrastructure and the inadequate capability of the personnel which have proved to be major bottlenecks in the spread of e-governance. Another hurdle is non-familiarization of departmental officials with the relevant processes and their capabilities.[20]

4. National e-Governance Plan (NeGP)

NeGP's vision is to make all governmental services accessible to the common man in his locality through common delivery outlets, and ensure efficiency, transparency and reliability of such services at affordable costs to realize the basic needs of the common man.

Gender Focus of E-government Projects

Deliveries of health services in remote villages and rural areas through ICT are some of the special programmes geared to women's needs. ICT mechanism can be used to generate greater awareness among women and child, and health care by improving the mobility of

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[20] *Second Administrative Reforms Commission Fourth Report*, http://arc.gov.in/4threport.pdf.

medical and extension services to poor women. In fact e-government initiatives view women as special category of service recipients with unique needs and preferences.

ICT with reference to Auxiliary Nurse Midwife (ANMs): The ANMs can use personal digital assistants (PDAs) to record service data on mother-child health care and family planning for the purpose of increasing efficiency in data collection and storage by streamlining the actual delivery of service to the recipients.

Gyandoot is a project to help widows from small towns to receive pension payments.

However, electronic delivery of services by governments is largely confined to regulatory agencies such as issue of certificate and licenses, and tax collection and very few examples of e-government with reference to health and educational services are being delivered through the use of ICT.

Therefore, there is scope to improve on this front by conscious incorporation of women friendly policies and practices in government. Even if there are few such schemes/projects, the number is almost negligible. E-government projects, meant to benefit women, can succeed provided women are consulted and involved both at the design and implementation stage. Their concerns and requirements should be addressed through well designed projects and schemes. At the same time it is essential on part of government to create awareness of these initiatives through use of IT. The role of the nongovernmental organizations (NGOs) and political leaders/representatives is most essential at this juncture so that the empowered are in position to exercise their rights.

National Rural Employment Guarantee Act, 2005 (NREGA): Possible Areas of ICT Interventions

1. Need and importance of ICT in the implementation of NREGA

ICT intervention in the implementation of NREGA[21] is important because:

  i.   ICT ensures transparency and helps in information dissemination.

  ii.   ICTs tool(s) is/are required as the size of the programme is very large-geographically, financially and in terms of the beneficiaries.

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[21] *ICT in NREGA Implementation*,
   http://www.nisg.org/knowledgecenter_docs/D08010003.pdf.

iii. ICT facilitates online monitoring and evaluation of the programme. The timely feedback will help in timely corrective actions.

iv. ICT tools help in social audits whereby the local bodies and citizens may actually audit the programme at their end. ICT can play a definite role in every phase of the implementation of the NREGA.

The following could be the major areas for interventions.

2. Communication and mobilization
i. Some of the ICT interventions that can be possibly used for communication and mobilization include community radio, television, public address systems, *panchayat* websites and the internet to publicize the ICT based initiatives.

ii. Information kiosks that have been set up in some villages and the 100,000 Common Service Centers being implemented by the Department of IT can be used as focal points to disseminate information on the scheme.

3. Planning phase
To create a database of durable, productive, labour-intensive works at the *panchayat* level it requires mapping out of socially productive and durable assets/infrastructure which can be created in the respective zones/clusters. Issuing of job cards, digitization of muster rolls, persons employed, their output, wage rates, working hours etc. can also be available for verification by the *panchayats*, peers and the community through the use of ICTs. The use of Smart Cards/Biometric Cards can be introduced to identify and track every beneficiary in the region.

4. Execution of works
i. Works Management System with authentic records of the attendance at the worksites with simultaneous updating of the employment records is necessary. Works identified in a particular block to be taken up under the scheme must be available for viewing and measurement by all *panchayats* within that block.

ii. Work Flow Automation System may be introduced since the approval of works, allocation of works to an implementing agency etc., must be sanctioned by the Programme Officer or such local authority (including the *panchayats* at the district, intermediate or village level).

iii. Disbursement of wages and unemployment allowance.

5. Monitoring

   i.   ICTs provide for ensuring that the members of the designated rural household are only availing the guarantee of 100 days of employment, and their wage employment rights are not being misused by others.

   ii.   Biometric systems like fingerprint recognition may be used as potential solutions to address this issue. A fingerprint recognition based time and attendance system at the frontend backed by a comprehensive **Computerized Management Information Systems (CMIS)** at the back-end may be able to address the issue.

   iii.   The NREGA makes it compulsory for the daily wages to be disbursed within a specified time limit. It therefore becomes necessary that this information is captured and available for public viewing through the CMIS.

   iv.   Information such as data pertaining to households, number of days of employment provided, reports on the assets created, financial information like allotment of funds by **Ministry of Rural Development (MoRD)** to the states, and eventually to the implementing agencies, tracking wages paid to the workers and all other aspects of implementation must be captured and made available to view for people in the hierarchy and the public at large. This is also required by the Right to Information Act, 2005.

   v.   Geographical Information System (GIS): The use of GIS can greatly enhance the monitoring of the NREGA. Digital maps can be made available for viewing to show the assets that have been created under the scheme and provide for the assessment of the quality of assets created.

6. Grievance redressal system

   i.   Citizens can register grievances at all *panchayat* levels and in offices of the Programme Officer and the District Programme Coordinator. This information must be made available online.

   ii.   Citizens must be able to track their grievances online. The list of issues above is indicative and not exhaustive in nature. Other issues require policy, legislative or administrative initiatives.

7. Software for project implementation

The Government of Andhra Pradesh is a forerunner in deploying ICT in the implementation of NREGA. In collaboration with Tata Consultancy Services (TCS) a software package has been developed which integrates various processes viz., enrolment of wage seeker, monitoring of work execution, management of wage and material payments, etc., into a single framework. Computers with this

software are installed in all the 656 *mandals* across 13 districts of Andhra Pradesh. Simplified input data sheets which can be filled by a non-technical person are designed for all these types of works. Estimates are generated by the computer immediately after information in the input data sheet is fed. Thus this process demystifies the conventional estimate preparation, and enables any common person to understand the process of estimate preparation.

The website, *www.nrega.ap.gov.in*, enables any user to view the following:
- job cards issued relating to any *panchayat*,
- the shelf of works,
- progress of works,
- estimates of the works in progress,
- wages paid to the workers,
- paid muster rolls.

To supplement the efforts of various states software has been developed by National Informatics Centre (NIC) which is being used in different states. The website has 7 sections:
- for citizen,
- for panchayats (at all three levels),
- for worker,
- for other implementing agencies,
- for Programme Officer/District Project Coordinators,
- for states under MoRD.

Many other solutions have been proposed by various agencies but unfortunately they have not yet reached the implementation stage.

Some of the unachieved on paper agendas are as follows:

i. Short message service (SMS) based fund transfer
   To enable speeding up the process of fund transfers an innovative   solution using mobile phones has been suggested. It works as follows:
- Site Assistant Engineer sends the day's muster roll of NREGS benificiaries by SMS.
- Village Payment Agent receives the SMS.
- Village Payment Agent makes payment to NREGS beneficiaries based on muster roll received.
- A second SMS about payments made is sent to Panchayati Raj Department's Banker.

- On receiving the SMS the Panchayati Raj Department's Banker transfers funds to Village Payment Agent's bank account.
- SMS database will be integrated with NREGS web portal to generate weekly payment details.

ii. Using rural automated teller machine (ATMs)

The low-cost rural ATM (*Gram* teller), being developed by Vortex Technologies can be implemented if the bank account transfer mechanism is put in place. The ATM works with both used and new notes and has a fingerprint based authentication system. It works on very low power with a built-in battery back-up, and does not require air conditioning.

iii. Using biometrics

An interesting pilot in using biometrics for authentication of workers was carried out on April 27, 2006, at Jakulla Kutha Palli (J.K. Palli, a remote hamlet of about 200 families, under the Amaduguru Mandal, about 95kms from Ananthpur District Headquarters). Reportedly the biometric tracking was 100% successful, with no failures, using a standalone biometric device and a 12V car battery, as there was no power supply for the whole day in the entire *mandal*. The biometric authentication, was not without its own attendant problems, as some of the women, come directly from work, with cement/lime mortar coating on their fingers. Some fingers were very rough and a second finger print registration had to be taken. But 100% success rate was achieved, out of which, 80% in the very first attempt and 20% in the second attempt. Around 50% of the beneficiaries are women. The minutes of the meeting of the local committee for payment disbursement in J.K. Palli elaborates the details of biometric tracking and payment.

iv. Synergetic approach[22]

There are other projects like Common Service Centres, e-*panchayats*, etc., which are planned to be implemented in the coming months and years. In almost every state computers are slowly but surely percolating down to the *panchayat* level and it is only a matter of time before the state-Wide Area Networks are also available at the *panchayats'* doorsteps. The use of ICT in NREGA implementation should be seen in synergy and complementary to all these initiatives that are contemplated or in progress. Then only can the full potential of ICT be harnessed for empowering the common citizen.

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[22] *ICT in NREGA Implementation*,
http://www.nisg.org/knowledgecenter_docs/D08010003.pdf.

Various Initiatives with reference to E-governance in India

- Aarogyasri Health Insurance Scheme,
- Gyan Vinimay (e-classroom),
- Online filing of RTI complaints,
- Implementation of the Indian National Tsunami Early Warning System,
- Old Age Pension Payment Monitoring System, etc.

Indian Development Gateway (IDG) website *www.indg.in* covers six projects with reference to e-governance which are: agriculture, primary education, health, social welfare, rural energy and governance.

Concluding Remarks

For implementing any e-governance project successfully certain guidelines in nature of citizen/beneficiary centric delivery mechanism, reengineering process initiative for shifting from manual to automatic system and capacity to adjust according to variations and needs are the essential requirements. Good governance is attainable only if there are participation of the stakeholders i.e., citizens in political process. Digitalization is an active agent for democratization of information. With optimum use of ICT by the government to carry out its functions and responsibilities, there would be transparency in their governance, connectivity and accessibility of the beneficiaries would increase and would remove middlemen who were mostly responsible for corruption and illegally diverting the funds from reaching the needy and deserved.

A country would be ready to incorporate e-government when it acquires certain degree of e-readiness or in other words techno savvy behavioral pattern. There must be training and awareness programme so that technology is made user friendly and also that there is enabling legal framework to encourage and support e-governance by the government. E-governance projects must be provided in local languages and in a format easy to understand by an average common man. To facilitate greater use of ICT it is essential that the government records are computerized. The legal frame work must promote the boon of ICT for betterment of human beings so that life and liberties are attained to the fullest extent for good cause and to preserve peace and harmony in society. Development must reach the lowest strata of the society and digital divide must be the target for elimination by use of legal machinery.

Last but not the least in the wake of 21st century with globalized character of the world order, it is most essential that science and technological advances do not undermine human rights and ethical norms (right to privacy and security of data, legal sanction of new forms of storage and archiving and laws that accept paperless transactions, right to live with dignity, right to life and liberty, right to know and various shades of cardinal rights in the context of practical situations) of the least affluent and underprivileged, in fact everybody must get his/her due as per his/her needs for building an egalitarian democratic society.

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