# ICT Advantage that creates a paperless Work Environment in an Academy of Technical Educations

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## Abstract

This paper is on the use of an Student Information Management System (SIMS) that facilitated students, teaching and non-teaching staff's to online collect data and also digitally manage them effectively, On use of such systems in the campus, it converts the Academy into a paperless office through its various modules which have been highlighted here along with some suggestions on the possibility on customization to pave way further and hence to much suit the Academy's digital work flow requirements in future.

By the end of the 20th century, almost everyone in organizations around the world realized that information and communication technology (ICT) had been the only technology knowledge that could play an important role and created ample opportunities for their future. Owning to this feeling, all such organizations which were intended on achieving the real fruits by adopting ICT Advantage, almost from the very beginning of the 21st century, did go for this knowledge. Undoubtedly, it is the ICT that factually has given them the special facility of interaction with each other, now providing them instant communications and due to which each person's life situations today appear to be as self-forwarding only. On this wide acceptance and adoption of this ICT based communication system across the world, the whole world has now turned into a truly global one. Therefore, the exchange of communication in ICT became such a fundamental tool of improving some such global relationship by which, this world has become today very enterprising and progressive as well. In fact, the entrepreneurial institutions of all these countries now appeared to be somewhat different from the earlier times. All the processes of doing business earlier, there were paper based environment, the working systems then found as stick to the age old work-culture/processes which were continuously used for several hundred thousand years, although did get refine to some extent over the years. Accessing any necessary information in these paper-based systems has always been a very difficult task because the information structures contained in them, or the methods of obtaining processing were also integrally different that any processing then, was never done in any central location and hence could not also be managed so. Furthermore, in those systems, if any intermediate step even if were taken on processing or retrieval of any information, the step was only found then, only to make this processing even more complex.

The addiction to excessive use of the paper-based office environment in business processes had continued which had remained a clear impediment to the progress of many organizations all over the world. However, the same organizations have become much more effective now with the convergence of Information Technology. IT makes the enterprises achieve astonishingly good results, like reduced cost and increased productivity merely through deployment of their own Enterprise Resource Planning 'ERP' structure [1-2] for example. In all educational schools, colleges and the technical academies, proper record of the teaching and non-teaching staffs as well as those of students and their respective daily academic activities with proper automated management could be developed by using some those similar software applications, as the ERP covering all the internal activities. Now there has also been relief in the

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processes from the paper based environment. It is for this reason, there has been numerous attempts to adopt system of software for concise management of students and their activities in educational technical academies, for example as using "SIMS" (screen shot-1, for example) which is in some limited ways, a form of ERP structure as in the industries. Academic Institutions now have thus been able to manage their day-to-day activities using internal networks and found to manage their day-to-day activities much more effectively by exploiting the available full ICT advantage. These academic Institutions have also developed their own Integrated Student Management System or Student Information System "SIS" or Students Record System "SRS" or Student Information Management System vise "SIM" and used. This is in a way also appears as fulfilling the resolution made earlier during the implantation of e-governance in the country [3].

## Structure of an implemented "SIM"

Student Management System (SMS) is one of the available commercial software for running different tasks throughout the day and effectively manage all the activities within any academic Institutions.



***Screen shot 1:*** A Student information management system.
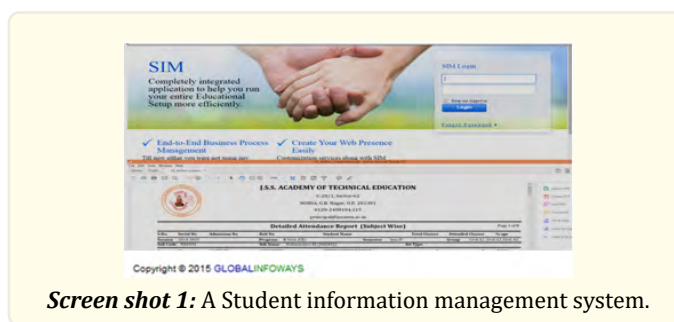
Deployment of any such SIMS systems however, requires two basic parts, that primarily includes, all the computers to act as and when required, as the clients in a LAN that always remain connected to a Server within the campus. All academies, with the help of available technologies of their IT department themselves have now integrated all the available IT tools to make them working together within the institute LAN and thus formed an essential integrated chain (Intranet). Over such Intranet, any SIMS then becomes more effective and found as able to bring about changes leading to the paperless offices of these academic Institutions. The required modules of these SIMS as needed are to be equipped with some key functions and these are depicted in the following screen shot-2. Everyone in the Institute then may utilize these capabilities on day to day basis and can do the work of searching general information related to the students for example. For effective implementation of SIMS, out of some developed and commercialized by different IT companies, for example, an Student Information Management System (SIMS) so developed by the team of IT firm named 'Global Infoways' based in NCR, the modules of which are successfully adapted in a technical education academy in Noida, is what has been highlighted here in this paper. At the time of this reporting, the various core modules of this SIM software included then are HR, Accounts, Exam Results, Attendance, Feedback etc. which are essential for creation of any paperless workplace in the academy. Those entire core modules, based on the wideness of their use in providing the general information are all described here as in the following paragraphs [4].

## Employee Module



***Screen shot 2***

It helps the Academy's employees to manage all the aggregated information regarding individual and their work efficiency. Help of this module was taken to maintain the records of all the employees at one place and also get their information updated from time to time as per the requirement.

## User Rights Management Module

With this feature, the system remained protected on its use by unauthorized access. Any user that enters the system could only access functions for which they were authorized by this System Admin Utility Module. Authorized person like Head of Departments, Proctor or Principal could view the attendance details on all the authorized modules once given access to do so from their own system only. Heads of departments are given some additional powers as compared to other faculties, Proctors are given attendance related full rights. There is transparency in the management of the institute even though the rights of use are reserved.


*Screen shot 3*

## Financial Expenditure Management Module

Under this module, the budget allocated for the entire session of the college could be managed by planning title wise or management of financial expenditure, title wise. Also, once the financial data is uploaded, reports based on the number of days, every week, every month and every year of financial expenditure of the institute could thus be obtained as and when required. For example, it also remained possible from the transport module, to audit the financial expenditure on transportation of the academy as well that on the maintenance of vehicles.


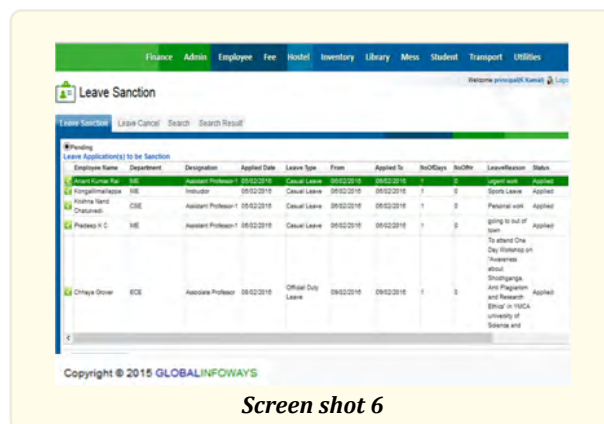*Screen shot 4*

## Student Fee Payment Management Module

All student fees and other types of fees amount related to different activities remained able to display and show these fees by verifying them on a correctly implemented fee structure that was then running separately per class of the students and during their different classes. All specific, customized and verified fee reports, as month and year wise with class, section or individual student names wise could also be obtained as and when required.

*Screen shot 5*

## Inquiry Management Module

Everything related to inquiries collected and centralized in the Academy from this module and could then be made available in the form of data. All the information related to the unique course of the students, related to the type of competition of the students and the time table of the subjects of the students etc., which could be reviewed and covered by the pre-assigned counselors for any online inquiry and then provided by them, their complete details. The day to day information collected or the list of inquiry details between the specified ranges between two dates could be prepared directly as may be required.



*Screen shot 6*

## Student Information Management Module

This module was an important part of this compact structure of the SIM. In this module, records of information about all current and former students could be obtained as and when needed. Student information could also be provided or received and also edited on the Academy's website or the Alumni Alumni website, The records of the students could be filtered by their individual course wise and batch wise depending on the need.

## Inventory of Issued Materials Module

Maintaining the availability of some minimum quantity of all the items required and making optimum use of all the resources could be done in this module only by availability of complete details of those items.

*Screen shot 7*

The records of the issuance of all the materials to the students of the institute like I-cards, books, materials for other studies or activities certificates, all could also be maintained here as well could easily be tracked on the basis of the dates of their receipt.

## Semester Course/Subject Curriculum Configuration Module

All the details like name of subjects, subject code and credits, duration of the course of semester courses issued by the university system become available by updating the course of students in these modules as per the need. Students and teachers could use them for study and teaching at any time by searching their details as per the need.

## Student Attendance Management Module

This module was very helpful to manage all the students of the Academy by observing their attendance in the order of their courses and batches. From this, a summary report of attendance could also be developed by class teachers with their comments on the student's absenteeism and then filtering their attendance easily by their course and batch and thus manage their attendance.



*Screen shot 8*

## Institutional Centralized Library Module

The details of all the books, quantity of books, their authors, references of books etc., along with the management of issuing or receiving books to the students and teachers by the library and the availability of those books, should be stored at any place could be found through this module if the books are all tagged.

*Screen shot 9*

## Module of SMS Update on Mobile Phones

The authority of the Academy Management was required to manage and send Email/SMS to the teachers, students and parents of the students as per their requirement. Students in a group or students of a class or a concerned student could be sent email/SMS through some acquired gateway. Along with this, information on every event conducted throughout the session, test details, reports and test results could all be automated according to the pre-developed template and then also sent by the teachers through this module [5].

## Student's Examination Management Module

It was an effective module for planning each examination of the students, preparation of examination hall wise details of student, numbers/batch numbers and selection of teachers in the list of invigilators or monitoring of performance test as and when conducts. Faculty could replace the students by class and class wise the exam schedule of the students and by scheduling every exam timetable for the parents, sending online on portal. E-mail/SMS could also be generated for them to get the effective responses.

## Student Exam Result Declaration Module

Students could access their results by entering their exam enrollment number and DOB on the portal accessible within and outside the campus. The examination results of the students could also be managed by teachers and controllers easily as per their requirement. Various test results could also then be published online on the Institute's website as well.

## Conclusion

On the use of one such SIMS having these modulus, it was realized that it was not only an effective software for converting the Academy into a paperless office that collects data of teaching and non-teaching staff, it could as well be customized further for future use by the administrators of the Academy along with other applications for critical and seamless administration. When this Student Information Management System (SIMS) was acquired in an Academy of Technical Education, for example as one located in Noida, all the above facilities were available in its modules but it remained necessary for the academy to integrate almost all established complementary processes of the student centric core activities so that this academy when customized it, could also claim to have created on its campus, the required paperless culture effective.

## Acknowledgement

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