

Unit 3

e-Gov Infrastructure, Stages in Evolution and Strategies for Success

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E-Readiness

- **E-Readiness** is the ability to use information and communication technologies (ICT) to develop one's economy and to foster one's welfare.
- Is the ability to pursue value creation opportunities facilitated by the use of the Internet.
- Is a measure of e-business environment, a collection of factors that indicate how amenable (willing) a market is to Internet-based opportunities.
- is not simply a matter of the number of computer servers, websites and mobile phones in the country, but also things such as its citizen's ability to utilize technology skillfully, the transparency of its business and legal systems, and the extent to which governments encourage the use of digital technologies.

e-Readiness: Domains & Clusters

Domains

1. Access

2. Capacity

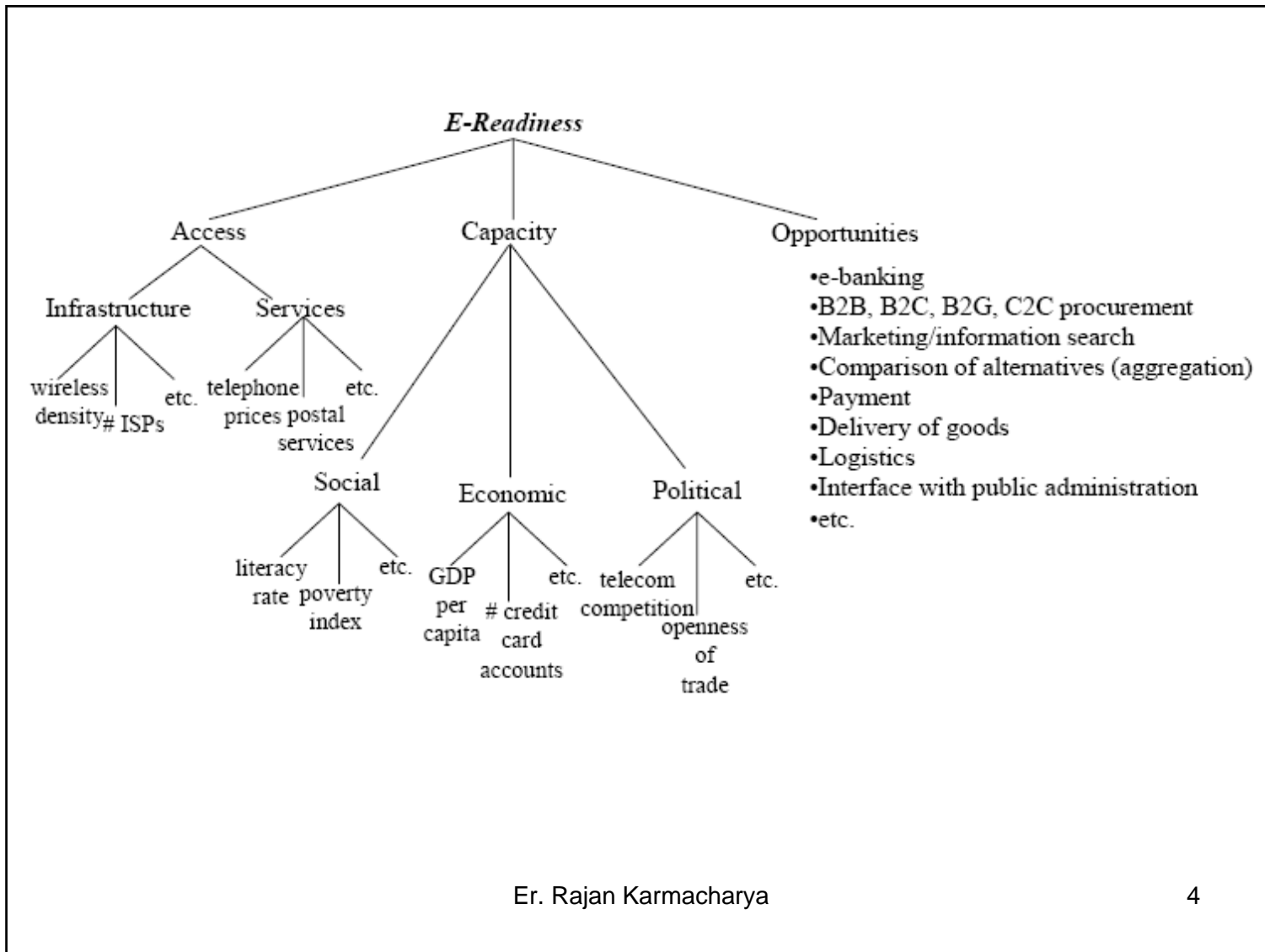
3. Opportunities

Clusters

(a) infrastructure
(b) services

(a) social factors
(b) economic factors
(c) policy factors

(a) opportunity penetration
(b) specific applications



E-Readiness: Infrastructural Prerequisites

1. Data Systems Infrastructure
2. Legal Infrastructure
3. Human Infrastructure
4. Institutional Infrastructure
5. Technological Infrastructure
6. Leadership and Strategic Planning

E-Readiness: Data Systems Infrastructure

- The core of e-governance is e-MIS and holds the entire database of any organization .
- The data that were managed manually need to be computerized or brought into electronic form which means that the preparedness of computerized database or data warehouse is required.
- Data quality and data security are of prime concern here as most of the government infrastructures are not up to the mark in developing countries.
- The major question that arises here is “ Are all the requisite management information systems, records, databases and work processes in proper place so as to provide the quantity and quality of data to support the move to e-governance?”
- This is the core computerization activity of any government process which may take several years to reach this stage.

E-Readiness: Legal Infrastructure

- The manual processes in government are usually obsolete, inefficient and bureaucratic.
- Though they have transformed to computerization practices, they continue to have poor and inefficient performance and this is due to lack of administrative reforms and lack of business process reengineering.
- They lack requisite legislation and legal infrastructure to enable such reforms or reengineering of the existing business practices, rules and regulations within the government at various levels.
- This seems to be accentuated in developing countries while developed countries have been significantly successful in administrative reforms and business reengineering.
- The fundamental question that arises here is “ Are the laws and regulations required to permit and support the move towards e-governance initiatives in place?
- E.g Digital Signature Act

E-Readiness: Institutional Infrastructure

- For any government to implement a successful e-governance project, the required institutional infrastructure must be in place which most of the government lack.
- The government body has to establish a separate IT department which basically coordinates with facilitators for e-government projects within the nation.
- The IT department works out for the hardware selection and procurement, network or software development and implementation and also the training of staff at various levels of the government.
- Many countries still lack the institutional infrastructure.

E-Readiness: Human Infrastructure

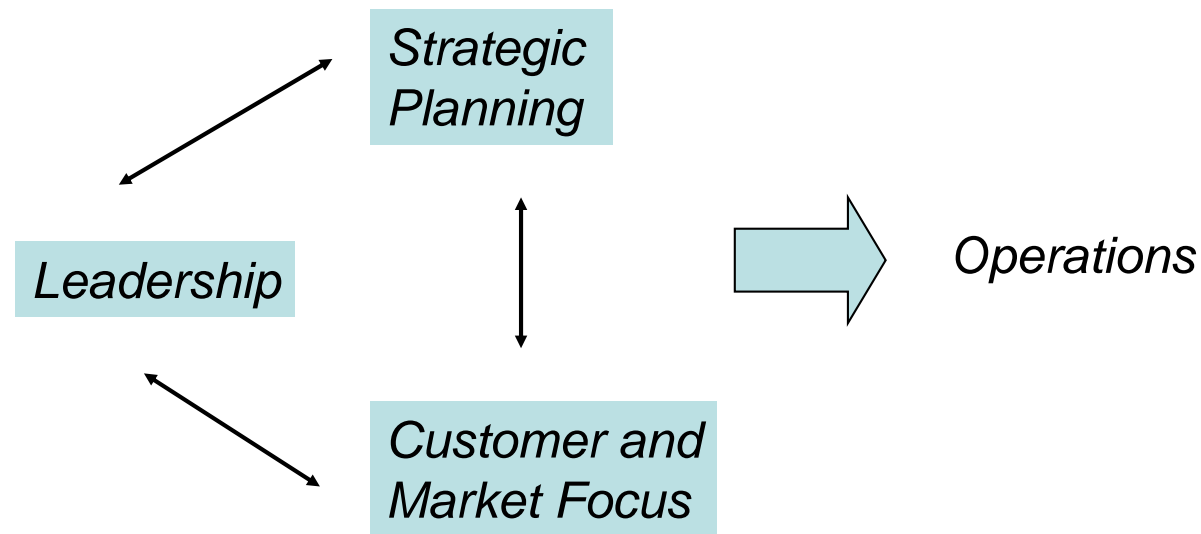
- Human resource development by training is an essential requirement which comes from well trained manpower both technical and non-technical.
- The technical manpower resources are essential for all the phases of e-governance and related information system life cycle comprising systems analysis, design, programming, implementation, operation and documentation.
- Both private and government institutions should play a major role in this regard.
- Apart from technical human infrastructure, there is a need for the crucial training and orientation of user personnel i.e. government staff in e-governance project.
- The government employees and staff who are the stake-holders in all e-government projects as the end users are to be appropriately trained and oriented for change management from a manual government environment to e-governance environment.
- Such training will make them competent and capable of handling e-governance projects at operational level

E-Readiness: Technological Infrastructure

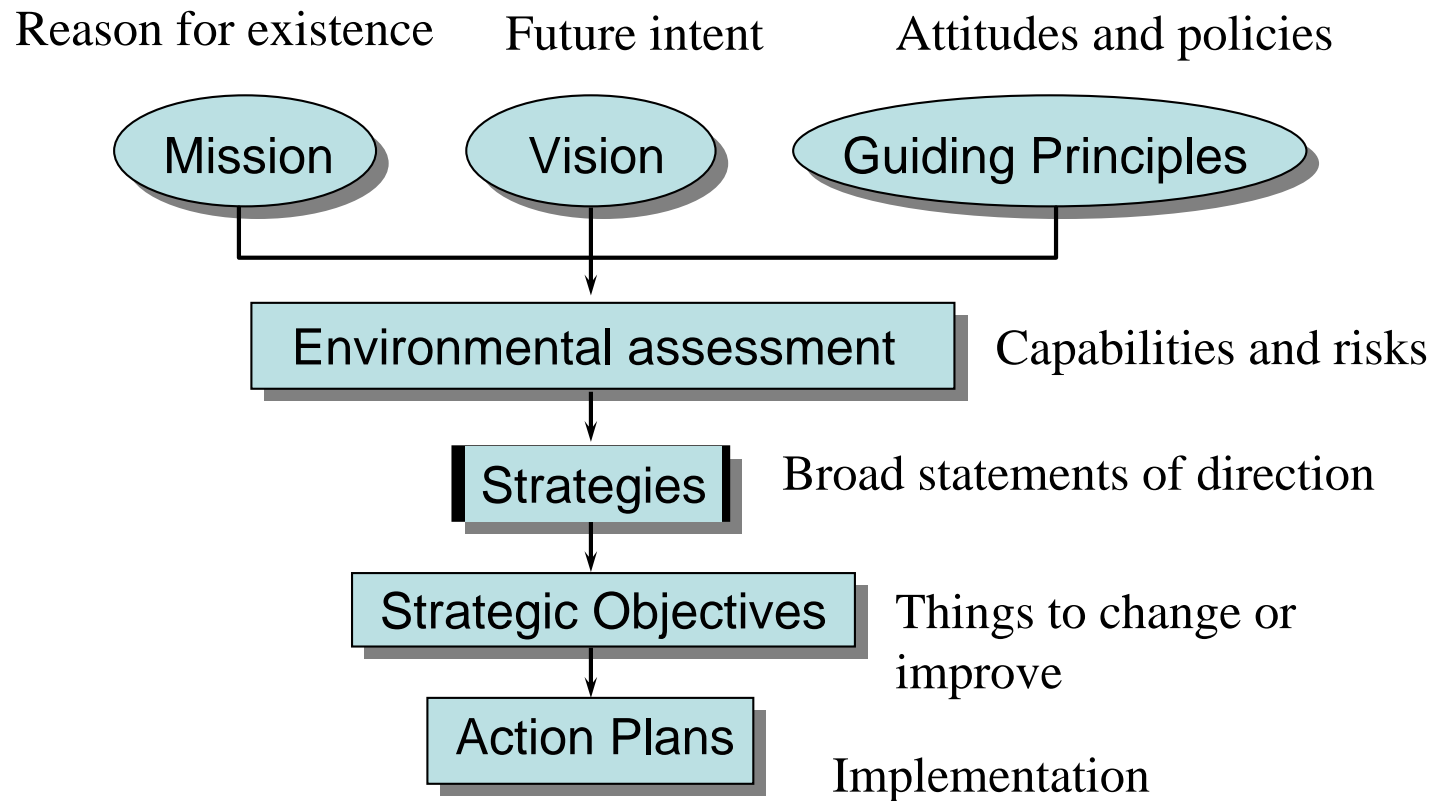
- Technology is fast changing in ICT domain and there is a rapid obsolescence of software as well as hardware which require great financial support time and again.
- Government organizations encounter this situation especially as their procedures to procure hardware or software are very inefficient and slow.
- The technological infrastructure in developing countries including computing and telecommunication is absent. As a result software and hardware may not be compatible.
- The major reasons are
 - cost of technology
 - Adaptability
 - Obsolescence
- This is a serious limitation to e-governance implementation.

E-Readiness: Leadership and Strategic Planning

- Leadership
 - The ability to positively influence people and systems to have a meaningful impact and achieve results.
 - Strategic Planning
 - The process of envisioning an organization's future and developing the necessary procedures and operations to achieve that future.



Strategic Planning Process



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Leading Practices - Strategic Planning

- Active participation of top management, employees, customers, suppliers
- Systematic planning systems for strategy development and deployment, including measurement, feedback, and review
- Use of a variety of external and internal data
- Align short-term action plans with long-term strategic objectives, communicate them, and track progress

Evolutionary Stages in E-Governance

E-governance evolves gradually from the simplest levels to advanced levels and the evolution may not be same in all cases.

- Stage 1: Use of E-Mail and setting up of internal networking
- Stage 2: Creation of Intranet infrastructure for access of internal activities
- Stage 3: Allowing public access to information through Internet
- Stage 4: Allowing 2-way interactive communication with stake holders to enable Internet enabled transactions (including financial transactions)
- Stage 5: Allowing online transactions by the citizens
- Stage 6: Enriching digital democracy
- Stage 7: Electronically integrated or joined government with Legislature and Judiciary

Stage 1: Use of e-mail and setting up of internal network

The most fundamental, cheapest and easiest ICT tool is e-mail. E-mail has now become common in all urban areas and some rural areas. Within the government it is the easiest of all options available for implementation. Official orders to accept e-mail communication as valid have been issued in a large number of government, judicial and legislative organizations. Although e-mail can reach outside organizations via the Internet, most government organizations adopt e-mail for internal messagings.

Due to its informality, e-mail can lead to increased lateral and bottom-up communication.

E-mails break the official hierarchy of communication, as anyone can send to e-mail to any other, breaking the hierarchy and other barriers. They allow person-to-person communication can improve information sharing, exchange, coordination and feedback of information.

However, its limitations are its transparency and security risks of the content, unless used with digital signatures or key encryption. Sensitive and critical messages are still best sent over the telephone or in person. However, with the advent of digital signatures and encryption techniques, it is possible to ensure integrity, security, correctness and non-repudiation of the information sent as e-mail.

The internal networking of various departments of an organization linked to Internet for sending and receiving the e-mail is a prerequisite. Most government organizations have already set up desktops in various divisions and sections and internally connected them all for this purpose.

Stage 2: Use of Internet by connecting internal activities to Internet

While e-mail provides the very fundamental mode of communication, the basic and personal use of Internet from offices and houses is now generally a reality in all urban areas and limited rural areas. Surfing of the web is both a business and pleasure. It has been noticed that most government employees spend a few hours a day surfing the Internet whether for official purpose or personal benefit, or for pleasure. The Internet has inculcated an information culture in the people in general and government employees in particular, to surf the Internet, in general, for all purposes of information retrieval. Thus, all sectors of the government such as Agriculture, Finance, Economy, Planning, Rural Development, etc. can be found to have their presence on the Internet in a significant scale and any government activity regarding any information such as policy statements, strategies, technological or scientific information can be obtained from the Internet for the benefit of all levels of people involved in government. For example, the Andhra Pradesh Chief Minister's Office has set up a group of technical and administrative staff only to research and retrieve information from the Internet from time to time to prepare reports and presentations. Similarly, the office has also set up an official web site giving all activities of the Chief Minister and summary of government activities.

Stage 3: Allowing public access to information

Public access to information can be viewed in multiple dimensions.

- (a) **Web pages, citizen charters and application forms.** If the government department concerned puts up a web page on the Internet, describing all functions of the Department, it can be accessed by citizens and general public interested. This may be usually static data—the Internet equivalent of a printed brochure. The basic profile and functions of the Department concerned will be on public display. Content may include the citizen charters, application forms for various purposes, details of fees, deadlines, rules and regulations, etc. (see <http://gistnic.tn.nic.in> for citizen charters and application forms for all departments of Tamil Nadu State Government). This is one-way broadcast of information of interest to all citizens that has become very common today and almost all government departments have already set up their web sites.

The web page can also be dynamic—the contents changing with time. The web site updation process can take place dynamically. As in the case of Industries Department of Government of Andhra Pradesh (developed by NIC), the officials located at various remote areas within the State perform the updation of the Index of Industrial Production based on actual production data of industrial units located at remote areas in the Districts.

(b) **General information services.** In addition to this e-enabling of the basic functionality of the government departments concerned, there could be much greater scope, content and depth of information that can be of interest and use for the people, and the citizens at large, that is the general information requirements. The general information requirement of the public in general can be broadly defined to a very large extent or scope and coverage, in wide ranging sectors such as Education and Tourism, apart from information from Census and the statistical information pertaining to various sectors of economy such as agriculture, industrial activity, plan details, etc. Before the Internet was established and became popular, a pioneering initiative was taken by National Informatics Centre (NIC) in the form of the Project GISTNIC (General Information Service Terminal of National Informatics Centre), the goal of which was to collate, compile and provide a single-point source of information of various sectors of interest to public in general. A wide range of subjects as, for example, Census data of all villages—population abstracts as also details of amenities were provided in addition to information of all tourist spots, information regarding universities and colleges, etc. Subjects such as rural technologies and specialized subjects as traditional sciences and technologies were also covered.

Stage 4: Allowing two way interactive communication with stake-holders to enable Internet enabled transactions (including financial transactions)

Once a web site is operational, correspondences from the citizens can be allowed through e-mail by providing them the appropriate e-mail addresses. For example, in China, the Beijing city government web site provides e-mail section to citizens apart from other important information such as government regulations, rules, laws or information about services offered by the government. In this e-mail section, the citizens are asked to express their suggestions, ideas, complaints (if any). The appropriate office concerned will be receiving these e-mails. Another approach is to permit citizens to clarify some queries (such as how to move the residence to Beijing) and the response to such queries will be posted on the web site itself.

The two-way interaction need not necessarily be online and web based. In the case of CARD (Computer aided Administration of the Registration Department) Project (executed by the Government of Andhra Pradesh and NIC in Andhra Pradesh State), title deeds are registered in one hour and encumbrance certificates are issued in 20 minutes. The entire set-up is within the concerned sub-registrar office and managed by the office staff themselves. The citizens are provided the requisite services by the officers concerned in a very efficient manner.

Stage 5: Allowing online transactions by the citizens

In stage 4, the citizens interacted through kiosks, obtained services through online or the Internet, but made payments manually. But now, in Stage 5, in addition to permitting single online enquiry access to information, citizens may be enabled to make payments of fees and taxes, lodge complaints, file applications and perform any other transactions online through citizen kiosks installed at busy public locations. This is a much more advanced stage in e-governance not yet reached in developing countries but already reached in the developed world.

In Singapore, the citizens can transact every government business online and round the clock through specially designed kiosks which can be operated using smart cards. They can transact all government related business such as social welfare claims, tax assessment and payment, visa applications and license renewals, in addition to bank based fund or financial transactions using smart cards. However, this is a very advanced technological scenario, too advanced to be replicated immediately in all developing countries, even though plans are being drawn in developing countries to execute similar initiatives. Of course, limited transactions with the government by the citizens have been made online in these countries. The kiosks in public locations in Beijing, China, are successful; this is true of Korea as well as of India (for land record details).

Stage 6: Enriching digital democracy

Democracy can be strengthened and enriched by ICT in multiple ways and modes. At least two important sets of ICT applications that can potentially support participatory and democratic processes, specially in the developing countries have been identified. These relate to applications that enrich and further empower the civil society organizations, and enable the citizens to express themselves by voting in democratic processes through Internet or by any other electronic means.

Examples of success stories on both these two applications identified above can be cited in developing countries. In the Grameena Bank Project in Bangladesh, a cell phone hand set could be bought by a poor woman (with the help of bank loan) who would in turn rent it out to other poor men and women who work in the fields. Finally, this resulted in a commercially viable rural cell phone service leading to significant economic development.

In Andhra Pradesh, the poor women in villages form self-help groups (called DWCRA Project) with micro credit. They were able to grow big enough to set up their own banks which use ICT to a significant level.

The application of ICT in civil society groups and organizations is of a wide spectrum. Several groups can even combine forces, raise funds and even challenge multinational corporations. These challengers can be as diverse as NGOs, trade unions and other self-help groups. Their networking of people could be achieved through ICT applications.

Stage 7: Electronically integrated or joined up government with Legislature and Judiciary

In the final stage of e-governance a comprehensive web portal and a smart card integrates information and services from various responsible government agencies. In this stage both horizontal integration of services across departments and vertical integration of service delivery is expected to take place. As already available in Singapore and also being experimented in many states such as Andhra Pradesh, on a web portal users can obtain services across different geographical levels of government within the same functional area and also access different functions. Thus, in a scenario like this, a citizen could submit a change of address on driving license and such a change would automatically be effected in all other sectors such as health, education, elections, taxation, etc. (thereby avoiding need for multiple filing). This is true of horizontal integration of services in an e-government. Citizens also can use portals to make payments and other transactions, obtain a checklist of enclosures required for an application, find answers to frequently asked questions (faq) and engage the services of relevant commercial enterprises. In Singapore and Hong Kong, such state-of-the-art portals are operational. The Government of Taipei (Taiwan) also has set up a "One Window" service on the Internet for tax administration, public health and e-commerce. Smart cards are gradually becoming functional in several Asian Countries for all such activities.

In Andhra Pradesh the e-seva project offers single-roof service on about 40 different areas such as property registration, taxation, utility bills payment, etc. though not presently with a smart card and also not on a single portal, though attempts are in progress in these directions.

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