Role of e-Governance to strengthen Higher Education System in India

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Abstract

E-Governance is understood as a set of activities involving the effective contribution of information and communication technology (ICT) for strengthening administration and management in higher education system in India has declined somewhat over the past three decades due to tremendous increase in the number of colleges and universities and their privatisation. It has become very important for the government to keep track of their functioning. A good higher education system is required for overall development of a nation. The planning for efficient administration of higher educational institutions, increasing Global communication skill, to achieve the world class standard it is necessary to have a improved collaboration and access to information available in all the parts of the world are possible only by introducing IT in Educational Sector with e-governance as a security for maintaining standard. The e-governance needs security for smooth information flow, best practice database and enhanced capacity for information analysis etc. Government should support by enacting favorable legislations and updated amendments for maintaining standards in the educational process and improvements in the related field. It requires completely new infrastructure, procedures, policies and working skills for producing and collecting online information. With the advent of ICT, electronic governance is an emerging trend to re-invent the way the government works, becoming a new model of governance. Such a comprehensive and integrated system can also enable authorities to analyze the performance of one of the best performing institutes and compare it with other schools and colleges to identify the gaps. Through e-governance we improve the quality of higher education system in India. E-governance can create the transparency between the universities, colleges and students. It will bring forth, new concepts of governance, both in terms of needs and responsibilities. Many problems of higher education system can be solved by the Public Private Partnership model and e-governance.

Key-Words: *e-Governance, Collaborative Learning, Public-Private-Partnership, Accreditation, Stakeholders, Curriculum*

Introduction:

Electronic Governance is the use of Information and Communication Technologies (ICT) for the planning, implementation, and monitoring of government programs, projects, and activities. E-Governance is understood as a set of activities involving the effective contribution of information and communication technology (ICT) for

strengthening administration and management in higher education system in India has declined somewhat over the past three decades due to remarkable increase in the number of colleges and universities and their privatization. It has become very important for the government to keep track of their functioning.

E-Government can transform citizen service, provide access to information to empower citizens, enable their participation in government and enhance citizen economic and social opportunities, so that they can make better lives, for themselves and for the next generation. Formation communication transactions, integration of various stand-alone systems and services between Government-to-Citizens (G2C), Government-to Business (G2B), Government-to-Government (G2G) as well as back office processes and interactions within the entire government frame work. E-Governance is expected to help deliver cost-effective and easy-to-access citizen services, and improve processing of transactions both within the government, and between the government and other agencies. Through the e-Governance, the government services will be made available to the citizens in a convenient, efficient and transparent manner. The three main target groups that can be distinguished in governance concepts are Government, citizens and businesses/interest groups. Governments are specialized institutions that contribute to governance. Representative governments seek and receive citizen support, but they also need the active cooperation of their public servants. Governance is the outcome of politics.

A remarkable growth in the higher education sector had made the administration of higher education institutions intricate. Many researches reveal that the integration of ICT helps to reduce the intricacy and enhance the overall administration of higher education. Change has been happening at an uneven pace in any growth-oriented industry, and the education sector is no exception. Rapid growth in the field of education has made governance in academic sector a very complex task. The 21st Century has witnessed tremendous advancements in technology which has led to far-reaching developments in the administrative system. Cost-effective technology combined with the flexibility in learning and administrative activities is essential to enhance efficiency.

E-Governance solutions in educational sector incorporates the latest technology to bring a system that combines administrative and university management functions that are necessary for successful handling of all issues relating to the academic affairs and the challenges for smooth functioning of an educational institution. Through implementation of e-Governance solution in every unit of an academic institution, the real time information processing and knowledge management of the institution is made possible. Information and Communication Technology (ICT) plays a vital role in supporting powerful, efficient management and administration in education sector. It is specified that technology can be used right from student administration to various resource administration in an education institution.

Moreover many studies revealed the need for ICT integration into administrative activities of higher

education institutions. E-Governance solution is an integrated solution that facilitates the processing and maintenance of large volumes of information - including student, faculty, inventory, asset management, facility management, transport, library, staff details, and payroll and student fees among various departments in an academic institution. E-Governance solution in the field of educational sector incorporates whole data and processes of an educational Institution into a unified system, making the process uncomplicated, well-organized and error proof. The solution is designed to make the system user-friendly, time saving and cost saving also. Many of them are flexible enough to adapt to the changing educational environment efficiently and quickly. Educational institutions may have various requirements that include computerization and management of processes such as registration, admission, student information, classes, time table, transport, attendance, library, salary and expenses, examinations, performance, grades, hostels, security and reports. Many of the software providers allow their clients to choose from the available modules to grab their needs.

Role of higher education in Society:

Scientific and technological advancement and economic growth of a country are as dependent on the higher education system as they are on the working class. Development of indigenous technology and capabilities in agriculture, food security and other industrial areas are possible because of our world-class higher education infrastructure. Higher education also provides opportunities for lifelong learning, allowing people to upgrade their knowledge and skills from time to time

based on the societal needs. The Kothari Commission (1996) listed the following roles of the universities (Higher education institutions in the modern Society): (i) To seek and cultivate new knowledge, to engage dynamically and fearlessly in the pursuit of truth, and to interpret old knowledge and benefits in the light of new needs and discoveries. (ii) To provide the right kind of leadership in all walk of life, to identify gifted youth and help them develop their potential to the full of cultivating physical fitness, developing the powers of the mind and cultivating right interests, attitudes and moral and intellectual values. (iii) To provide the society with competent men and women trained in agriculture, art, medicine, science and technology and various other professions who will also be cultivated individuals, imbibed with a sense of social purpose. (iv) To strive to promote quality and social justice and to reduce social and culture differences through diffusion of education, (v) To foster in the teachers, students and through them in the society generally, the attitudes and the values needed for developing the good life in individuals and society (GOI, 1996).

E-Governance in Higher Education India has one of the largest higher education systems in the world .Despite having the largest higher education system, the quality of education, in general, cannot be claimed to be the best. Technical and vocational Education in India has seen enormous growth in recent years with a large increase in total number of institutes imparting higher education. On one hand, this growth promises to produce more skilled youth to fulfill needs of ever growing Indian industry and on the other hand it poses a huge challenge for the governing bodies like UGC, AICTE,

NCTE, PCI, MCI, INC, DCI etc., and state technical education boards to maintain & improve the quality of education being imparted through these new & existing technical and Vocational Institutes. But as has been reported by NASSCOM(National Association of Software and Service Companies) in its 2004 report, out of 3 million graduates and post-graduates added to the workforce in India every year only 25% of technical and 10-15% of non-technical graduates are employable by growing IT, and other sector, points to is a very serious situation. This lack of knowledge, qualities & skills desired by the employers, from the youth, may lead to the problems like unemployment/ underemployment, which detain will lead to their disapproval& hence their offense that will be reflected in terms of an increase in crime and other antisocial activities. Now a days, our education system is untidy, to say the least. It is characterized by substandard technical and vocational institutions lagging good infrastructure and qualified teachers, teacher truancy, obsolete syllabi, inadequate infrastructure, unemployable graduates and a lot more other problems. The scenario has been further worsened due lack of some effective & real time monitoring mechanism & widespread corruption prevalent in Govt. regulatory bodies that help such substandard institute to start & remain functional without bothering to maintain any quality at all. Mushrooming of a large number of unrecognized & substandard fake universities/institutions distribution fake technical certificates, diplomas, degrees & Ph.Ds, fraudulently, without being caught, is also another outcome of such a untidy system.

National mission on education through ICT:

Under this Mission, a proper balance between content generations, research in critical areas relating to imparting of education and connectivity for integrating our knowledge with the advancements in other countries is attempted. For this, what is needed is a critical mass of experts in every field working in a networked manner with dedication. Moreover, the ICT can be utilized as a tool in education to enhance the current enrollment rate in Primary and Higher Education. It will be a great opportunity for all the teachers and knowledgeable learners in the institution or organization to enrich their collective wisdom through this holistic approach. The Mission is also necessary to sustain a high growth rate of economy through the capacity building and knowledge empowerment of the people and for promoting new, upcoming multi-disciplinary fields of knowledge. In order to enhance our knowledge resources and to maintain the competitive edge in the world, a system of identification and nurturing of talent and lifelong learning Knowledge modules based on the personalized needs of the learner would need to be delivered to him /her at the right time with the right content interactively to take care of his/her aspirations. Such a system would have to be developed in a cost effective manner over a period of time, integrating, and the following objectives: ● Effective utilization of intellectual resources, minimizing wastage of time in exploring opportunities or desired objects of knowledge appropriate to the requirement. ● Certification of attainments of any kind at any level

acquired through formal or non-formal means in conventional or non-conventional fields. ● Any-time availability of desired knowledge at appropriate levels of comprehension to all for self-paced learning. ● Platform for sharing of ideas and techniques and amalgamating of knowledge resources. ● Systematically building a huge database of the capabilities of every individual human resource over a period of time. ● Nurturing of scholars and learners. ●Support to all the learners or workers for any of their perceived learning needs. ● Extensive leveraging of the advancements in the field of ICT for taking the resources to the door steps of the learner. ● Providing e-books & e-journals, utilizing the repository of contents generated so far and the automation of evaluation processes. Creating a high impact brand for e-Journals in leading disciplines with a provision for good incentive-based payment to the researchers publishing their high quality papers in these e-Journals. ● Improving teachers' training and course curriculum.

Necessity of e- governance in higher education:

The state of Indian higher education has been examined by a number of education commissioners and committees and have identified the major problems and suggested the remedial actions for them e.g. the system of affiliation of colleges, followed by most universities, discourages accountability due to lack of proper monitoring facilities. When we talk of the Indian Higher Education System, there is tremendous increase in the number of colleges and universities. There are number of aspects related to the quality education like progression of course,

quality of faculty members, research facilities given to teachers and students, number of students, examination system and administration. For any Government, it is very important to keep an eye on the above factors prevailed in any university. Although there are number of regulating agencies like UGC, AICTE, Medical Council of India, Pharmaceutical Council of India, BCI etc. which monitors the performance of the university on an overall basis. The quality factors are also assessed before giving NOC to the universities or also before renewing the recognition/affiliation. On these metrics, the universities and colleges are asked to explain the reason for good or bad performance. Presently, the current procedure compels universities to submit the documents to UGC, MHRD, and AICTE etc. separately for various reasons like approvals/renewal of recognition, resulting in wastage of time and lot of stationary. Ideally, a single window should exist for approval process of performance measurement. The need is to deliver services at the doorstep making it hassle free transparent and to facilitate decision makers to get all analysis and decide. As a result of such type of governance, there may be perceptible changes in both administrative and academic output of the department. Minimization of human intervention and discretion exhibits a fair, transparent accountable and responsive system. E-Governance is not doing all the activities on-line or other sort of computerization but it is actually the way to rethink and re-engineer the existing structure of the system of higher education in India with its functions, processes, etc. The fundamental difference between the computerization and e-governance is that the former seeks to replace existing

processes by their electronic counterparts. The latter looks at the needs of citizens and introduces systems that can precisely meet those needs. It is the difference between citizen centric and computer centric. It is well specified that ICT has played a major role in reducing operational inefficiency and improving decision-making in many areas of governance. The introduction of e-governance in higher education is one such concept that can empower the governing bodies to administer the progress of the education plan in the whole country and serves various stakeholders in a much better ways.

If the quality of our higher education system has to be improved to make these institutes really word class, then there is no alternative to the introduction of e-governance in this sphere at the fastest possible pace. Implementation of e-governance in technical and vocational institutes will enable their effective & real time monitoring by Government/the regulatory bodied & other stakeholders their own managements, parents of the students & the society, thereby forcing them to maintain quality & become more responsible. E-governance process brings transparency in the system, so e-governance initiatives in the field of higher education will help reduce the corruption up to a large extent. The introduction of e-governance in higher education is one such concept that can empower the governing bodies to administer the progress of the education plan in the whole country and serves various stakeholders in a much better ways. E-Governance is becoming a global phenomenon that is increasingly attracting the attention of community citizens including politicians, economists, decision and policy makers amongst others. According Info Dev Report (2002) an effective e-governance satisfies these following needs: ● Providing greater access to government information; ● Promoting public engagement by enabling the public to interact with government officials; ● Making government more accountable by making its operations more obvious and thus reducing the opportunities for corruption; and ●Providing development opportunities, especially benefiting rural and traditionally underserved communities. E-Governance in higher education system will enable various stakeholders to control the improved operational efficiency in various key processes like grants, utilization certificates, approval processes, feedback mechanism etc. With deeper visibility and increased operational efficiency the Indian Higher Education System (IHS) would be implemented not only to satisfy the needs of students by making them more employable but also combat possible competition from foreign universities. In order to remove the copying of procedures, there should be consolidated information about each university and college to track their performance. The tools of e-governance may enable the universities or colleges to submit the documents online for approval. All agencies should internally co-ordinate to carry the details from common pool. This would greatly reduce the unnecessary duplication of work in the university. Apart from this there may be a number of other services that can be provided with the introduction of such type of governance. Models of Private Sector Participation in Higher Education: Recently, the University Grants Commission (UGC) has recommended four models of Public Private Partnership to the Planning Commission and

according to an estimate; the country requires an investment of over US $ 150 billion in the next 10 years. The four models proposed by the Planning Commission are in terms of basic infrastructure model. ●Basic Infrastructure Model: The private sector invests in infrastructure and the government runs the operations and management of the institutions in turn, making annualized payments to the private investor. ●Outsourcing Model: Private sector invests in infrastructure and runs operations and management and the responsibility of the government is to pay the private investor for the specified services. ●Equity/Hybrid Model: Investment in infrastructure is shared between government and private sector while operation and management is vested with the private sector. ●Reverse Outsourcing Model: Government invests in infrastructure and the private sector takes the responsibility of operation and management. Colleges and universities will need to change radically in the coming years and first think social intranets may be a key to this transformation.

A. Conceptual framework

Higher education is generally understood to cover teaching, research and extension. Higher education is a source of feeder system in all walks of life and therefore supplies the much needed human resource in management, planning, design, teaching and research. There are different types of decision-makers, like students, parents, employers, legislators, planners and administrators, who are continuously engaged in the process of educational planning and management. It is important for each one of them to have reliable and relevant information they

require for decision-making vis-à-vis education. But more importantly, it seems necessary that each group may be well aware about the information that others may possess. It is their mutual inter-action that makes the decision-making actually effective.

One of the prerequisite for the framework of e-governance is the understanding of various functional units. The successful implementation of framework will heavily depend upon the identification of its components. The following figure depicts the functional interactivity between Government and its stakeholders. The proposed e-governance framework aims to provide an integrated approach to the higher education by leveraging ICT, for the development of higher education in the country.

B. Computerization at University Level:

The computerization at the university level can be seen in the context of three levels i.e. Student, staff, and administration. The management of information among these units is a challenging task which can be easily dealt with computerization. In view of limited resource and revenue, the computerization of universities would be more challenging. The digital divide will multiply this challenge in reaching a larger segment of the stakeholders, especially the students. Lack of infrastructure, scarcity of local technical expertise, unnecessary bureaucratic and weak legal supports, makes it more difficult for universities in India to implement e-governance.

C. Information Management:

Information management (IM) is the collection and management of information from one or more sources and the distribution of that information

to one or more audiences. Management means the organization of and control over the structure, processing and delivery of information management in higher education should include

- Information about the Regulatory bodies under Ministry

- Information about the norms / rules / regulations / deadlines pertaining to courses, funds etc

- Information about the faculty members of all universities

- Information about the courses / syllabi

- Information about admission in various universities

- Online submission of applications

- Library resources

- Result

- Activities including seminars / conferences / alumni

- Information on the schemes of central Govt.(U.G.C.) like career advancement

- Information related to internal staff on departmental procedures like G.P.F., advance, pension, V.R.S., retirement benefits etc.

- Information about the courses been offered in the various government aided and self finance colleges, admission criteria, fee structure, extra- curricular activities being offered in each of the colleges

This will provide the online access to the information to the stakeholders like placement agencies, business, researchers, faculty, parents, peer universities, other coordinating and accreditation bodies etc. With the help of proposed framework it is possible to design a system that is student centric and can provide a variety of services— informative, interactive, transactional and integrated system across the entire spectrum of the education sector. Central Universities, State Universities, Autonomous Institute, Deemed and Private universities and affiliated colleges will enter the data and caters the need of MIS of regulating and coordinating bodies. The data collected from various Institutions of Higher Education will be diverse and may be classified.

D. Online Management Information System (Online MIS):

Integrated MIS may have the following modules:

- Admission and student details

- Student management system

- Faculty profile

- Subjects / courses offered along with examination results

- Knowledge resources including library

- Affiliation function

- Administrative functions

- Personnel management system

- Budget / accounts / finance / treasury and audit system

- Smart card based system for the students and staff.

- it can be used by the authorized person only (having biometric feature like finger print etc)

The data related to the student's personal record, finance, infrastructure, academics etc is collected from many

different divisions of universities, colleges, autonomous bodies and other institute of higher education. This data is stored and made available for various other services of e-governance. Users can tap the system and find out the related information needed. The higher education coordinating and regulating bodies could obtain the reports on various issues about future planning like budget, demand of courses etc. The regulatory body has a critical role to play according to this model. These units will be responsible of data integration and will cater the need of various stakeholders. Following are the main activities required in this process.

Benefits of e-Governance in Higher Education:

The benefits of e-governance in an educational sector are improved efficiency, increase in transparency and accountability of educational administrative activities convenient and faster access to services, and lower costs for administrative services. The multi-faceted benefits of e-governance can be described as under these points: ● Benefit to university (i) Centralized information access from anywhere (ii) Increase in student enrollment ratio. (iii) Provide quality e-services, e-participation, (iv) Increase clearness (v) inventive teaching tools (vi) Improved decision making, Private Public Participation (vii) less paper work ● Benefits to students (i) Increase participation in education affairs (ii) Personalized login for each students (iii) extensive saving in time cost & efforts (iv) Information & transaction services (v) Job opportunities (vi) Social connectivity for collaboration (vii) Students can access virtual lectures &Seminars. (viii) Students can solve their problems like- examination queries;

result verification etc. (ix) Students can submit feedback to university. ● Benefits to colleges (i) Data can access easily (ii) Electronic data exchange with university (iii) Saving of hidden operational cost (iv) Instant statistical report generation (v) Helpful for NAAC accreditation ● Overall education system (i) Long term impact on organization goals (ii) Improve education system (iii) Empowerment of faculties, students & encouragement of their participation in governance. Suggestions and Recommendations: The online methods enable more effective education and offer significant advantages over traditional services. Provide E Services – After the implementation e-governance, we improve the delivery of services to students, faculty by providing services like enrollment, examination, result, feedback, requests for documents, requests for certificates, issuing admit cards and ID cards, employment etc.. The system provide timely alert to colleges through SMS/Emails. E-governance in education provides new ways of communicating to the students, imparting education and organizing and delivering information and services. Improved education system -E-governance in education sectors allows use of information and communication technologies with the aim of improving education, improve information, service delivery, encourage student participation in the decision making process, making administration transparent and effective and give universities a new channel of educational unemployment. Also, the system can obtain feedback from industry and students to modify course curriculum if deemed appropriate by the authorities. This will allow all the lesser performing colleges to reduce the gap with better performing institutes. It will be help in the betterment of the higher education in

the country and increase the number of employable students. Innovative Teaching Tools – The new technologies offer vast opportunities for progress in all walks of life with the introduction of new technological initiatives the structure of higher educational institutions has changed. The changing role of lecturers, the changeable learning environment and the design of e-Learning facilities all contribute to a potentially more flexible organizational structure of higher education in rural area. The future delivery of education will be based through eLearning technology providing lecturers with superior teaching tools. The online methods enable more effective education and offer significant advantages over traditional teaching methods. This has been possible by technological implementation based environments such as bulletin boards, virtual lectures and e Libraries and video conferencing. In e learning environment can support communication with classmates and lecturers. Private Public Participation – almost all e-government projects have found it convenient to involve different private agencies for different tasks through public-private-partnership (PPP) arrangements. These tasks include design and development of application software, population of data and content in the regional language, procurement and installation of networking and computer systems, deployment of software and delivery of services. Centralized Information - E-Governance has provided electronic information infrastructure to simplify service delivery, reduce duplication, and improve the level and speed of service at a lower cost. The centralized information approach of e-Governance keeps all information at one place in electronic form. This approach of making information secure prevents it against any theft or leakage. Use of intranet - Intranet-based training provides a low cost and knock-on savings, is that it can be a virtual two way system, with students connected to mentors and teachers receiving real-time feedback and support. Managers with employees scattered among sites and locations, particularly if they are so far flung that they are in different areas, need a cheap and effective way to communicate them. ICT is already proven as the way to access knowledge based information from anywhere to anytime but a limitation of the university that they can't communicate with other colleges. With the help of above benefits and suggestions it is possible to design a system that is student centric and can provide a variety of services - informative, interactive, and transactional and integrated system across the entire spectrum of the education sector. Central Universities, State Universities, Autonomous Institute, Deemed and Private universities and affiliated colleges will enter the data and caters the need of MIS of regulating and coordinating bodies. Users can tap the system and find out the related information needed.

Conclusion:

The planning for efficient administration of higher educational institutions, increasing Global Communication Skill, to achieve the world class standard it is necessary to have a improved collaboration and access to information available in all the parts of the world are possible only by introducing IT in Educational Sector with e-governance as a security for maintaining standard. E-governance initiates several programs and policies

which promote the usage of ICT in education. The e-governance needs security for smooth information flow, best practice database and enhanced capacity for information analysis etc. Government should support by enacting favorable legislations and updated amendments for maintaining standards in the educational process and improvements in the related field. It requires completely new infrastructure, procedures, policies and working skills for producing and collecting online information. With the advent of ICT, electronic governance is an emerging trend to re-invent the way the government works, becoming a new model of governance. E-governance can create the transparency between the universities, colleges and students. It will bring forth, new concepts of governance, both in terms of needs and responsibilities. Many problems of higher education system can be solved by the Public Private Partnership model and e-governance.

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