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Examine IT

IT-enabled systems not only ease the pressure on academia, but bring in transparency and control

BY TUSHAR KANWAR

Examinations. The very mention of the word sends a collective shiver down the spines of the student populace. Little do they realise that for administrators and heads of institutions, conducting examinations and evaluating answer sheets is no less a daunting task. It is fraught with many challenges, semester after semester, year after year. Yet, with a clever infusion of technology, higher educational institutions can solve the traditional challenges of the examination system. We spoke to leading solution providers and institutions that have implemented IT-enabled examination

and evaluation systems to find out the important considerations you must bear in mind while choosing a system.

Collapsing Legacy

The numbers say it all. According to N Subramanian, CEO of TRS Forms & Services, a leading exam system provider, the current system is ripe for collapse. He estimates there are 504 universities and 25,951 colleges with 5.9 lakh teaching staff imparting higher education to a whopping 36.4 lakh students in the country. He goes on to stress that the moment the GER (gross enrollment ratio) of Indian students pursuing higher education rises from the current approximate 12.4 per cent to above 40 per cent (on a par with Europe and the US), the current brick-and-mortar way of conducting exams, generating marksheets and certificates, and verifying their authenticity is bound to fail. In addition, as Praveen Deshpande, Sr VP of Technology Services and Delivery, Mindlogicx Infratec Ltd, describes each step of the exam lifecycle – be it pre-exam (hall ticket and question paper generation), exam time (conducting and collecting answer scripts) or post exam (valuation, tabulation and results) – is crippled by the current pen-and-paper mode of operation. At each of these steps – whether it is the security press, valuation centres or tallying and publishing of

results – the legacy system allows for multiple points of mishandling and malpractices (not to mention human errors) since many unconnected people at multiple locations gain access to what is otherwise expected to be protected information. Tracking each of these steps

requires laborious planning on the part of the exam in-charge officers, and is a complex logistic issue to handle.

Looking forward, restricting the examination process and evaluation system to decades-old methodologies, narrows the opportunity for an institution to change

Tech-enabled Transparency



Dr HK Sehgal

Vice Chancellor, Chhatrapati Shahu Ji Maharaj (CSJM) University, Kanpur

Q How has IT-enabling your examination system helped?

A Essentially, we needed a large number of answer booklets decoded and evaluated, in a timely manner. IT-enabling our examination processes allowed us to do this without compromising the secrecy associated with student identification. At the same time, we achieved greater transparency in the process, making the system more student-friendly.

Q What are your recommendations for institutions intending to deploy IT for their examination and grading systems?

A First, the institution's administrators need to understand the technology being deployed properly and should have a team onboard to evaluate the service providers. Of course, the service provider should have trained manpower with a track record in the particular kind of solution the institution is looking at (in our case, it was the scanning and processing machine/technology TRS).

patterns and establish trends on how students respond to examinations. It also restricts institutions from engaging in system-wide improvements in syllabus and testing criteria, not to mention missing out on student-specific feedback. At a broader level, institutions following a pen-

and-paper model lose out on potentially benchmarking themselves against other group institutions or those in their sector.

IT-Enabled

For higher educational institutions, the greatest challenge around examinations has been the timely evaluation of answer sheets of a large numbers of students within the stipulated time frame. In the process, a number of manual errors or slip-ups are inevitable, and it is towards such scenarios that electronic valuation systems are targeted. For example, according to Subramanian, the e-valuation web-based exam system by TRS Forms allows indexing, scanning and evaluation in a single-pass mechanism. It ensures faster processing of results and also allows evaluators the flexibility to check answer sheets from any location. IT systems can bring together students from different campuses answering the same question paper in their own secure testing centers without the previous hassles of transporting the paper to each centre. Students can thereafter receive digitised evaluated answer sheets. This creates a more transparent system. Furthermore, each of these answer sheets can be stored and accessed from a central server, cutting out the huge economic and ecological costs (and efforts) of printing question papers and answer sheets.

Digitisation of question papers and results open up endless possibilities for

students as well. Once evaluated, the students results can be sliced and diced as needed, with most systems letting users view results in popular data formats like Microsoft Excel spreadsheets or pictorially in charts and bar graphs. Candidates can then use the analysis to drill down on individual performance (vis-à-vis group performance) across the programme, over several years, across class sections or down to individual subjects or questions. Deshpande touched upon an oft-overlooked benefit to the institution: By relegating the non-core exam coordination activities to the IT systems, institutions and faculty can focus their energies on pure academics and research so that the sector and the institution is seen as an education system, and not an examination system.

Testing Times

Replacing the current examination process would be tough for institutions. Not only should the new system fit in well with the staff and students expectations, but also maintain the sanctity and security of the core principles of examination and evaluation. Many universities have experienced staff handling the examination process, but the processes themselves are undocumented and inferred. Such stakeholders must be brought on board first, since migration of people who know the guiding



“The e-valuation web-based exam system allows indexing, scanning and evaluation in a single mechanism”

—Subramanian
CEO, TRS Forms

principles of your examination system and what works and doesn't work are the key to your system design. Non-cooperation could mean the loss of your process. Of course, adequate care must be exercised to ensure that the access control rights in the system mirror your best practices offline, so that only right stakeholders have access to the sensitive parts of your system. If need be, consider an independent security audit of your exam system infrastructure to ensure

that ill-intentioned parties cannot gain access to your systems through lesser known loopholes or backdoors.

Next, taking the technology out into the field will be your teachers and administrators responsibility, and they could potentially be averse to this transformative exercise and derail the smooth roll-out. Bring your faculty on board as early as possible, so that they are familiar with the planning and rollout of the system by the time the examination cycle

rolls by. Students too will need ample training well before the examinations so that they are prepared to face the system.

Recommendations

As with any technological initiative that re-looks at norms and practices that have been in place for years (if not decades), taking examination system off the pen-and-paper route and onto the computer needs a lot of organisational will. Deshpande suggests a champion of change to walk the talk — a person who could instil the value of technology and an open mindset into the system. This person needs to understand core needs of the system before even the first bid is invited. Universities are often seen adopting any result declaration system in a bid to seek IT intervention in order to create a technology front. Deshpande strongly recommends a phased manner of implementation and not a short-term ad-hoc arrangement that may meet today's needs but compromise your future strategy. However, such change is not without a human impact. Subramanian says above all, significant foresight is required to imbue a culture of change required for the execution of new administration workflows, automated systems and to deal with substantial reorganisation processes. ■■■

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Exam-IT in Action: Case Studies

Anna University, Coimbatore: Covering both undergraduate and post graduate courses and catering to about 1.7 lakh students and 160 colleges across eight districts of Tamil Nadu, Anna University tasked Mindlogix Infratec Ltd with the implementation of their 'IntelliEXAMS' software suite to manage the entire examination lifecycle process – right from online registration of candidates, online scheduling of examinations, examination fee management, internal mark uploading, online hall ticket generation, distributed authoring of question papers, secured question paper delivery, multiple digital evaluation, tracking of students performance & performance analysis to publishing of results and printing of mark sheets and certificates.

Kanpur and Bangalore University: With the recent introduction of automatic dummy numbering, TRS Forms & Services designed a new product called FireEye to automate the dummy numbering and data entry process for over half-a-dozen universities, most notable being Kanpur and Bangalore Universities which required the system to process around six million and two million booklets respectively.