A Frame Work on E-Governance in ODL System – An Analysis

K. S. Ramakrishnan, PhD.
Assistant Professor
School of Education, Tamil
Nadu Open University,
Saidapet, Chennai – 600 015

ABSTRACT
Open and Distance Learning (ODL) is an emerging area to address the fundamental issues of access, retention and quality of higher education to improve human capabilities and achieving the vision of knowledge economy. In India, a higher proportion of younger population is found due to unique demographic transition. Providing quality higher education to such a large proportion of population, in a soft democratic country, is a Herculean task, where hardly ten percent of the youth are enrolled in higher education. The gross enrolment ratio (GER) of marginalized sections of society in the context of social and gender is even less than six percent. The need for cost effective and need based quality education capable to produce employable youths is self evident. The Knowledge Commission of India (2006) and the Eleventh Five Year Plan (2007-12) highlighted better governed participatory structures and processes for inclusive educational development. At present, more than 300 institutions of higher learning are functioning in different parts of India. Certainly one can attain cost effective and need based quality education through ODL System and ICT and e-governance will aid ODL system. In this article a frame work on e-governance of an ODL system is discussed. It will provide a heuristic of the study of e-governance in ODL system and suggest ways and means to integrate different entities towards achieving the goal of e-governance in an ODL System.

General Terms
E-Governance, its applications in Education

Keywords
Open and Distance Learning, Information and Communication Technologies, E-Governance

1. DEFINING E-GOVERNANCE AND INTERACTIONS
Many definitions exist for e-governance. E-governance is a form of e-business in governance and refers to the processes and structures needed to deliver electronic services and collaborate with stakeholders (students, staff and customers in an university set-up) and to conduct electronic transactions within an organizational entity. The term interaction stands for the delivery of University products and services, exchange of information, communication, transactions and system integration. Governance consists of levels and branches. Governance levels include regional, departmental and local. For example, University branches are Administration, Students Services, Examination and Evaluation and Book material Production and Distribution. University's operations should be all back-office processes and inter-University interactions should be within the total University's administrative affairs.

E-governance and ICT: The objective of e-governance should be to support and simplify governance for all stakeholders i.e. Students, Staffs and Customers. It is here the use of ICTs that will bring together all the three parties and support processes and activities. Therefore it should be understood that through e-governance the objectives of good governance is established by means of ICT. Having understood the meaning of e-governance let us move on to understand two new terminologies i.e. e-democracy and e-governance.

E-democracy:

- To provide stakeholders access to information and knowledge about the administrative process, about services and about choices available.
- To make possible the transition from passive information access to active stakeholder participation by: (i) Informing the stakeholder (ii) Representing the stakeholder (iii) Encouraging the stakeholder to be part of the system (iv) Counseling the students through two way interactions.

E-governance: In e-governance two processes are involved they are internally focused processes (operations) and externally focused services. The objective of internally focused processes of e-governance in University operations is to facilitate a speedy, transparent, accountable, efficient and effective process for performing administrative activities of the University. If these objectives are implemented it will certainly save costs significantly and the same will be discussed in the later part of this paper. On the other hand the objectives of externally focused services should be to satisfactorily fulfill the stakeholder's needs and expectations on the front-office side, by simplifying their interaction with various online services. It is here that the use of ICTs in University operations facilitates speedy, transparent, accountable, efficient and effective interaction with the stakeholders.

Therefore Computerized administration, accounting systems, access to students information including their counseling and evaluation determine e-governance in a ODL system. The University which embarks on e-governance should have a vision and mission statement. The clearly spelt out vision and mission statement should be complied with total quality management. Look at what the former President of India has to say about e-governance: *"A transparent smart e-governance with seamless access, secure and authentic flow of information crossing the inter-departmental barrier and providing a fair and unbiased service to the citizen* - **Dr.APJ Abdul Kalam.**

2. TOWARDS E-GOVERNANCE IN ODL - A REALITY

All the educational institutions, conventional or dual mode, autonomous distance teaching Universities or training organizations are undergoing tremendous pressure for change, mainly due to external circumstances over which they have little control. The concept of e-Governance in an Open and Distance University should be thought of at the take-off stage i.e. actually after launching the program and becoming self reliant in terms of book material production, counseling, conducting examinations and publishing results. Any ODL System should have the following wings:

1. The Administrative Division
2. The Admission and Student Support Services Division
3. The Examination and Evaluation Division
4. The Print Material and Distribution Division
5. The Electronic Media and Production Division
6. The Continuing Education Division
7. The Different Schools.

While the first five divisions are the facilitators the rest of the two are the main stream from where the courses originate. In the first stage of the establishment of the University floor space would have been a major constraint. Then comes the problem of recruitment of appropriate personnel including faculties, experts in the area of ODL. Behind launching the programs lot of things takes place. Identifying the course writers, making the book materials ready etc. The greatest problem is to make the students study. The concept of assignment writing and attending counseling classes will certainly induce the students to go through the study materials. Two way interactive devices helps students have interaction electronically with the subject experts from remote places. The University should carefully embark on this concept of on line teaching. Certainly one line teaching should not occur at this stage.

At the second stage the University should launch its website and make it possible for the stakeholders to interact with the University through one counter 24 hours a day, 7 days a week and 365 days a year without waiting in lines at University offices. Such an activity is possible with the use of electronic means such as the Internet. Each stakeholder can then make contact with the University through a website where all forms, rules, news and other information are available 24/7.

The use of ICT means in Governance has impact on the following aspects: *24/7 Service Model* Systems and processes have to be adapted to a completely new service model. Intake processes are made self-service and even in the middle of the night a stakeholder should get an immediate (automated) response about the status of his query. It is here one should go in for Interactive Voice Response System (IVRS). 24/7 help desk will be available on line in two or three languages. This help desk can provide information not only to the students question like receipt of fee, pending fee payment, date of examination, date of Convocation and marks secured by them but also to the general public about the program structure etc.

Stakeholder's expectations towards University's response times will change because of the new communication medium. E-mail should also be seen as a new but serious channel besides the traditional channels such as telephone, physical counter, post and fax. There should be an automatic reply system that should start acknowledging the receipt of an enquiry. And time of response should be reduced to a considerable extent. Such an arrangement will boost the confidence of the stakeholder and certainly increase the efficiency of the administration in serving the public.

One can also think of an Interactive Voice Response System which is a 24/7 and 365 days service providing instrument. However, using website alone cannot be construed as e-Governance and in Open and Distance Learning it has wider connotation. After launching the Website and slowly brought technology in to use, locating computers and systems in place and networking the computers would have been the primary works. When all the seven functionaries were properly established the University should think of computerizing the processes across the seven entities. The following figure shows networking of the different entity:

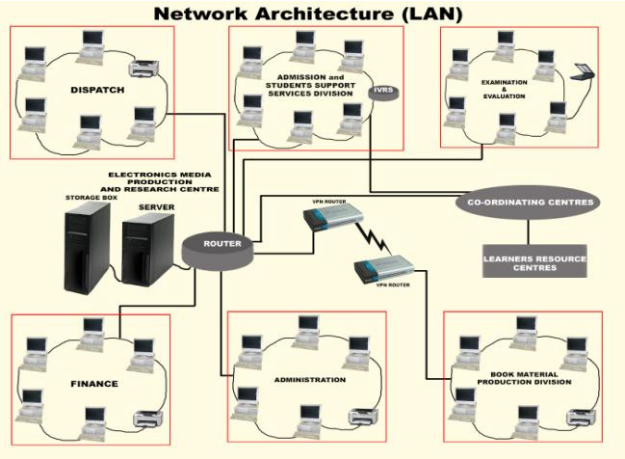

Fig 1: Network Architecture for E-Governance

3. ON-LINE TEACHING AND COST FACTOR IN E-GOVERNANCE

When the University thinks of on-line teaching which is also part of e-Governance it should estimate the costs of the system. Greville Rumble contemplates that at the macro-level the costs of any system are driven by a combination of the following factors, all of which are susceptible to management control (2)

- Course populations
- The number of courses offered
- The lengths of course lifetimes
- The media and technologies chosen
- The extent to which cost-including actions, for example, the use of copyrighted materials, are avoided
- The extent to which costs are placed on students, either as tuition, or by moving the system boundaries so that activities the institution might once have paid for are now paid for by students (e.g. access to tutorial and library services)
- The extent to which the institution employs people on contracts for service (i.e. salaried posts) to develop courses and teach students, rather than on contracts of service (i.e. hired as casual labor, to be paid by the manuscript/script/tutorial hour/test marked, etc.,)
- The extent to which the institution adopts working practices that reduce the costs of labor by, for example, designing courses to be wrapped-around existing text books rather than developing new materials, and using author-editor models of course design, rather than big course team models

- The use of technology to increase the student load per academic or administrator
- Increases in the teaching load of academic staff at the expense of other functions- for example, research and public service, and…
- 'Labor for labor' substitution – the replacement of expensive academic labor by student and adjacent labor, in order to reduce staff costs.

He further admits that an important element in costing is to understand the system being costed, so that cost elements are not missed. He argues that the institutional costs of a fully developed e-education systems would include:

1. Developing of e-materials
2. Teaching and assessing students online
3. Accessing the web-site
4. Administering Students on-line
5. Providing the infrastructure and support within which e-education can operate
6. Planning and Managing e-education at the macro-level.

In addition to the above costing the following costs will recur owing to the advent of e-learning technologies:

1. Cost of on-line learning
2. Costs of developing on-line learning materials
3. Costs of e-delivery
4. Costs of e-administration

3.1. Costs of on-line learning

With the growth of the Internet, online learning or online teaching has expanded its potential as a mode of delivering courses. At the same time, conflicting opinions have arisen about the net advantage that online courses may have in higher education. Abstract done by Willard Hom, Director, Research & Planning Unit, System Office, California Community Colleges, 04/01/06 (3) will throw useful light on on-line learning. It was reported in that study that the result of the study may disappoint people who urgently need conclusive evidence about how and why higher education, including the two-year segment, should take advantage of the online approach.

3.2. Cost of developing on-line learning materials

Most of the technologies involved in Web-based courses are in existence for a long period of time. These include preparation of text, audio, video, computer based tutoring, intelligent tutoring, exploratory learning, simulations etc. It is imperative to understand that the following costs that should be taken in to account for producing e-learning CD:

1. Course outlines and assignments
2. Text with reference materials
3. Images
4. Audio & Video
5. Simulation
6. Virtual Reality

Arizona Learning Systems indicates that atleast US$6000 is being spent on developing an internet course. In India most of the Institutions give contract to outside agencies to produce internet course. A synchronous CD with all the above features would cost about Rs.1.5 lakhs.

3.3. Costs of e-delivery

It is true that development costs of even relatively simple online materials may be higher than paper based print, one should understand that there is an element of considerable savings on e-delivery costs. The costs to the library of Virginia University in providing a single copy of a four page report in digital format is just 90 US cents when compared with $19 to supply a surface-mail customer and $12 to supply an on-site user (4). This will also have some impact on the student's psychology as they are used to their course materials received through mails and they may not like to pay online to take printouts which may also pinch their purse. Therefore, individual Universities have to device methods to make students use on line materials conveniently and cost effectively.

Besides the above costs one should not forget the costs of computer-mediated communications and assessment. This involves the study of teacher - student work load. Bates argues that in comparison with face to face teaching, Computer Mediated Communications will lower the costs of tuition because a good deal of students' time is spent studying the material and so the teacher needs to spend less time per student overall in class (5). It is also a fact that students will spend a great deal of more time in learning from their peers. Moonen argues that online tutoring adds to traditional faculty workload, given the enormous volume of messaging arising from increased interaction with students with each message requiring more time to compose than verbal teaching (6). Boettcher suggests that experience indicates that a faculty member can handle more students on a web course to the range of 25 to 65 (5). There is also a problem of the teacher spending more time on on-line teaching than in a traditional way. Tolley quotes that she had spent more than twice as many hours of tutoring an online course entitled ***What is Europe?*** In the traditional version she use to spend only 48 hours of face to face teaching as against 120 hours in online tutoring. There is also another problem that is system availability at the students command. In other words the costs students incur in acquiring and operating equipment is not generally taken into account. These costs certainly have major impact on affordability on the part of the students. If owning the computer becomes a condition precedent for online teaching then many students who cannot afford to these equipments will be left out of on-line tutoring. It is here the concept of Coordinating Centres will play a major role in providing access to the students. These Coordinating Centres should be funded, equipped and controlled by the University so that the facility of live-telecast of e-education be attended by the students free of cost at all times.

3.4. Costs of e-administration

Farmer states that a paper based invoice may cost US$ 0.90 to produce and distribute; on line services can reduce this to something like US$ 0.40-0.60 and speed the whole process up (9). If 50 to 75% of transactions currently being carried out manually and on paper is done electronically it will cut down the cost considerably. Can we save through e-administration is the big question. E-commerce practices are also being copied by educational Institutions as they allow companies to advertise in their web sites and thereby generate income. The income earned through advertisement will to a certain extent of-set the cost of the web-site maintenance. It is also possible to find spare space in e-content CDs for advertisement and earn substantial income through such advertisement space. This practice is largely present in US based educational Institutions and it is totally absent in Indian scenario.

Maintaining Networked Services: It is true that costs of equipment as well as costs of software licenses are generally takes places in the budgeting. However maintenance costs of networked services are not finding the place in the budgets. This poses a question mark in replacement cycle for computers, servers and storage boxes. Replacement costs which tend to rise are often underestimated. The estimated life cycle of a computer is 3 to 5 years. For central servers and storage boxes it is 3 to 4 years. Therefore the replacement costs are to be worked out at the time when new equipments are planned.

Need routine updating in the information: Website should not become dead letter post office. Websites consist of content (information), steps should be taken to collect (buy), produce and update the information daily. In phase 1 content will be static, but in phase 2 content will be changing every day. Content managers in each (large) department are responsible for the information on the website.

Training of Human Resources: Effective use of ICTs in an organisation requires training of people. People should feel comfortable with the tools they can use otherwise they will return to their old working patterns and habits. Maintaining technological infrastructure requires IT skilled resources. Governments will have to compete with the private (commercial) sector to recruit the necessary IT skilled people.

Security: Just about any computer system is vulnerable to external attacks. As the University moves its core processes (information, communication and transactions) to the Internet it is becoming far more vulnerable. Internet increases the number of entry points exponentially. **Protection is possible with anti-virus software, firewall at gateways, encryption technology, and authentic identification tools.** Client server architecture and the uses of big storage boxes will save the information stored and will be able to withstand virus attacks. The implementation of middle level software like IBM Websphere will ease out the number of people hitting the server at a time. Some of the systems have become extremely impregnable to virus attacks. Examples are Apple computers. But care should be taken to identify the systems because these systems are not compatible with other software.

Privacy: In phases 3 and 4 University possess detailed information about students and officials, which is often held in multiple offices on many different computer systems (or still in paper files). The integration of data can result in situations where the privacy of individual student is in danger. It is the responsibility of the University to restrict the utilisation of private information, and secure such information from access by unintended parties.

Existence of IT Department: With the implementation of e-governance IT will become more and more important in the University's operations and therefore a separate department should be created. Such a department will play a pivotal role in not only implementation, but also maintaining the software, hardware and infrastructure.

4. CONCLUSIONS

Thus in this paper a frame work of e-governance for ODL system has been contemplated. Effective e-governance enhances the quality of service and advocates transparency. E-governance will answer the question of innovation. If ODLs do not innovate it will lead in to tremendous pressure and put on a heavy burden on the administration and ultimately result in complications and result in to increase of costs.

5. REFERENCES

[1] Bates. A. W. 1995. Technology, Open Learning and Distance Education, London: Routledge.

[2] Farmer M. A. 1999. Study: E-commerce sites pricey to build, CNET News. com.

[3] Moonen.J. 1997. The efficiency of telelearning, Journal of Asynchronous Networked Learning, 1 (2).

[4] Sarvaharana,P.,Ramakrishnan,K.S., and Vijayan, S. 2008. The Concept of Governance vs. e-Governance its problems and prospects– An Analysis" Presented at the International Conference on Digitalizing Administration-Challenges and Issues in E-Governance" held on 17th & 18th March 2008 organized by the Department of Public Administration, Chennai-India.

[5] Sarvaharana,P.,Ramakrishnan,K.S., and Vijayan, S. 2007. An Overview on the Problems in Accountability of E-content and E-Administration of Distance Learning", Presented at the International Conference on Open and Distance Education organized by Dr.B.R.Ambedkar Open University on 25.8.2007, Hyderabad, India.

[6] Roderick, E. 1998. More than just pretty pictures: A cost/benefit analysis of digital library holdings. A paper presented to the CAUSE98 Conference, Seattle.

[7] Tolley.S.2000. How electronic conferencing affects the way we teach, Open Learning, 15(3), 253-65.