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Impact Of Information And Communication Technology In Reforms Of University Examination System

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A B S T R A C T

During the last three decades the use of Information and Communication Technology (ICT) has fundamentally changed the practices and procedures of nearly all forms of endeavor within business, governance and almost all sectors of our life. This happened due to the great evolution of computer and communication technologies and extensive use of computational devices for handling of Hugh data and information at different workplaces. Also, there has been significant and cost effective developments and spread in internet technologies and multi-fold increase in users of internet. Because of this it has made it possible to have a strong network of connecting devices, resources to common public for cost effective information exchange at very high speed with great reliability. In the last decade, ICT has totally changed the life style of the society and has out dated several manual systems at all most all work places. Due numerous advantages of ICT, it can be implemented on any system which require handling/processing and transmission of Hugh data information from resources to end users. A university examination system which involves Hugh records of students, teachers, examiners, moderators, subjects, courses and affiliated colleges. Also, it involves several processes on these records right from filling of examination forms to declaration of results which were carried out manually before ICT came into existence. The present paper focuses attention on reforms which can be achieved in current examination system by implementation of ICT.

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Introduction

Information and communication technology (ICT) is the acquisition, processing, storage and broadcasting of vocal, pictorial, textual and numerical data and information by an electronic based combination of computing and telecommunication. It spans a wide variety of areas that include, but are not limited to things such as processes, computer software, computer hardware, Programming Languages and data communication. In short, anything that renders Hugh data, information or perceived knowledge database in any text or visual format whatsoever, via any multimedia distribution mechanism with help of computer and internet or radio communication considers part of the domain space known as Information Technology. The very important characteristics of ICT are Acquisition, Storage, manipulation, management, transmission or reception of data or information at very high speed. Besides this ICT offers real time access to information, Connecting Geographically dispersed regions with a wider range of communication media. ICT uses electronic systems used for communication between individuals or groups, who are not physically present at the same location. Systems such as telephone modem, telex, Fax, ATM machines, radio and T.V., smart phones are included, as well as more recent computer based technologies, including electronic data interchange and e-mail. Due to these electronic communication systems, it has made it possible to make available data and information resources to the end users at remote places, instantly. Because of this ICT has become very popular and brought greatest revolution in the technological development of our nation. It has a solid perception in every walk of human life and it has great impact on the lifestyle of the society.

Challenges Of Current Examination System:

Though the current examination system is organized in a well-defined order, still the movement of paper based records is slow. The examination process in this system continues for months, causing both physical and mental strains over the students and other staff involved in exam activity. The current examination system is prone to errors, more time consuming and renders an inefficient use and wastage of valuable resources, increasing paper based load of record registers which are difficult to store securely due to space scarcity. There is

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repetition of work in the existing system because the same data is already recorded in different branches of the examination. This leads to data duplications as well as huge money is spent by the university on stationary. In the existing system, managing of students' record is very tedious. Retrieval of students' records through manual registers, maintaining of records and data reconciliation etc. are very time consuming and laborious. In current examination system, there remain chances of tempering of students' records. Sometimes fake degrees are prepared and there is no online verification of the same. This leads to unfair practices and also it ruins the credibility of a university.

Examination system plays very crucial role in the functioning of any University. Examination system has worked in 3 phases, namely pre-exam, conduct of exam, post exam. All these three phases during their execution have involvement of several human resources and several other factors pertaining to students, colleges and Universities and other hiring or outsourcing agency. Because of several interdependencies and the involvement of several factors executions of the examination system without any errors and malpractices, has become a hard and challenging task. Similarly, at the same time there are several constraints on this system such as time of 45 days for declaration of result etc.

Pre-Exam Phase:

This phase typically consists of activities like the issue of forming a panel of examiners, setting questions papers, deciding exam fee structure, generation of examination application Forms, notification of examination centers, examination schedules etc. to students, generation of hall tickets, printing and distribution of question papers to respective examination centers. At present some of the above processes use ICT and are automatic up to a certain extent. But the setting of the question paper and printing them involves the intervention of external agencies, which can lead to leakages of question papers. To avoid this, we propose an ICT based model, which will generate question paper just 2 hours before commencement of the scheduled exam paper, without human intervention. In order to implement this model we need to have an elaborate bank of questions of various types of marks 2,4,6 and 8 in each subject. The pattern

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of the question paper (QP) and weightings of each topic in the syllabus will already be stored on central server of university for each course. Using program for generation of QP, several sets of question paper can be generated by randomly selecting questions of weightings of 2,4,6,8 marks. After generating the QP it can be transmitted to exam center where it can be photocopied for distribution, within a time margin of 2 hours before the start of the exam. Thus, with the use of ICT the generation and distribution of question paper, we can remove human intervention to a considerable extent. Also with this model multiple sets of QP such as A, B, C, D can also be implemented for each course.

For this model there is a need of enough ICT infrastructure and uninterrupted internet connection and very good and fast mass photocopying facility. With the use of this model university can save a cost on printing and transportation of QP packets to exam centers, on the other hand exam center has to incur expenses on photocopying, but this would reduce the leakages of QP considerably. This model uses an internet for transmission of QP, the security aspects of the web application need to be considered. The system would incorporate the user authentication. Every user who upload, publish, download paper will have a unique username and highly encrypted password. QP upload and download is also protected with permission according to admin user only. There will be need to set different security privileges for anonymous and authenticated users and facility of group based access according to no of registered exam centers at remote places.

Exam Phase:

It actually involves opening of sealed QP packets, conduct of exams at respective centres, collecting and packaging of AB (answer books) to get it ready for safe transportation to the University. Exam centers of affiliated colleges will have their own infrastructure, operating system and human resources to manage this process. The system has several loopholes for malpractices as it revolves around several people such as Sr. & Jr. supervisors, exam staff, Principal etc. Implementation of ICT will remove the human errors and efforts for generating various reports manually. Various summary and block report will be automatically generated and Jr. Supervisor only needs to fill in AB numbers and make the absent number on his

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report. So through the ICT writing of repeated data information can be avoided. We propose to use surveillance camera and centrally monitored CCTV in exam halls for getting rid of cheating and copying cases. Going in more advances one can use the bar code reader to read the AB number of each student and store permanently on exam main server which will generate the Jr. Supervisors report then. When all data about a block, student, subject, date and time of the exam is there in the computer at the center, the packing slips can be automatically generated and all data can be sent to University the same day.

Post Exam Phase:

It involves evaluation of Answer books, results processing and revaluation. Evaluation of Answer books which is a more time consuming process, which cannot be made automatic in present scenario of the examination system. But certain measures can be taken to reduce the time of evaluation with help of ICT. We propose to have a central up-to-date and database of examiners including their address and phone number on University computers, which will also have history about the examiner and the courses he has been teaching since last 10 years. Also university should prepare an extended panel of examiner for each subject and course. All this data will be readily available on University computer with a given time frame. This will ensure availability of approved examiners for each subject and course. Due to this it will be possible to inform all examiners well in advanced about their assignment for evaluation and moderation and call all of them for evaluation. In current system not all examiners' reports for evaluation work and the rest have to do more work to complete evaluation. There is a need of strategic planning and scheduling of the entire process of collection of AB from various countries and their transportation to CAP Centre. In present system this process is not well planned and therefore there is a delay in receiving bundles from remote centres. As all bundles do not reach in stipulated time frame, masking work cannot be initiated by then. Therefore, there is considerable time for which answer books remain idle and it does not come in to process of detaching III slip. Without masking these answer books cannot be given to the examiners, and there is a substantial time lapse before examiners actually start the evaluation.

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Use of ICT would certainly help in such planning and execution. More advanced use of ICT can enable the automation in detachment of III slip by implementation of high-tech hardware to the computer system. This will eliminate manual and redundant work of writing labels on group of detached slips. During the assessment/moderation work is there is a frequent access to answer books of various subject, course. However, there are a large number of subjects and courses old and new of various types. Each type is having unique subject code and computer code. For easy access to all types of answer books code wise, we propose to have a good physical storing infrastructure with labelling facility. So that particular subject code answer book can be easily accessed multiple times. Such kind of physical storage will be of great use in saving search time of the particular answer book at the time of re-dressal or revaluation.

Conclusion:

The use of ICT will reduce the human intervention and bring automation and speed in a University Examination system with remarkable advantages such as elimination of paper setting work, thereby saving on human efforts, time and TA/DA of examiners, expenses on stationary and envelopes and other documentation required by external printer, removing paper leakages etc. ICT enables distribution of the question paper on the day of examination, reducing a huge amount of operating expenditure and logistics issues and leads to faster processing of the examination system and result declaration. Also, there is a need of well-planned tight scheduling of all events that should take place after the answer book is written by the student. We need to minimize the idle time at center, time of transportation and idle time at the CAP center before the answer book is getting ready for going into examiners hand for evaluation. With the use of strategic planning and implementing ICT this time can be reduced so as to declare the results in stipulated time frame. Entire ICT based process management will be governed by University Exam Department without any delay or mistakes, making a more transparent system, reducing all malpractices with the help of technology, resulting in a better quality functioning of the Institution. For implementation of ICT based reforms the University need to have up-graded in existing IT infrastructure, modifications in the current

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system. Exam centers also need to establish ICT supporting infrastructure and trained staff to operate these systems.

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