10.1 Development Phases of Generality Model.

The three main target groups that can be distinguished in IMD are government, citizens and businesses. Most Governments start by delivering online information, but public demand and internal efficiency soon requires more complex services. In some cases the public demand is the driving force, in other cases, cost saving aspects for the government is leading. According to that, the suggested model gets matured gradually in four phases.

<table>
<thead>
<tr>
<th>Information</th>
<th>Presence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction</td>
<td>Intake processes</td>
</tr>
<tr>
<td>Transaction</td>
<td>Complete transactions</td>
</tr>
<tr>
<td>Transformation</td>
<td>Integration &amp; change</td>
</tr>
</tbody>
</table>

Table 10.1
In the first phase, presence on the web, providing the public (G2C & G2B) with relevant information gets operationalised. The format of the early websites of the department as well as boards and corporations, which are operational arms of the department, served the purpose of presence. The value to the public is that department information is publicly accessible; processes are described and become more transparent, which improves democracy and service. Internally (G2G) the department started disseminating static information with electronic means, such as NICNET & GSWAN both on Intranet and Internet.

In the second phase, the interaction between the department and the public (G2C & G2B) is stimulated with various applications. People can ask questions via e-mail, use search engines, and download forms and documents and save time. In fact the complete intake of (simple) applications is done online for all 24 hours of the day. In normal manual operations, this would have been possible only at a counter during operating hours. Internally (G2G) departmental offices use LANs, intranets and e-mail to communicate and exchange data. Examples are GR Book online and Form book online web Applications of GOG.

With phase three, the complexity of the technology is increasing, but customer (G2C & G2B) value is also higher. Complete transactions can be done without going to an office. Examples of online services are registration of SSI, MSI or LSI unit, applying for incentives, e-commerce applications of state handloom and handicraft etc. Phase three is made complex because of security and personalization issues. e.g. digital (electronic) signatures will be necessary to enable legal transfer of services. On the business side, the department is starting with e-procurement applications. In this phase, internal (G2G) processes have to be redesigned to provide good service. New laws and legislation to enable paperless transactions within the department needs to be defined and operationalized.

In the fourth phase all information systems are integrated and the public can get G2C & G2B services at one (virtual) counter. One single point of contact for all services is the ultimate goal. The complex aspect in reaching this goal is mainly on the internal side, e.g. the necessity to drastically change culture, processes and responsibilities within the offices of IMD (G2G). Government employees in other departments have to work together in a smooth and seamless way. In this phase cost savings, efficiency and customer satisfaction are reaching at highest possible level. Since the Government of Gujarat has taken Framework Approach in implementation of IT policy, the standardization in H/W purchases and LAN / WAN establishment has been done. Accordingly, connectivity to various offices functional under IMD through GAWAN both in Ahmedabad, Gandhinagar as well as District and
Taluka places is successfully implemented. The S/W policy of state government has helped the department in identification of the most appropriate Solution Provider for all the offices under IMD and the user requirement study, system study and development of the solution (in some cases) have already under way. Using the web site development policy, most of the offices under IMD are covered for putting their information in public domain and in some cases, the applications and transactions. Along with TSPs, two most important over arching projects of GOG, E-Data bank and Integrated Workflow and Document Management System (IWDMS) also cover IMD. Initially five Services of IMD will be available in public domain through E-Databank portal. The Documents Flow and File management within and across the departments will be covered through IWDMS project. The E-Databank provides G2C interface and IWDMS increases internal efficiency of the departmental functions.

The attributes identified and derived from the existing projects, systems and applications currently functional in IMD and its various offices described are to be analyzed for the suggested Generality Model (GM) w.r.t. Integrated Information Management System (IIMS).

10.1.1 Model – 1: Broadcasting / Wider-Dissemination Model

This model is the first step to more evolved form of Digital Governance. It is also the most crucial one as it catalyses free access and flow of information in the society which is the foundation for better governance. This model could be especially useful in minimizing occurrences of un-informed decision-making through correction of information failures at all levels. This model is used to create an environment for enhanced participation of citizens in the governmental processes.

The model loses its effectiveness in cases where the free-flow of information is restricted or is not objective, and in cases of Optimal Ignorance. Optimal Ignorance occurs when the citizens and key decision-makers take injudicious decisions not in the absence of availability of enough information but because of disregard of available information. Tight governmental control and bids to censor the content and use of ICT could prove to be the bane of this model.

10.1.2 Model – 2: Critical Flow Model

This model is more directed, and therefore more evolved than the Broadcasting / Wider - Dissemination Model. By focusing on the critical aspect of information and its likeable users, it focuses upon the weak aspects of governance and decision-making. It informs the people about cases of State Failure and bad governance to build up a case for concerted action. At the same time, the model exerts indirect pressure
on the concerned governance institution / policy-making body to move away from optimal ignorance level to reform, and take into cognizance the interest and opinion of the masses in decision-making processes.

The model may not work in cases where the governance mechanism does not foster public debates and opinions, and ensures all information of critical nature. The government also ignorance occurs when injudicious decisions are taken not in the absence of availability of enough information but because of disregard of information by the decision-makers.

10.1.3 Model – 3: Comparative Analysis Model

Developing countries could very effectively use this comparative model to their advantage as ICT opens their access to the global and local knowledge products at a relatively low-cost. The model is very much based on the existing sets of information and the ability to analyze and bring out strong arguments or self-explanatory graphics from the analysis.

There is a vast scope of application of this model for judicial advocacy as Landmark / Key Judgments of the past could be used as precedence for influencing future decision-making. Further, the watchguard organizations and monitor-groups could find this model of immense use to track the governance past record and performance and compare with different information sets.

The model however becomes ineffective in absence of a strong civil society interest and public memory, which could force decision-makers into making judicious decision based on existing learning.

10.1.4 Model – 4: e-Advocacy /Mobilization and Lobbying Model

This model has grown since the onset of debates on World Trade Organization (WTO) for the Seattle round in 1999, which saw the formation of several virtual communities all over the globe to put forward the concerns of developing countries in the WTO agreements. The display of a unified, informed civil society force at Seattle was in some ways a result of the intensive interaction and exchange of opinion happening over the virtual networks months prior to this WTO summit. There were a lot of concerted actions at the Regional level as an end result of such discussions, which built into the global movement.

The model enhances the scope of participation of individuals and communities in debates, which affect them and build up a global alliance. A community may no longer find itself isolated but may find an
ally for mobilizing effective action through this model. It also creates an effective deterrent for governments and decision-making bodies who are responsive to people's opinion to be watchful in their actions. On the other hand, the government could use this model in a positive manner to encourage public debates on issues where the opinion and expertise of civil society is of great importance and could become one of the finest tools to aid good governance practices (especially in Developing Countries).

10.1.5 Model – 5: Generality Model (Integrated Information Management System)

Generality Model in context with IIMS is immerged as Industry Portal having Citizen, Business and Government reference. It addresses content applications databases and services.
The Generality model is the most appropriate in IMD as it transforms the form of Governance forms from "representative" to "individual based" and from "passive" to "pro-active". As the model, directly connects individuals with officials in the government, the impact is immediate, and puts greater access and control over governance mechanism in the hands of individuals. This process makes the government more responsible and accountable to its citizens. The model firmly relies on the interactive applications of IT and therefore is a technology and cost-intensive model that will require a transition period before being adopted on a wider scale. It would also require elemental familiarity of IT among the citizens to fully benefit from this model. Nevertheless, the diminishing costs of IT and the advantages offered by this technology would certainly catalyze the penetration of this model. Intermediary organizations and Knowledge Net workers will have a tremendous role to play in widespread replication of this model.

10.2 Implementation Issues

A close analysis reveals that there are five fundamental issues to be addressed. The issues and characteristics of IT projects are critical. They need to be identified and discuss.

1. Financial implications
   - Political understanding
   - Funding

2. Planning & legal framework
   - Recommendations by The National IT task force
   - IT ACT 2000 (Amendment in Laws)

3. Technological issues
   - Hardware and Software
   - Intranet and Internet availability
   - Standardization.

4. Employee and other work force training
   - Scope of training
   - Time frame & Cost

5. Acceptance of the Model
   - Public grievances rural services
   - Public information Commercial sector Government itself

269
Implementation should be done in a phased manner. The sub issues associated with this are Technical issues, standardization issues, social issues, Legal issues, funding issues.

10.2.1 Financial Implications

Political Understanding

Politicians should be convinced on the benefits of IT in the public interest. All politicians should come up from the party line and think for the betterment of Nation.

Funding

Leveraging of ongoing projects can be made more cost and value effective with the use of IT in a modulated fashion without any critical incremental costs. The Private sector resources have to be also carefully dovetailed with their commercial interests and those of the Government to provide Value Added Services. The Kiosks by themselves can bring in little in terms of better delivery of Services, unless the same are made economically viable and of demonstrated use to the Stakeholders, viz the Public and the Citizenry.

10.2.2 Planning & legal framework:

IT projects demand amendments to existing laws besides that we need what is called as Cyber laws. Cyber laws should be available to the public as early as possible so that the IT systems and information documents stored in the systems will have the same legal validity as the documents stored today on paper. Indian parliament has already passed the IT bill so Cyber laws are in place now.

Amendment in Central Laws

- Indian Evidence Act
- IPC, CrPC, CPC
- CONTRACTS, TOR
- Taxation related
- Urban development
- Utilities
- Motor vehicle Act
- Banking Acts
• Consumer Protection laws

Amendments in State laws

• Agricultural land management and revenue laws
• Urban land management laws
• Commodities Act
• Taxation related
• Other revenue and Utilities acts

Identification of Government Certification Authorities

To identify Certification Authorities provide digital certificates that help to create an online identification and security system for the Internet allowing individuals, corporations and government organizations to conduct transactions and communications with full security and confidence. Some of the Certificate enabled applications are online banking, cyber-shopping, electronic data interchange (EDI), secure Electronic mail, government applications and services, online health services etc. GNFC in Gujarat is authorized Certification Agency (CA).

10.3 Technological Issues:

There are important points, to be addressed here: Hardware issues, software issues, Internet, Standardization.

10.3.1 Hardware Issues:

Hardware industry is moving at a very fast pace, machines with more and more powerful chips are striking the market. So it becomes very difficult to decide on the machines. Plus initial cost of setting up the entire infrastructure requires huge investments so one of the solutions can be leasing of computer with element of up gradation. This would reduce the initial heavy capital investment. If it were combined with provisions for up gradation by periodic replacement, it would have changes in technology. The Finance Ministry can substantially bring down the lease charges by extending the concession under the Income Tax Act, so that any investment made in IT systems would be eligible for 100% depreciation in the first year itself. The leasing companies can be persuaded to provide these systems at an interest rate of 12% (if not less), which would be an attractive rate of interest. Once this is done the departments could proceed with the leasing of computers in a big way. There are already a number of agencies such as Infrastructure Leasing and Financial Services (ILFS) and Infrastructure Development Finance Corporation (IDFC) and other financial
institution, which would be in a position to fund the leasing to the departments.

10.3.2 Software Issues:

Since Applications will be running on different hardware as well as software platforms. The applications developed, as part of the total solution should consider all these aspects. The end users of these applications range from common man to government officials / staff they should have good GUI. As far as possible the applications should be web enabled. Browser issues and reliability should be the main concerns.

A number of the organizations both in the Centre and the State have taken commendable initiatives to develop hardware and software platforms to address the challenge of IT. At the central level in particular, the C-DAC, CMC and a number of other institutions are noteworthy. The issues, which have been consistently highlighted in these efforts, are:

- Use of IT for delivery of public services has been intensely employed in developed economies for quite some time now.

- Therefore, as such, there exists a large inventory and repository of appropriate technological platforms with which to perform public functions in a cost and time effective manner;

- However due to difficult availability of these technology applications on a common platform, efforts are being made in various Organization / Ministries / Departments are often at cross-purposes;

- Therefore, instead of having synergic initiatives, we have efforts, which cause financial, technical and organizational mismatch.

The IT initiative would have to address these Technology Issues / Objectives by:

- Identifying functional areas in every Government organization that need to be taken up for EG objectives.

- Identifying the appropriate hardware platforms and software application packages for cost effective delivery of public services.

- Making this knowledge repository widely available through appropriate Demo-Mechanisms.

- Offering a Basket of these models to the States, Department both in the Center and the State, which could be suitably customized as per location and work specific requirement. Towards this end we
envisage to have State level models, District level models and Ministry / department level models;

- This offer is to be supplemented by incubating and initiating efforts in this direction by various organs of the Govt.
- Amendment in State laws through study and consultation.

10.3.3 Internet

In this Internet era would is running after "Big B" i.e. Big bandwidth. Since EG would a Government Network of Department Network as well as state government Network. Bandwidth issue should be taken up on top priority, Present BSNL infrastructure and working style is not adequate to provide 24 - hour links all over the country. Most of the places in India don't have leased line facilities until and unless we don't improve on our connectivity infrastructure EG would be a distant dream for us. Reliable Net connectivity should reach to every village with Panchayat.

10.3.4 Standardization

E-Governance demands standards in all Some of the key areas are:

- Data encoding (ISCII or UNICODE)
- Application logic for common horizontal application.
- User interfaces.
- Data dictionaries.

10.4 Issues related to employee

Perhaps the most important aspect of computerization and spreading of IT is bringing a change in the mindset of the government servants who have been accustomed to work only in the manual mode. It is necessary to train all employees in basic computer usage. There should be workshops and seminars for all levels. To encourage them rewards in the form of increments should be given based on their skills.

Periodic training programs should be arranged for employees to make them conversant with use of new technologies and use of Internet services like: e-mail, www, ftp etc.

An Interdepartmental group under the Department of Administrative reforms can be formed to prepare common guidelines on different aspects of acquiring IT items, evaluating execution of such contracts etc. Each Department/Ministry should form a standing panel of IT consultant for seeking advice on various technical issues. In fact it is possible for some of the
mentors and champions to lead the process after making it successful in one department to another.

10.5 Acceptance of E-Governance

Success of any new Technology / paradigm / working model depends upon its social acceptance. If we want EG to be socially accepted then lot of awareness should be created in public by conducting some awareness camps. This would at least help to remove the Technology phobia from the public's mind. Only awareness programs would not help because we should see the percentage of computer literacy in the country. Proper planning should be done to increase this percentage.

To boost the EG most of the applications developed should allow its end users to use Natural Languages. This is a very important factor. Organization like C-DAC is doing a good amount of work making the Natural languages available on Desktops.

Time frame for implementation is an important factor. It should not the be the case that the implementation are coming up to late say 5 years down the line or so. The department, which should be first implemented as part of EG is also main concern. Government department with maximum interaction with the public must be identified for the use of IT.

- Information Kiosks:

They are the real devices with which most of users of EG would use to get the required information. Communication of data to public i.e. accessibility and retrieval of data by public through citizen IT interface (Information Kiosks) in Public Place such as shopping centres, post office, railway station, libraries. PCOs (Upgraded to manned public access terminal) selected STD / ISD booths at prominent places can be converted into information Kiosks.

10.6 Analysis of Implementation Issues with E-Governance Models.

The implementation issues of e-governance as described above are to be analysed for the above models. Following table shows which model satisfies, in what percentage, the implementation issues. i.e. How this models address the issues and which model more effective for satisfaction of issues. So that it can be derived for the suggested model, how it addresses the issues and meets the successful requirement.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Implementation Issues</th>
<th>M-1</th>
<th>M-2</th>
<th>M-3</th>
<th>M-4</th>
<th>Suggested Model IIMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Financial</td>
<td>1.0</td>
<td>2.0</td>
<td>3.0</td>
<td>2.0</td>
<td>4.0</td>
</tr>
<tr>
<td>2.</td>
<td>Legal Framework</td>
<td>3.0</td>
<td>3.0</td>
<td>2.0</td>
<td>2.0</td>
<td>4.0</td>
</tr>
<tr>
<td>3.</td>
<td>Technological</td>
<td>1.0</td>
<td>3.0</td>
<td>2.0</td>
<td>3.0</td>
<td>5.0</td>
</tr>
<tr>
<td>4.</td>
<td>Employee issue</td>
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<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>5.0</td>
</tr>
<tr>
<td>5.</td>
<td>Acceptance of E-</td>
<td>4.0</td>
<td>2.0</td>
<td>4.0</td>
<td>3.0</td>
<td>5.0</td>
</tr>
<tr>
<td></td>
<td>governance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 10.3

Here, different IT models are given points for their satisfying level for a particular implementation issue. The average of other models for the addressing the implementation issues is very low as per the above analysis.

The implementation issue 'Financial' is most important for the developing countries and it is depends on the political understanding and so its satisfaction level is assumed as 4.0. The Planning and legal framework for the e-governance projects depends on the performance of the group of the peoples, those implementing the project as well as citizens who get benefit from the project and so addressing this issue will be remain a critical and satisfaction level is assumed as 4.0. The future emerging standards and technology of data authentications and standardization would be satisfied by the suggested model because of the four phase implementation nature of it. The employee training and acceptance of the e-governance issues would be address up to satisfaction level.

10.6.1 Implementing the IIMS

The model presented for IMD can serve as a reference for governments to position where projects fit in the overall evolution of their implementation.

The model can also support governments in defining an e-governance vision and strategy. A vision is a high-level goal, or ambition level, of government regarding the democracy, government and business aspects of e-governance. A strategy consists of plans that translate the vision into SMART (simple, measurable, accountable, realistic and time-related) projects. A good strategy is crucial to keep the speed in the reform and implementation process. Thus, budgets must be available, time consuming legal transformations should be initiated and quick results must be achieved and communicated to all stakeholders, including the public.
10.6.2 Some challenges for development

The following factors have to be taken into account when examining the risk of implementing solutions.

- Political stability (democracy or dictatorial regime)
- Level of trust in government (perception of service levels)
- The importance of government identity (fragmentation or integration)
- Economic structure (education, agriculture, industry or service)
- Government structure (centralized or decentralized)
- Different levels of maturity (weakest part of the chain determines speed)
- Constituent demand (push or pull)

Good approach towards implementation of this model is to combine short-term steps (projects) and long-term goals (vision). Projects will have a more structural value for development when embedded in a vision and supported by appropriate strategy.