Chapter 4

Contribution of ICT in Transformation of Governance in HEI

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Contribution of ICT in Transformation of Governance in HEI

4.1 Introduction

The introduction of e-governance has greatly improved the quality as well as quantity of output from education system. In order to make it really effective, the e-governance system deployed needs more than computerisation of records or processes.

The word Electronic governance itself interprets the use of integrated information technology systems developed for speedy, reliable and transparent functioning of the organization. Information and Communication Technology (ICT) is used for strengthening administration and management in higher education institutions. The effective use of ICT can greatly improve efficiency in the functioning of different departments of HEIs. It decreases the costs, and increases transparency of the system. With E-governance transparency is brought in the system, thus it reduces the malpractices to much extent. It provides a better interface to students, parents, teachers and administrative bodies of the institutions.

The effectiveness of ICT Applications in higher education is based mainly on Technology Infrastructure, Knowledge Infrastructure and Organizational Infrastructure. This can be represented by the following diagram.
These three pillars for higher education institutions can be made stronger, useful, effective and efficient by the use of ICT.

4.2 ICT in Higher Education Institutions

Information and communication technology is used for two major purposes in higher education.

1) Teaching
2) Administration.

The stakeholders of the higher education institutions identified are students, faculties, other HEIs, university, society and management body of HEIs.

University governance (Mutagahywa B. , 2012) has been defined as “the means and processes which facilitate the functioning of a University in terms of making right decisions and take actions at the right time.” It also refers to both the relationships between internal and external governance structures and stakeholders and the manner in which they influence each other.
The focus of this study is mainly on the e-governance that is on the administration part of higher education. Current ICT trends such as e-commerce and e-administration have been effectively used in the governance of educational organizations.

Information and Communication Technologies are widely used almost in all business and service sectors. With the advancement of technology information is managed very easily and much simple manner. Information is very crucial for any organization and thus it should be managed properly. Educational institutions also need to store and manage large amount of student and other data of various resources for quick access of information whenever required. The governance of data in higher education is linked with many different sub-modules like admission, personnel, exam, purchase, library, etc. Many customized software as well as standard software are available at cheaper rate and it is possible for almost all the institutes and colleges to take the advantage of the technology for efficient working and effective output.

4.3 Important Features of HEI e-Administration

- Work in team – The integrated electronic system needs cooperation and coordination of the individuals related to the systems.

- Helps to achieve aims and objectives of education – the main aim of any educational organisation is to provide quality education to the students. E-administration helps the faculties to save time and focus on imparting knowledge to the students.
• Provide service to society for progress and to individuals- e-administration gives transparency to the system and hence the stakeholders can get the knowledge of the students and overall functioning and activities of the institution.

• Concerned with diverse human beings, the teachers, staff, students, parents and their coordination.

• Concerned with the maximum utilization of resources for education.

• Organize, order, facilitate and improve the efforts of people in the realization of the goals of education.

Thus ICT used for e-administration of HEI then it leads to following advantages:

• Integration of e-governance in education sector- Due to integration transparency is introduced and hence with the help of ICT all the stakeholders of HEI (students, staff, Management, Parents, other HEIs, industries etc) are able to view the details of the educational institution.

• Improved education system - use of technology streamlines the procedures and processes in the institution. Systematic flow of procedures results in efficient, effective, timely and speedy work.

• Monitoring of academic performance- With the technology, the monitoring of personnel or any job is done automatically. For example, the attendance of staff, students is recorded by biometrics.

• Use of Technology –emails, mobile apps are utilized for communication purposes among the students, staff and parents. In each functional area of the institution the use of technology increases the efficiency of the system.
• Organisation and administration of colleges- with the help of integrated system
the administration of system becomes easier and hence helps to make quicker and
correct decision.

ICT in administration of higher education institutions has been introduced since
1970s. It included student admission details, results, accounts, finance and personnel
management information. With the increase in student population and changes in the
education system with the addition of new streams, in the management of information,
ICT was found to be useful for efficient, quality and effective working. ICT applications
included e-governance, online registration of students, online payment of fees, online
discussions etc. using ICT for e-governance ultimately helped the management to take
the decisions for strategic planning.

Technology (internet) is one of the most effective ways to increase the student’s
knowledge. All are aware of the significant role of ICT in our life. In the educational
activities, governing authorities should be wise enough in implementing the strategies to
empower ICT in supporting the teaching, learning and administrative processes. ICT is
the secondary option to improve the effective and meaningful educational process. The
main purpose of the strategy for ICT implementation in education is to provide the
predictions and tendencies of integrating ICT into the general educational teaching and
administrative activities. The unavoidable fact in the modern education is that the ICT is
developing very rapidly nowadays. Therefore, in order to cope up with it, the whole
educational system should be reformed and ICT should be integrated into educational
activities. The influence of ICT, especially internet (open source tool) cannot be ignored
in our student’s lives. Thus the teacher’s focus should be on imparting the knowledge to
student and not completing his routine administrative tasks. ICT should be used for daily routine administrative tasks so that teaching staff can get time for knowledge upgradation and study new technology so that it can be implemented for teaching learning process.

The various departments where ICT tools can be used for governance of information in higher education institutions are

- General administration
- Student admission
- Personnel administration
- Purchase and inventory
- Library
- Accounts
- Exam

The following diagram shows the integration of different departments of higher education institutions with the help of ICT tools for e-governance.

![Diagram showing integration of Functional areas of HEIs using ICT](image)

Figure 4.2: Integration of Functional areas of HEIs using ICT
With the use of these technologies the required information can be communicated to the respective departments for fast, correct, reliable and smooth processing of the institution.

4.4 Administrative uses of ICT in different functional areas

Various activities are carried out in each functional area. The processing of these areas needs the information that is common. It is shared with the help of communication tools. Sometimes the processed information may be required by the other departments for further processing. This can also be shared by ICT tools. Some general activities in these areas are identified. The list of specific functions in each area is shown in the following table.

<table>
<thead>
<tr>
<th>USE OF ICT</th>
<th>SPECIFIC FUNCTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>General administration</td>
<td>Maintenance of communication channels, linking of all the functional areas.</td>
</tr>
<tr>
<td>Student admission</td>
<td>Student registration, enquiry handling, admission cancelation, testimonial listing,</td>
</tr>
<tr>
<td></td>
<td>TC generation recording attendance, fee payment and alumni data storage</td>
</tr>
<tr>
<td>Personnel administration</td>
<td>Personal details of staff, staff attendance, payment details</td>
</tr>
<tr>
<td>Purchase and inventory</td>
<td>Generation of purchase order, maintenance of stock, dead stock</td>
</tr>
<tr>
<td>Library</td>
<td>Book assessment, issue and return transactions, registration, fine collection</td>
</tr>
<tr>
<td>Accounts</td>
<td>Budgeting, purchasing, grants administrations, cash flow, account receivable,</td>
</tr>
<tr>
<td></td>
<td>account payable, audits</td>
</tr>
<tr>
<td>Exam</td>
<td>Student attendance record, marks calculation, result generation</td>
</tr>
</tbody>
</table>

Table 4.1: Major Functional areas and their functions
Various activities are carried out in each functional area. The processing of these areas needs the information that is common. It is shared with the help of communication tools. Sometimes the processed information may be required by the other departments for further processing. This can also be shared by ICT tools. Some general activities in these areas are identified. The list of specific functions in each area is shown in the above table.

Thus a functional integration of different departments and their activities can be summed up by the following diagram

Figure 4.3: Functional Integration of departments of HEIs
ICT is used in almost all the colleges of North Maharashtra University and the University of Pune. One a highly established university and the other one is in the developing phase.

With the use of ICT for e-governance in higher education all the stakeholders of the HEIs can communicate with each other very easily. So we can say that ICT helps to (Dr. K. Murugadoss)

- Automate Admission process
- Manage Student Information Efficiently.
- Manage Classes, Subjects according to requirements.
- Maintain Transport Maintenance Management.
- Maintain effectively Students & Staff Attendance.
- Automate Library.
- Staff Salary Generation & expenses Management.
- Automate Examination Management System.
- Maintain Grades, Create Grade Book.
- Analyze the Performance of a class.
- Countless MIS Reports Generation.
- Automate accounts and inventory (SAP).
- Intranet Mail Service for all heads and Admin staff.
- Internet and School Mail Id to heads and admin staff for Online Collaboration.
- Grievance addressing of stakeholders by using e-mail, SMS and telephonic service.
• Online Firewall protection of all the machines connected to internet using Fireguard firewall.

• Internet on demand for students and teachers.

In one of the latest issue of CSI Communications a new model termed as SMAC is suggested for higher education with the utilization of information and communication technology. The authors stated that “SMAC stack services is a new enterprise IT model that blends social, mobile, data analytics and cloud technologies to improve business competitiveness”. (Gohel & Gondalia, 2014)

An integrated system can enable the governing body to analyze the performance of the individual and the institute. The analysis can be used to motivate the individuals to perform better and reduce the gap between the highly performing people and staff with low performance. This may lead to develop employable students.
References


Gohel, H., & Gondalia, V. (2014, October). Role of SMAC Technologies in e-governance agility. CSI Communications Knowledge Digest for IT Community, 38(7).