

## **E-GOVERNANCE IN EDUCATION: Areas of Impact and Proposing A Framework to Measure the Impact**

**Dr Sami ALHOMOD**  
**Department of Management Information Systems**  
**King Saud University**  
**Riyadh-11541, SAUDI ARABIA**

**Mohd Mudasir SHAFI**  
**Distance and E-Learning Deanship**  
**King Saud University**  
**Riyadh-11541, SAUDI ARABIA**

### **ABSTRACT**

Information Technology (IT) is said to be the technology of 21<sup>st</sup> century. There has been a huge growth in the field of information technology. Traditionally IT was used only to provide the back office support to organizations.

Nowadays it plays a strategic role in organizations supporting many business functions and also shapes new strategies in organizations. The IT field has also been introduced in the field of governance called "E Governance". This IT based E governance has also been introduced in the field of education. The implementation of e governance in education has led to new broader innovations. E governance has enabled universities to expand their current geographical reach, to interact to prospective students all around the world and to establish themselves as global education providers. This paper examines the need for implementation of e governance in education sector and its possible advantages.

The paper also proposes a framework to measure the success of an e governance initiative in an educational organisation. The aim of this paper is to examine the nature of change in Education with respect to the introduction and growth of IT based e governance.

**Keywords:** E-governance, e learning, Information and communication, education, improved education, E-services.

### **INTRODUCTION**

Before elaborating about e governance in education, let first know the meaning of e governance. UNESCO defines e-Governance as (UNDP- Governance and Good Governance):

*"Governance refers to the exercise of political, economic and administrative authority in the management of a country's affairs, including citizens' articulation of their interests and exercise of their legal rights and obligations."*

*E-governance may be understood as the performance of this governance via the electronic medium in order to facilitate an efficient, speedy and transparent process of disseminating information to the public, and other agencies, and for performing government administration activities.”*

The main aim of e government is to enable the government agencies to improve the relations with citizens and businesses by the use of modern information technologies like wide area network, mobile computing and the internet and also to facilitate better communication between various arms of the government.

E-government uses information and communication technologies to promote more efficient and effective government and makes government more accountable to citizen's .It facilitates improved access to government services and allows greater public access to information. The modern information technology services like the internet, mobile communication, wireless devices and a mix of other technologies are used to implement e government solutions.

E-government plays an important role in providing services to citizens and industry by providing easy availability and access to the information, providing efficient government management and making governments more accountable and transparent to the citizens. The ultimate results of implementing e government are Convenience to government and citizens, Decrease in cost of the services, less corruption and Increased revenue.

#### **WHY INTRODUCE E-GOVERNANCE IN EDUCATION SECTOR?**

A number of studies suggest that ICT based governance has a positive impact on the system of education in a number of countries.

E-governance in relation to Education can improve efficiency and effectiveness of the overall education system. The impact of e governance in education can be measured in with respect to three possible stake holders:

#### **Impact Areas**

<b>Stakeholders</b>	<b>Key Impact Areas</b>
<b>Students</b>	Improved means of education Better service to students Increased participation in education affairs.
<b>Organisation(Universities, collages etc)</b>	Economic Impact. Improved Quality of service. Transparency in operations. Improvement in education system. Increased efficiency of faculties and of administration processes
<b>Overall education system</b>	Long term impact on organisation goals. Improved Education system. Empowerment of faculties, students and encouragement of their participation in governance.

The main purpose for introducing e-governance in education is to enhance good education. E-governance in education provides new ways of communicating to the students, new ways of imparting education and new ways of organising and delivering information and services.

The advancements in the information technologies, internet and the mobile communication provide opportunities to transform the relationship between administration and students in a new way, thus contributing to the achievement of the good education goals. The implementation of information technology may increase the broad participation of the students in the process of achieving good education goals at all levels by providing the possibility of online discussion groups and by enhancing the rapid development and effectiveness of the learning methods. Advantages for the administration involve that the administration may provide better service in terms of time, making governance more efficient and more effective. In addition, the transaction costs can be lowered and the services become more accessible. (Defining E-Governance, UNESCO, 2005)

Implementing e-governance in educational systems will enable effective monitoring of academic standards. Fry (2001) proposes that if universities are to compete in a global higher education market they must introduce the technological advancements and use them as a strategic tool, capable of transforming educational and business practices.

E-governance in education sectors allows use of information and communication technologies with the aim of improving education, improve information and service delivery, encourage student participation in the decision making process, making administration transparent and effective and give universities a new channel of educational deployment. (Fry, 2001; Singh, Donoghue and Worton, 2005). The effective use of IT services in educational Sector can greatly enhance efficiency of the existing system, decrease the costs, and increase transparency in the functioning of various departments. In a broad sense e governance in educational sector provides better service delivery and the distribution of information to students and faculties using electronic means. The possible areas of implementation of e governance in educational sector are. (Defining E-Governance, UNESCO, 2005):

#### **E-Administration**

It involves the use of ICT (Information and Communication Technology) in order to improve administration processes and the internal working of the departments within a Educational organisation

#### **E-Services**

The main aim is to improve the delivery of services to students by providing interactive services. Some examples of interactive services are: requests for documents, requests for certificates, issuing admit cards and id cards

#### **E-Participation**

It asks for greater and more active student , faculty and administration participation and involvement enabled by ICTs in the decision-making process. The use of Information Technology (IT) in every aspect of life has resulted in faster, easier and much better delivery of services by redefining the fundamental principles of delivery of services and operation of service sectors (Sinha, 2000).

Universities and higher educational organisations all around the world have started to implement the advancements in IT to be utilized to provide better services to students and faculties.

The information technology imparted, E governance when applied in education has provided a huge impact on the functioning of the educational sector by revolutionising the way information is provided to the students and other related people to the way education is imparted and the way learning is done. As a result, a wide range of IT applications are being custom developed and delivered in various educational organisations. Some of the areas of which have been immediately impacted are:

#### **Improved education system (Sachitanand,2009)**

The quantity and quality of output from education system has been substantially improved with the introduction of e-governance in this sphere. However in order to be really effective, the e-governance system deployed needs to go beyond mere computerisation of records or processes. The implementation of the e governance has been able to provide the management of the educational institution information about the areas of concern so that adequate action can be taken. An integrated e governance system can enable the authorities to analyze the performance of one of the best performing institute in related field and compare it with other colleges to identify the gap areas. 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.

#### **Enhanced Teaching Tools (Singh, Donoghue and Worton, 2005; Scott, 2000)**

There has been rapid development in learning technologies so as to turn them to advantage in learning. A student who is learning in a way that uses information and communication technologies (ICTs) is using e-learning. With the introduction of new technological initiatives the structure of higher educational institutions has changed over the past decade. Scott (2000) supports this opinion that eLearning is now facilitating a more flexible learning approach. The impact of eLearning initiatives has direct effects on the future structure of universities on both strategic and tactical levels. The changing role of lecturers, the changeable learning environment and the design of eLearning facilities all contribute to a potentially more flexible organisational structure. 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. In an eLearning environment lecturers can offer constant educational support, as students are able to communicate with classmates and lecturers, visit web sites and view course material regardless of their time and location.

#### **Centralised 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.

It allows for creating, managing, and sharing information electronically among the various university/collage departments and the different courses offered by them. That is, information captured once can then be shared and re-used by all authorized users.

This avoids manual transcription and re-entering of the same information repeatedly whenever a student goes to a new university/collage department for some services.

#### **Integrated Services (Sinha, 2000)**

Different types of services offered by different departments like collecting fees, granting admission, administering regulations, paying salaries and benefits, can be availed at one place.

This greatly facilitates the students by allowing them to perceive the administration as a single body to interact with instead of a number of unrelated entities, operating at different locations in different university/collage buildings.

#### **Anywhere, Anytime Information (Sinha, 2000)**

Delivery of public-domain information to students can be done without any official and student interaction. Students can obtain information related to university processes and procedures through an on-line system without interacting with any university official.

In fact, e-Governance allows the average student quick, interactive access to a vast array of information, through computers at home or work or through kiosks in convenient public locations, because this access to information can be available at many different locations and at all hours, there is no pressure on individuals to physically visit a university Office.

#### **Lowering Costs**

E-governance saves universities money. Putting services on the Internet gets rid of the wasted time that is spent on getting the services that otherwise would have been available only in the university. University/collage Web sites are managed through a content management tool. This tool makes it easier to make changes on university Web pages. This, in turn, reduces the time and energy required to keep university Web pages up-to-date.

The E-Governance also provides hardware and software needed to create and update state Web sites. This results in reduction of licensing fees and increases the ability of the state to maintain its Web sites.

#### **Improved Decision Making and Better Planning**

The ability of e-Governance to provide centralised information helps governing body, decision makers and faculties to perform extensive analysis of stored data to provide answers to the queries of the students. This facilitates taking well informed policy decisions for student facilitation and accessing their impact over the intended section of the students. This in turn helps them to formulate more effective strategies and policies for student facilitation.

#### **Better Security and Protection of Information**

The centralised 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. Proper backup mechanisms valuable information helps in protecting the information from getting lost due to natural calamities such as fires, earthquakes, and floods.

## MECHANISM OF IMPLEMENTING E GOVERNANCE IN EDUCATION

Like any other information technology based implementation, e governance in education involves decision making, infrastructure development and underlining the governance principles. The implementation of e governance project can be done at two levels:

- **Managerial level:** responsible for designing of project, fulfilment of resources and ensuring the delivery of high quality services.
- **Academics:** Responsible for imparting knowledge and skills to meet the overall objectives of the e governance system. Also includes the people who receive the knowledge and skills from and provide feedback to the Managers.

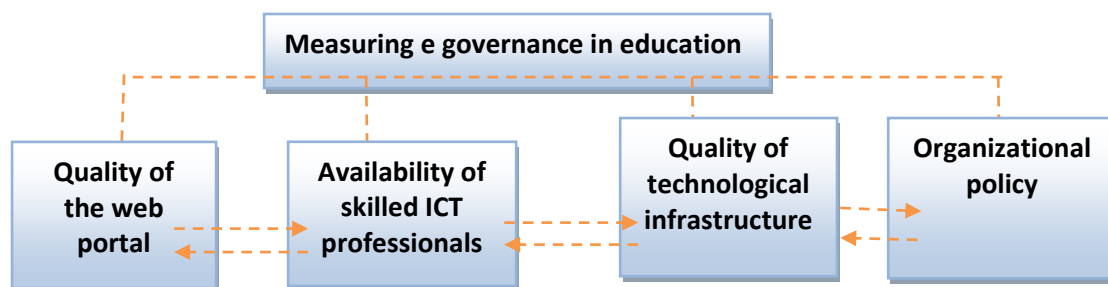
**Table: 1**

Below shows e governance processes found in various literatures

Process	Description
Project Approval	Define strategies and ensure e governance initiatives give significant returns
Project Planning	Define the project ant track its progress.
Designand Development	Develop infrastructure and maintain e governance resources
Maintain quality	Maintain quality of the e governance initiatives.
Evaluation	Involves process of evaluating and quality control throughout the entire lifecycle

## A FRAMEWORK FOR MEASURING E GOVERNANCE IN EDUCATION

The framework for measuring the success of any e governance with respect to education should focus on four pillars given in the figure below.



It's our belief that these four pillars are sufficient enough to measure the success of the e governance in any educational institution. The above mentioned four criteria's for measuring the success of any e governance in any educational organisation are interrelated and are interdependent on each other. The failure in the success of any of the criteria will have an impact on the other factors and will affect the overall success of the e governance initiative.

The objective of this framework is to provide a model for measuring success of e governance initiatives in the educational sector. The first criterion for measuring the success is the quality of the web portal. A web portal offers wide variety of services to its users. The quality of web portal is extremely important because the students and academic staff frequently access web portals for their needs. In this respect the quality of web portal is important as users see its usefulness. When the degree of satisfaction among users increases the success of such e governance initiative increases.

Second factor in measuring the success of e governance initiative is the availability of skilled ICT professionals. The presence of It professionals act as a bedrock of any e governance initiative. Skilled IT professionals are needed to implement the e governance initiatives and to maintain quality of service to the users (students, academia etc).The absence of skilled it professionals can have a severe impact on the success of e governance initiative in any organization.

The third factor to measure the success is the quality of technological infrastructure. Any e governance initiative will not provide desired results unless it is supported by the latest technological infrastructure. The success of this factor will depend on the use of latest technologies to achieve the e governance objective.

The last and the most important factor for the success of any e governance initiative in education is the presence of solid policy at the higher organisational level. If the organisational policy is not committed towards the successful implementation of e governance initiative, the initiative is bound to fail. Any educational organisation must have a dedicated policy towards the implementation of e governance initiative so as to make it a success.

The framework presented above is sufficient to measure the success of any e governance initiative in education sector. Although there are other factors that can affect an e governance initiative but the factors discussed in the framework are sufficient to measure the success of e governance initiative in education sector.

## **CONCLUSION**

The most important driving force behind e governance establishment and development is Innovation. To achieve a world class standard in education it is imperative to have an improved and innovated means of access to information all over the world which is possible only by the introduction of information and communications technology based e governance in educational institutions.

For achieving the goals of efficient administration and to meet the challenges of globalisation, international competition and modern science and technology development, it is necessary to implement fast and reaction based e governance into education sector.

The ways to enhance learning by enabling access to universal information are possible with the introduction of e governance initiatives. For lecturers, e governance programmes represent a change in the way teaching was imparted. For students, e governance has provided an alternative to the ways learning was done by implementing the means in which learning can take place outside the lecture hall.

The focus of the proposed framework is based on the e learning initiatives undertaken in an educational institution. Given that, this rather unexplored area more study should be undertaken to understand the benefits of e governance initiatives in education sector.

Further, a maturity model based on some well-known standards is needed to measure the maturity of an e governance initiative. Maturity models like CMM and eMM can be used to develop a framework which can measure the success of e governance initiatives based on some metrics

#### **BIODATA and CONTACT ADDRESSES of the AUTHORS**



**Dr. Sami M. A. Al HOMOD** is a faculty member in the department of Management Information Systems; college of Business Administration in King Saud University. He worked as the Dean of the eLearning and Distance Learning Deanship. He received his PhD in Information Technology from George Mason University; School of Information Technology and Engineering. He received his Master of Science in Information Systems from George Mason University; Information System and Software Engineering Department. He got his B.S. in Computer Information Systems from King Saud University; College of Computer and Information Sciences. He was A Board member of the Saudi Computer Society. He got a Distinguish Degree in Information Systems from George Mason University and Honor Degree from King Saud University. He is a member of many scientific and administrative committees and attended many conferences and scientific seminars.

**Dr. Sami ALHOMOD**  
King Saud University, Riyadh, SAUDI ARABIA  
Mobile : +966-504131200  
Email: [alhomod@ksu.edu.sa](mailto:alhomod@ksu.edu.sa)



**Mohd Mudasir SHAFI** is currently pursuing Phd from CMJ University, Meghalaya, India. He has received his Master of Science in Computer Science from Jamia Hamdard (Hamdard University), New Delhi, India in the year 2009. He is currently working as a Researcher in Deanship of distance and Electronic Learning at King Saud University, Kingdom of Saudi Arabia. His areas of interests are Data Mining, Web Servicing, Grid Computing, E governance, Mobile governance, Software Engineering and E-Learning. Apart from that he has previously worked as Quality Analyst and software engineer at various MNC"s in India.

**Mohd Mudasir SHAFI**  
King Saud University, Riyadh, SAUDI ARABIA  
Mobile : +966-569886736  
Email: [mmudasir@Ksu.edu.sa](mailto:mmudasir@Ksu.edu.sa)

#### **REFERENCES**

Alaeddini M. and Kardan A. A (2010). E-Learning Governance-Towards an applicable framework, 2nd international Conference on Education Technology and Computer (ICETC).



Baruque L. B., Baruque C. B. and R. N. Melo, (2004). Towards a Framework for Corporate e-Learning Evaluation, in PUC-Rio, Rio de Janeiro, Brasil.

Defining E-Governance (2005). retrieved on 04 April 2011.

[http://portal.unesco.org/ci/en/ev.php-URL\\_ID=6616&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/ci/en/ev.php-URL_ID=6616&URL_DO=DO_TOPIC&URL_SECTION=201.html)

Department of Administrative Services

<http://www.das.state.or.us/DAS/EISPD/EGOV/benefits.shtml>, retrieved on 14 March 2011

E-governance: conceptual framework (2011).

[http://arc.gov.in/11threp/ARC\\_11thReport\\_Ch2.pdf](http://arc.gov.in/11threp/ARC_11thReport_Ch2.pdf), retrieved on 04 June 2011

Fry, K. (2001). ELearning Markets and Providers: Some issues and prospects. Training and Education, 43(4), pp. 233-239.

Governance and good governance.

<http://mirror.undp.org/magnet/policy/glossary.htm> retrieved on 17 March 2011

Kazmi, S. N. A. (2010). Factors Influencing E- Governance Implementation: Issues and Challenges In Pakistan (2010), International Conference on Digital Information Management.

Kumar, P. R., and Murugadoss, K. (2010). "E-Governance and Impact in Educational Sector" [http://www.indianmba.com/Faculty\\_Column/FC1231/fc1231.html](http://www.indianmba.com/Faculty_Column/FC1231/fc1231.html), retrieved on 16 April 2011.

Sachitanand, N. N. (2009). "Integrate e-governance in education sector"

<http://www.digitalopportunity.org/comments/integrate-e-governance-in-education-sector/?searchterm=None> , retrieved on 16 September 2009.

Scott, T. (2000). The Wired Campus, Business Weekly, p. 102.

Shaikh, N., and Kasat, K. (2009). "E-Governance In Education As An Effective Management Control Tool In Developing Human, Second International Conference on Emerging Trends in Engineering & Technology.

SHAJEE MOHAN (2004). "Impact of IT on Higher Education through Continuing Education", <http://arxiv.org/ftp/cs/papers/0411/0411038.pdf> retrieved on 5 May 2011

Singh, G.; O'Donoghue, J., and Worton, H. (2005). "A Study Into The Effects Of eLearning On Higher Education", Journal of University Teaching and Learning Practice, Pg. 14-24.

Sinha, Pradeep (2000) "Engineering eGovernance Solutions"

<http://www.cdac.in/html/connect/3q2000/art02.htm> , retrieved on 10 April 2011.

Weil, P. and Ross, I. (2004). IT Governance-How Top Performers Manage IT Decision Rights for Superior Results, 1st ed. Boston, Massachusetts, USA: Harvard Business School Press.