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Effective Use of Human Asset in Higher Education By Using ICT

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Abstract : Many Higher Education Institutions [HEI] in Maharashtra are following traditional methods to serve their stakeholders. Which is causing unnecessary financial burden as well as affecting quality of services and leads to improper human asset management. To enhance the quality of education, the academic as well as administrative services should be reconstructed and enhanced by the effective use of Information and Communication Technology [ICT]. The reengineering of business processes by using ICT are useful in enhancing the services. To fulfill the increasing demands of all stakeholders, it has become unavoidable to optimize the use of ICT techniques. The ICT based application is implemented to deliver photocopy of answer books of students and to resolve the issues regarding verification of marks as well as revaluations of answer books. The marginal cost saved in the revised process at the same time the quality of service offered by University is also better. The manpower issues like shortage of skilled workers, human errors, malpractices are resolved. Thus ICT enabled application helps in human asset management.

Keywords : ICT, Human Asset, Higher Education, Paperless, Grievance Handling

1.0 Introduction :

The term ICT is globally used for Information and Communication Technology. Information and Communication Technologies consist of the hardware, software, networks, and media for collection, storage, processing, transmission and presentation of information (voice, data, text, images), as well as related services (shakunta,2012). Nowadays, Information and communication Technology has become an integral part in Higher Education Institutes [HEI]. Considering the competitions amongst the HEI's the Human Assets management has become very essential. In India particularly in state Universities Human asset management has become unavoidable and become mandatory due to shortage of skilled man power. The shortage of skilled manpower adversely affects quality of services in higher educational institutes which results in poor academic performance. To overcome this shortage, ICT can play a vital role in effective Human asset management. Many of the business processes in HEI like evaluation, assessment of students can be reconstructed without tempering its original outcome by through use of ICT.

With the convergence of technologies, it has become imperative to take a comprehensive look at all possible information and communication technologies for improving school education in the country. The comprehensive choice of ICT for holistic development of education can be built only on a sound policy. The initiative of ICT Policy in School Education is inspired by the tremendous potential of ICT for enhancing outreach and improving quality of education (Ministry of HRD [GOI], 2012).

2.0 Statement of the Problems:

The Higher Education Institutes in India are facing the problem of skilled and techno savvy man power. The market and organizational needs have changed drastically. Intense competition in education and other service industries has created complexities. The Non agricultural state

Universities are also sailing the same boat. Shivaji University is one of the reputed state universities offering traditional as well as professional education programs in the field of Arts, Commerce, sciences, Engineering, Technology, Pharmacy and Management. The vast use of electronics gazette by university's main stakeholder ie. student, parents tend universities to offer many services digitally instead of traditional methods.

This study is intent to answer following research questions:

1. How is ICT useful in Human Asset Management?.
2. How ICT can be implemented in various business processes in HEI?.
3. What are the possible areas in HEI's to use ICT effectively. ?
4. What are the Challenges in Human asset management and limitations of ICT in HEI?

3.0 Objectives of the Paper:

1. To study the benefits of ICT applications in HEI.
2. To examine human asset management by using ICT.
3. To study the benefits of ICT application
4. To study the challenges in ICT implementation in HEI

4.0 Research Methodology

Procedure of Data collection:

The data was collected through the following procedure.

Primary Data:

The primary data will be collected through field survey and through the use of Focused Group interview, discussion and observation techniques. The researcher has interacted with the Head of sections, Administrative staff, students, Directors Board of Examination and Evaluation, Information Technology coordinator and software experts in Shivaji University, Kolhapur. Also the data was collected through personal interviews.

Secondary Data:

Secondary data was collected from the database, books, university references and publications, journals, articles, magazines, handbooks, newspapers, primary reports of examination departments and institutions, using reference books available in Balasaheb Khardekar Library, Shivaji University Kolhapur. The researcher also visited the Information Technology cell, Examination department for the purpose of collecting references, similarly, use of the internet and website related to ICT, Higher education development. The Photocopy system reports was considered for the research purpose

Approach of study :

At the onset, the researcher followed an approach that was systematic and collaborative in nature to achieve greater impact and obtain results given time. In this study, the approach consisted of distinct phases yet tightly integrated for achieving the targeted outcomes. The key phases of the study included:

Phase 1 - Study of previous process conducted : In this phase, the researcher has studied the traditional method of inviting applications from students to demand photocopy, revaluation and verification of answer books.

Phase 2 - Study of needs and problems of stakeholders : In this phase, researcher has studied the problems reported by the stakeholders and the need of reengineering of business process

Phase 3 - Study of newly designed and implemented system and collection of data : The researcher has studied the newly implemented business process to call applications for photocopy , revaluation and verification of answer books. The actual working of ICT based application process. And also collected the statistical information about the traditional as well as modified ICT based application.

Phase 4 - Study of effectiveness, benefits , drawbacks of system : The researcher has studied the benefits , effectiveness and limitations of newly implemented software application.

Phase 5 - Analysis and conclusion : The researcher has analyzed the collected data, calculated the outcome and conclusion of revision.

5.0 Scope of the Study:

Geographical Scope :- This study was conducted in Shivaji University , Kolhapur of Maharashtra state

Topical scope : - With reference to topical scope concern , this study was focused on ICT implementation of various business processes like Photocopy , Verification, Revaluation, Re Verification etc at the examination department of Shivaji University.

Time scope :- The estimated time for this study was considered from 2014 to 2019.

Analytical Scope : - The collected data has been analyzed with the help of statistical tools and computer softwares like SPSS, MS EXCEL, online randomizer for the fulfillment of objectives set out

Functional Scope : - The functional scope was confined to offering a set of meaningful suggestions aimed to implement ICT in the higher education institutes to reduce manpower, to promote paperless concept and to make effective human asset management.

6.0 Limitations :

The first limitation of this study is that every university has different business processes. The processes modified with use of ICT may different. The suggested case may not be applicable to every university.

The second limitation of this study is that ICT application can't be the solution to all the processes in the University. ICT can aid in curbing many irregularities and can overcome major repeated work. However, inculcation of strong ethical and moral values in Human beings are more important

7.0 Secondary Literature Resources:

Snehi, N. (2009). ICT in Indian Universities and Colleges: Opportunities and Challenges. *Management & Change*, 13(2). <https://doi.org/10.1242/jeb.089763> studied the ICT implications and concluded that ICTs in the higher education has profound implications for the whole education process ranging from investment to use of technologies in dealing with key issues of access, equity, management, efficiency, pedagogy and quality. In this regard the paper addresses the

opportunities and challenges posed by integration of ICTs in various aspects of higher education in the present scenario. The paper argues for addressing the issues through formulation of policies and strategies to accrue following potential future developments in ICTs and to integrate them in education sector to transform higher education.

A Report on Reforms In Examination system in Universities of Maharashtra through ICT in 2012 under the chairmanship of Dr. Rajesh Agarwal samiti concluded that Information and communication Technology (ICT) should be effectively used for management of examinations in Universities to usher in greater efficiency, transparency and reliability.

Sukanta Sarkar (2012). The Role of Information and Communication Technology (ICT) in Higher Education for the 21st Century explains that Applications of ICTs are particularly powerful and uncontroversial in higher education's research function. Enhancing and upgrading the quality of education and instruction is a vital concern, predominantly at the time of the spreading out and development of education. ICTs can improve the quality of education in a number of ways . The researcher suggests that ICT in higher education is not a technique for educational development but also a way of socio-economic development of the nation.

A National Policy on Information and Communication Technology (ICT) In School Education (Ministry of HRD [GOI], 2012) earmarked the thrust areas in Indian Schools for the use of Information and communication technology . The policy declares ICT for skill development, ICT for children for special needs.

8.0 Results and Discussion :

In Shivaji University, Kolhapur various traditional and professional courses are conducted. The examination section of this university conducts various processes regarding photocopy, evaluation, moderation, verification of student answer books. Traditionally this process was very lengthy as well as expensive in terms of human asset and financial burden on the stakeholders of the university. In this process students have to apply manually on a printed application and have to pay the requisite fee to get a photocopy of the answer book. The CAP section after getting the requisite application raises demand to the godown section. The godown section searches the requisite answer book and forwarded it to the xerox section to produce a photocopy. After photocopy the inward section of University posts printed material at student address manually mentioning the communication address of the student. After getting a photocopy, students again have to apply for verification, re verification, revaluation etc processes as per their need. Then for the same process the student has to submit a manual application form along with requisite fees.

In this manual process students have to visit 2 to 3 times. The human resources are widely used in the repeated and prototype work. Hence University was eagerly searching for the way of effective human Asset Management.

This business process is revised with the help of ICT. ICT enabled application is developed and utilized to dispatch photocopy to the students By scanning and converting paper copy into soft copy. With the help of this application the present status of application is readily made available ktu login and the stage wise development is communicated to the student via SMS. In the revised business process, students need not come personally to the university. The grievances are automatically handled through software. The Figure 1 Shows the mechanism of ICT enabled computer application to handle the student grievances.

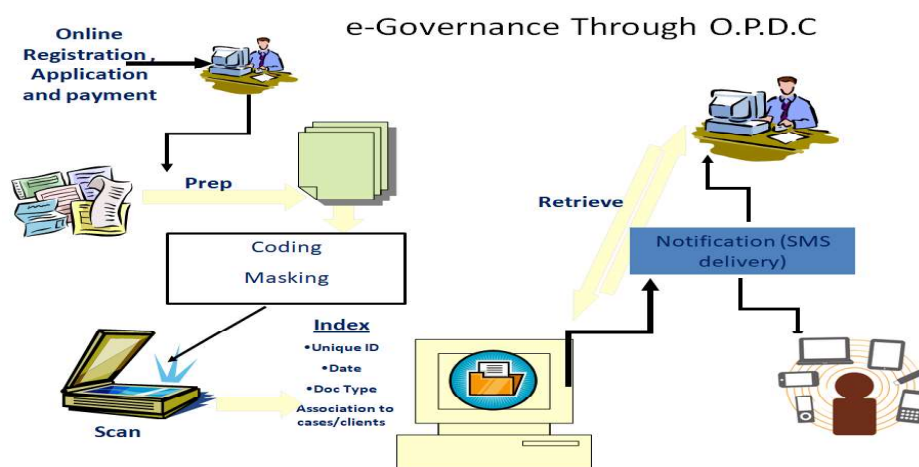


Fig 1 . Online Photocopy Dispatch System
(ICT enabled Application Developed at Shivaji University
Courtesy : Shivaji University, IT Cell)

The following table 1 shows the details of photocopy applications received in Examination department from 2014 to 2019 (Two events in each year)

Year	Number of Photocopy Application		
	Engg. Faculty	Other Faculties	Total applications
Mar,2014	14523	2419	16942
Oct, 2014	13880	2260	16140
Mar,2015	15473	4162	19635
Oct, 2015	15331	2235	17566
Mar,2016	15525	3553	19078
Oct, 2016	15585	2672	18257
Mar,2017	15089	3851	18940
Oct, 2017	12906	3095	16001
Mar,2018	12197	4456	16653
Oct, 2018	9552	3054	12606
Mar,2019	7685	4292	11977
Oct, 2019	5841	3614	9455
Average Applications / Event			16104.17

Table 1.0 - Photocopy application details (Source : Photocopy summary report , Shivaji University)

The average applications per event are 16104 number of applications

To process above applications received at least 1 month (30 days) are required to the examination department. Following table 2 shows the minimum expenses incurred for the processing of a single application.

Table 2 - Expenses / saving in ICT based application method

Manual / Traditional application		ICT Application	
* expenses for	Amount (Rs)	\$ expenses for	Amount (Rs)
Avg postage / application @ 40 Rs	644166.67	ICT Application development charges	40000
Std traveling avg @100 Rs per application	1610416.67		0
xerox/ exp @Rs 18 / application	289875	Scanning @15.6 / application	251225
Total Exp	2544458.33		291225
Expenses (per application)	158		18.08
saving per application	Rs 139.92		

\$ As per contract rates * Average

The total expense for the average number of applications 16104 is Rs 2544458 by manual / traditional method while Rs 291225 by ICT application. The per application expenses are Rs 158.00 for manual method and Rs 18.08 by ICT enabled application. The xerox rate / scanning rates are taken from the agreement of the vendor with the university.

The following table 3. shows the human resources saved by using ICT based applications. In the manual method every process required human resources. While in ICT based procedure, many stages are carried by the system itself.

Table 3. Saving of Man hours

Manual / Traditional application		ICT Application	
Nature of work	Man Hrs		Man Hrs
Collection of Application 1 person * 8 HRs * 30 days	240.00		Nil
Searching of ANS books 8 persons * 8 hrs * 30 days	1920.00		1920
Xeroxing / Dispatch 40 persons * 8 * 30 days	9600.00	Scanning / 10 persons 8 hrs 30 days	2400
Total man hours ⇒	11760.00		4320.00
Man Hours saved per event ⇒	7440.00		

Here for calculation purposes, photocopy work is considered duration of one month i.e 30 days and 8 Man per day .

9.0 Findings:

In the detail study of photocopy process at examination section following findings are observed

A. Manual / Traditional process

- Required plenty of manpower to process the applications and handle the grievances of students. Difficulty to handle manpower issues.
- The time consumption is very high to complete the given task
- The human errors are occurred the causes the academic loss of students
- Unnecessary wastage of papers

B. ICT based process

- Saves time , Money and manpower
- Environmental friendly
- Accuracy in work , Human errors are avoided
- Efficient grievances handling mechanism results in satisfaction of stakeholders.

During the study it is also observed that reengineering of various business processes are more essential. But needs to have approval from various statutory authorities / bodies. Various Rules / provisions in the acts need to be modified according to the new ICT processes. Which takes a lot of time as well as tedious processes. This is one of major challenges in the HEI, especially in the Government undertaking HEI.

10.0 Conclusions :

This paper proves that the ICT based software application is very much useful and plays a vital role in human asset management. The impacts of ICT based application are Increased Efficiency , Maintained Confidentiality, Brought Cost Effectiveness, Nullified Subjectivity, Implemented Digital Initiatives , Reduced Timeframe of Result Declaration , Addressed Shortcomings of Human Resources and Enhanced Accuracy.

The Employees are major stakeholders in every organization. It is critical to administer the various mechanisms in the scheduled time limit. Hence technology based changes in the business processes are useful. The use of ICT in all possible student related activities will be helpful in manpower management in a cost effective manner. The other benefits of ICT applications like transferency , subjectivity , accuracy , confidentiality in examination work are also important factors in human assets management.

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11.0 Glossary :

Application - Software module / program specially prepared to carry out a particular task.

CAP section - Central Assessment Planning Section of University examination department.

Event - The semester in the academic year.

Grievances - problems / queries raised by stakeholders.

HEI - Higher Educational Institution

ICT - Information and Communication Technology

Photocopy - xerox copy of written answer books.

photocopy applications - Application / requests by students to obtain a photocopy of their answer.

Revaluation - Re-assessment of checked answer books on demand.

Verification - Re-totalling of marks obtained by the students

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