Chapter 4

CAPACITY BUILDING FOR e-GOVERNANCE
LEARNING BY DOING METHODOLOGY

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ABSTRACT

With serious effort by Government of India in using Information and Communication Technology (ICT) at Cost of over Rupees 45000 Crores in next few years, there is inescapable need to have suitable manpower resources both in quality and quantity in Government and Corporate world to undertake the challenges of implementing e-Governance projects.

One such effort was made at International Institute of Information Technology at Hyderabad to train budding engineers in the domain of e-Governance. The positive feedback encouraged the authors to attempt a new approach of Learning by Doing Methodology for its applicability across the country, for training thousands of e-Governance specialists required in e-Governance domain.

INTRODUCTION

2009 with a host of impressive initiatives taken by Department of Information Technology (India's strides in Information and Communication Technology continued unabated in DIT) of Government of India for reaching and serving the masses. The National e-Governance Plan (NeGP), approved by the Government, takes a holistic view of e-Governance initiatives across the country, integrating them into a collective vision: The ultimate objective of NeGP is *"Make all Government services accessible to the common man in his locality, through common service delivery outlets, ensuring efficiency, transparency, and reliability of such services at affordable costs to realize the basic needs of the common man".*

NeGP comprises of 27 Mission Mode Projects (MMPs) encompassing 9 Central MMPs, 11 State MMPs and 7 Integrated MMPs. It also includes 8 program support components aimed at creating the right governance and institutional mechanisms, core infrastructure, policies, standards, and the necessary legal framework for adoption of e-Governance in the country. NeGP is being implemented at the Central, State, and Local Government levels. As of date, all Central MMPs have crossed the stage of conceptualization and moved to design-and-development and implementation stages, schemes having been approved for 8 of the 9 MMPs.

All Integrated MMPs have crossed the stage of conceptualization, schemes having been approved for 6 out of the 7 MMPs. With respect to State MMPs, schemes for 5 MMPs have been approved and scheme preparation for 3 out of remaining 6 MMPs is in advanced stage. Under NeGP, the Government has approved a Scheme for facilitating establishment of more than 100,000 broadband- internet-enabled Common Services Centers (CSCs) in rural areas of the country at a total cost of Rs. 5742 Crores. The Scheme is being implemented in the Public Private Partnership (PPP) mode. As of now, the number of CSCs rolled out in 25 States is nearly 90,000.

The remaining CSCs are expected to be rolled out by end 2010.

NEED FOR CAPACITY BUILDING

The nature and scale of e-governance initiatives planned within the domain of the State Governments, present a considerable enhancement in the aspiration level of Government. Major managerial and technological challenges are one consequence of this, particularly in the context of the need for implementation of these projects in a "mission mode", by departments concerned of the State Governments. There is also a need to manage the entire programme at the State level in a coherent manner with consistent strategies for cost optimisation and integration. For achieving this, the Governments need to provide the overall direction, standardization and consistency across initiatives and at the same time, have the resources and flexibility to drive this Plan.

Given the federal structure of India, this brings in diversity in local laws, rules for transacting government business, implementation approach and responsibilities. Hence while designing the NeGP, Government recognized the importance of building human capacities in terms of necessary knowledge and skills to conceptualize, initiate, implement and sustain e-Governance initiatives. It is equally important to foster an attitude and mindset that is receptive to ICT based administration and ICT based delivery of services. The Government recognizes that mere development of e-Governance strategies and induction of technology will not help deliver the quality of services envisaged unless human resources are aligned to provide the right services to the right customers from the right sources with the right tools at the right time.

Capacity Building Scheme for an outlay of Rs 313 Crores for all the States/UTs for taking National e-Governance Plan (NeGP) forward across the country has been approved by the Cabinet Committee on Economic Affairs (CCEA) 2008. The scheme is mainly for providing technical & professional support to State level policy & decision-making bodies and to develop specialized skills for e-governance. The scheme for a period of three years and is being implemented by the Department of Information Technology, Government of India.

The scheme envisions:
a) Establishment of Institutional Framework for State Level Strategic decision-making including setting-up of State e-Governance Mission Team (SeMT).
b) Imparting of specialized training, Orientation program for SeMTs and decision makers.
c) Setting up of a central Capacity Building Management Cell for coordination and implementation of the scheme.

It is important to understand that even if e-Government initiatives are implemented successfully, it would still be a big challenge to ensure that citizens use the services effectively. Though India has emerged as a major player in the sphere of IT enabled services and the knowledge industry, the movement has, by and large, remained urban oriented, with the exception of a few rural initiatives in some States. The urgent requirement today is to address the digital divide in the country in an integrated and holistic manner. This is only possible when the citizens are made aware about the e-Governance initiatives and how they can effectively utilize it in their   day-to-day   affairs.

For the e-Governance implementation to take serious root in India, we need to train in lakhs in all categories of stake holders. Formal sector, with its inertia will not be

able to handle this requirement. We need a new and innovative approach in capacity building both at National, State, Department and District levels.

One of the ways to successfully implement this goal is to make the people of the country, including the officials learn by doing (LBD). This type of learning will not only give a theoretical idea of the current projects related to the NeGP, but will also enhance the practical aspect of all these applications wherever they apply. Learning by doing methodology was implemented in International Institute of Information Technology at Hyderabad and its various aspects are discussed further.

LEARNING BY DOING METHODOLOGY (LBD)

The LBD methodology is built on the constructionist approach and promotes a learner-oriented learning environment. In this learning environment, lesson/unit goals and expectations are set at the outset, so that learners understand what they are trying to achieve and the level of that achievement. Multiple strategies of solving the problems are explained by the mentor.

This allows the learners to understand the various ways of solving the problems that they encounter. Feedback is given by the mentors during learner interactions (through presentations and discussions) which allows the learners to revise their projects/artifacts. Lastly, an involvement with application in the real world allows the learning process to take place in a more meaningful context.

The LBD methodology fosters skill development and the learning of factual information in the context of how it will be used and aims at giving a hands-on fulfilling experience which helps the students understand the practical implementation aspects and the associated concepts. In this methodology, mentors assist the students in their course work by "providing hints and not solutions". Unlike, the conventional mode of teaching, the student to teacher ratio in this mode is 10:1, which allows for personalized mentoring and growth of the student (refer Table 1).

Lecture based teaching	Learning by doing
Grading mostly done on knowledge and retention levels	Grading done on the application, analysis and the synthesis levels
Student to faculty ratio is high.	Student to faculty ratio is 10:1. This accounts for personalized mentoring which helps in student's growth.
Students handle multiple courses simultaneously	Students work on one course at a time. This helps in immersive learning.
Most of the learning is through lectures.	Most of the learning is through application.

Table 1. Comparison of LBD and lecture based methodologies

In addition, we have enhanced the LBD methodology by employing the international pedagogical concepts of formative and summative assessment to design rubrics for learning as well as grading phases. The rubrics map the learning objectives of the module and measure them on various parameters. These rubrics benefit in that the faculty can justify the marks given and the student can know how he/she will be assessed. Using these rubrics, faculty can give better feedback to the student. Most

importantly, the use of rubrics provides a standardized way of reducing biased judgment and provide more transparency between faculty and students while evaluation.

International Institute of Information Technology, Hyderabad has set up Enhance Edu Centre to undertake special programme supported by Ministry of Communication and IT to bridge the gap in Engineering Colleges in IT technology and skill to make the students employable in Industry. The centre is also supported by NASSCOM and has been working with large number of Engineering College in Andhra Pradesh to train teachers and mentors on this new LBD methodology. Their website can be visited for details of their activities in this area of capacity Building.

CASE STUDY OF e-GOVERNANCE LEARNING BY DOING COURSE AT IIIT-Hyderabad

Overview
The objective of this course was to cover basic concepts of e-Government with scope of applications of Information & Communication Technologies (ICT) in Government sector by the LBD methodology. The role of ICT as enabler for government process reengineering (GPR) for citizen services was reviewed. The Course was offered to the 3rd, 4th year students from Computer Science and Engineering, Electronics and Communications Engineering streams during Spring 2010 Semester.

Structure
Lectures were divided in three modules and were organized in such a manner that students can first gain some knowledge about role of ICT in today's world, e-Governance and its various aspects and learn from the success and failure stories by case studies. This approach was followed keeping in mind that first some basic concepts to be built upon, then projecting the present days picture of e-Governance to the students and finally case studies to give them the examples of the same. For this the course was divided in to three modules.

Module I: ICT for Development
The first module ICT for development contained topics like Impact of IT on e-Government, Systems Approach & Framework for Management Information Systems, Systems Development, Enterprise Architecture, SMART governance, e-Governance Grid for India etc. This module helped students gain some understanding about what is e-Governance and what is its importance in our lives. Major topics include:-

1. From Government to e-Government to e-Governance
2. Information and Communication Technology and Impact on e-Government
3. SMART-Governance

Module II: e-Governance Basics and Issues
The second module e-Governance basics and Issues covered various factors governing good governance. Students were delivered key knowledge over Government process re-engineering, IT and RTI act , Critical Success factors, NeGP, e-Readiness , Change Management etc. Issues like e-Security and role of State in providing effective e-Government services were also covered. After going through this module the students were able to analyze various aspects of e-Government services. It is important to understand what all things are to be taken care of to implement a successful e-Government service and how to cope with the ever changing scenarios of the present world. Major topics include:-

1. Government Process Re-engineering
2. e-Governance Attributes and Thumb rules
3. e-Security & Cyber Laws
4. e-Gov & role of state

Module III: e-Governance Case Studies

The third module e-Governance case studies was shared to highlight the various e-Government services which are successful to understand the implementation of the e-Government service plan when need for the same arises. Success stories like India Post , Rail reservation system , e-Seva and Aarogyasri were discussed. For the benefit of the class a failure case study was also discussed so as to realize the failure points and things to be kept in mind while implementing an e-Government service.

The three modules covered the basic dimensions for understanding e-Governance, factors involving its implementation and the live stories of the same. As this course was offered with a specific view of learning by doing each topic of a module consisted of a group and a individual task.

Issues in Conduct

For letting students to understand the topics by doing themselves each unit of a module involved individual and group task. An individual task was to test that if the student has grasped the key points of the topics well. This individual task would require a student to search for the information related to the topic and then student would try giving optimizing ideas for the same.

Group task after each unit encouraged students to work as a team to find out the solution to the problems listed. These tasks used various methodologies like snow balling, group discussions etc. which helped students generate ideas and compile them to give a optimum solution to the given problem.

Each student had to write a **technical paper** in which a current problem in India or an area of improvement with suggestive measure had to be given. Students needed to provide optimum background of the area of interest, its current status, need for development, suggested solutions and conclusion. Students submitted papers with improvement ideas over topics like e-Governance Issues in implementations. Reaching the Masses, Role of ICT and Vision of India 2040: Most powerful country in the world. Two papers from the class were also selected in an international conference at IIM-B (India). This technical paper helped students to get deep knowledge and critically analyze the problems involved.

A group of students needed to identify one topic for their **project**. This project would require extensive search over a particular e-Governance service. Students need to find out the origin of that service, changes it has went through with reasons, present status and most important to give suggestions and optimizing solutions for its present and future functioning. Students chose e-Government services like e-SEVA, EMRI, AP Online Services, e-Panchayats etc.

For the project students visited various e-Government offices and found out the past and present status of the service. With a intense research students found various ways of improving the services and also acknowledged the effort done. The tasks,

technical paper and group project enabled students with a totally new approach of learning this emerging area of e-Governance.

FEEDBACK

It is seen many a times that there is a difference in expectation towards a course and output of the same. This course included two rounds of feedback taken from students attending the course. Initial Feedback was to get the expectation of the students from the course so as to design and implement the course in such a manner that expectations are met. Final Feedback was to analyze and understand if these expectations have been achieved.

Initial Feedback:

Expectations: Students had written various reasons for taking up this course. But to summarize these were the main reasons students felt they were keen in taking this course which was offered first time in IIIT-H:

- To understand what is e-Government and what are its benefits.
- To learn how their present knowledge can contribute to make Government more efficient.
- To find out reasons why there are various problems and why country is lacking in various areas despite we call ourselves modernized in most things.
- To learn about other ICT technologies useful in the present day world.
- To learn about the current scenario of Online services.

Background in governance/e-Government: A very few students had done a related course which was as expected. Today Indian institutions need to deliver more such courses to get more participation from the youth in the Government sector for the benefit of the country.

Background of the students is mentioned below:

- Some civics courses in the school
- Some software engineering and IT related courses
- A student had done an internship at EMRI, NIC.
- Social Entrepreneurship, Globalization and Social Development.

Expectations: As this course was offered for the first time in IIIT-H and most students didn't take related course or study earlier in their education they were expecting that this course would provide them the opportunity to understand the basics of governance and how ICT is playing a role in the development. Apart from this students expected the following outcomes from the course:

- Ways towards efficient government.
- To understand technologies used for e-Government.
- To develop good projects which could solve country's problems like poverty?
- To develop understanding of e-Government projects and to work in the same in future.

Specific areas: Some students wanted to learn specifically following topics from this course:

- To learn opportunities for themselves to contribute in good governance practices.
- To learn about how government websites run. Their success, failures and technical aspects of them.
- To learn about the hierarchy of the government system in india.
- To learn about methods like public private partnership.

- To learn about SOA in governance.
- To learn about various government projects like e-Sagu, e-Seva, Aarogyasri etc.
- To learn about the methods of implementations of e-Government projects.

Final Feedback The second feedback was taken at the end of the semester at the completion of the course. In this feedback students had to tick on three scales about their feeling of understanding various topics of the course. They were also asked about meeting up of their expectation from the course and for this their initial feedback was scanned at back of the second feedback. Overall analysis of this feedback is given below.

1. **How far the course objectives have been addressed?**

Objectives	Fully	Partially
Basic concepts of governance, Government and e-Governance	95%	5%
Applications of ICT in Governance Sector	79%	21%
ICT as enabler in Technology for citizen services	79%	21%
Issues of e-Governance initiatives, including e-Security, Cyber-Laws and Change management.	74%	26%
Awareness of NeGP and Status	53%	47%
Case studies in Indian context	79%	21%
Encouraging Tech writing and team work	74%	26%

2. **List out sessions you found most Useful:-**
    All case studies and specially IMPRESS- Rail Reservation System,e-Security, Aarogyasri; Management Information System; Change Management; ICT for development; NeGP (National e-Governance Plan), India; e-Governance to Good Governance; Government Process Re-engineering

3. **Some sessions you felt were not required:-**
    Government - District – Scenarios; Project Dhanwantri; SMART governance; Cloud Computing.

4. **Has your expectation from this course on e-Governance been met?**

    Totally: 90% ;   Partially: 10%

5. **Any other information, you want to share?**
- The knowledge this course provided is not only useful for IIIT-H students but is very necessary for all citizens of the country.
- Redundancy could have been avoided in the course.
- Field trips could have been introduced
- Also include new problems to the existing cases discussed.

Conclusion:
After taking this course, the student are expected to be exposed to the major national initiatives in National e-Governance Plan (NeGP) for India and will be able to analyze the essential parameters/critical success factors of e-Government projects in Indian environment. They were also able to carry out independent study and undertake critical analysis and evaluation of ongoing e-Governance projects. This course which was implemented using learning by doing methodology proved to be a very different and effective approach for understanding the subject of e-Governance. Students while doing various tasks assigned realized the importance of e-Governance and also were able to think beyond for improving government services for the betterment of all.

This methodology if implemented on a large scale would not only help people working in government sector, but also the common citizen of the country. As it is e-Based, it would help in making this knowledge available to the people living in far flung areas, thereby saving time and money in the process. The approach would also help in the better usage of the currently available e-Government services as it will lead to greater awareness.

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