

**SAP – Higher Education & Research Module Implementation
Academic Services & Administration Department
Indian School of Business**

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Abstract

This article describes the implementation of the SAP Higher Education & Research (HE&R) Module at the Indian School of Business (ISB) from planning to implementation and summarises the benefits of the implementation and the challenges therein. The article covers topics including the role of the Academic Services and Administration (ASA) Department in the Post Graduate Programme delivery, need for an ERP system, criteria for selection of SAP, the implementation stages, constraints, open challenges, benefits, and the way forward. An Annexure is also provided with details of the customisations to the implemented SAP version R/3 4.7. ISB went live with the HE&R module in the academic year 2006-07. This was implemented and refined further over the next two years for further optimisation of the solution.

The article seeks to highlight that a smooth successful implementation of any software requires the following:

- Domain expertise
- Prior functional knowledge of software development
- Team work
- Planning and organising skills
- Step-by-step approach of implementation
- Users' buy-in
- Passion for excellence
- Commitment
- Ownership

The 'Campus Management' component of the 'SAP Higher Education & Research' solution enables cost-effective management of higher education by providing functions that cover the following core processes of educational institutions:

- Planning of academic offerings
- Organisation and administration of students and their study data in the Student File
- Administration of fees in the student account

ABOUT ISB

The Indian School of Business (ISB), Hyderabad (India), evolved from the need for a world-class business school in Asia. The founders - some of the best minds from the corporate and academic worlds - visualised the leadership needs of emerging Asian economies. They recognised that the rapidly changing business landscape would require young leaders who not only have an understanding of evolving economies, but also a global perspective. ISB is committed to its role in creating such leaders through its innovative programmes, outstanding faculty and thought leadership.

While ISB is a stand-alone institution, it maintains academic association with some of the world's most prestigious business schools, like The Wharton School of the University of Pennsylvania, the Kellogg School of Management and the London Business School.

ISB's vision is to become an internationally top-ranked, research-driven, independent management institution that grooms future leaders for India and the world.

ISB offers a one-year Post Graduate Programme (PGP) in Management for working executives. Since its inception in 2001, the school has grown steadily from an initial strength of 128 students to about 575 in 2009, and has enhanced the class profile to be on par with leading international b-schools on all parameters.

The Academic Service & Administration (ASA) Department was charged with many challenges for effective running of the PGP. A stand-alone software, developed through local vendors, was used to cater to the academic administration requirements of the initial years.

With a steady steep increase in the number of students admitted and with the consequent increase in the complexity of administrative operations, this software system was found inadequate to take care of the increasing demands.

SAP SELECTION CONSIDERATIONS

By 2003, ISB felt the need to integrate its IT systems through a single Enterprise Resource Planning (ERP) application and initiated the exercise to evaluate alternatives with the following objectives:

- Provide a single-point of access to all organisational data
- Provide real-time data anytime and anywhere
- Implement collaborative and systematic operational management
- Improve service delivery
- Integrate data seamlessly across business units
- Automate business processes

Various options considered

ISB's management looked at all the major ERP software vendors with the above-mentioned objectives as the basis.

Among the many products, four products were short-listed for further presentations to have a look at the fitness of the product to the existing business processes and expected future requirements.

The following criteria were used to evaluate the fitment of the product and vendors of a potential ERP tool:

- Product fit to the existing business processes
- Vendor service delivery capability
- Market share in India and abroad
- Cost
- Reference sites
- Implementation road map of the company and product
- Level of customisation required

After a thorough evaluation based on the criteria through an iterative process, ISB decided to implement the SAP ERP Application, SAP for Higher Education & Research (HE&R) version R/3 4.7 and the SAP Netweaver Portal component.

SAP was evaluated as being very strong in Finance and HR modules, with considerable market share and a huge presence in India and globally. SAP solutions support all organisational processes including campus management for student and academic services, grants management, student life-cycle management, financials, operations, human capital management, procurement, analytics, research, and asset management. SAP offerings include customer-specific solutions and continuous improvement programmes, and enable stable operations.

The need to use cutting-edge technology and best practices to deliver strategic information and improved service delivery were the primary considerations in ISB's choosing to implement SAP's HE&R module.

THE ROLE OF THE ASA: OPERATIONAL COMPLEXITY

The academic administration of the one-year PGP in Management is taken care of by the ASA department. The ASA department serves as the main point of contact to students for all matters related to the academic programme at ISB.

The salient tasks in the day-to-day operations of the department are:

- Scheduling the Academic Calendar
- Maintaining Student Records
- Class Scheduling
- Allocating courses to students
- Maintaining project-based course details and their inclusion in the grade sheet
- Grade upload and viewing by students
- CGPA calculations
- Determining the merit lists
- Identifying students who do not meet the criteria for promotion to the next term/continuing in the programme
- Maintaining data confidentiality and security
- Ensuring adherence to the norms for graduation and concentration area requirements
- De-registration of students after completion of the programme to prevent record-tampering
- Producing MIS Reports for data analysis and strategic decisions

The ASA needed a software solution to facilitate the above and to help manage its operations effectively and smoothly so that its academic and business operations could be automated in a single window, allowing seamless data-flow for smooth functioning across various activities of the department. The focus was to manage the entire operations strategically rather than just operationally, so that stakeholders at ISB could use this data for strategic decisions.

The SAP HE&R module caters to most of the academic administration functions of the nature the ASA required. ISB is the first organisation in India to implement the SAP HE&R Module Version R/3 4.7 which was the first version for this application developed by SAP.

CONSTRAINTS

Though the SAP HE&R module supports Campus Management and Student Life-Cycle Management functions, its vanilla implementation provided a direct fit to only some of the functionalities required by the ASA. For example, it did not provide the reporting functionality required by the ASA.

After carefully studying the delivered functionality of the product vis-à-vis ASA's long-term requirements, the core implementation team members from the ASA anticipated the exhaustive set of required reports and architected the product implementation structure accordingly. The implementation strategy contained a detailed design of various activities in sequence, and followed an activity-wise implementation of the product, thereby ensuring its successful implementation and end-user buy-in.

SOLUTION IMPLEMENTATION

After selecting SAP ERP and SAP HE&R for implementation, ISB underwent a rigorous implementation process facilitated by SAP India and the implementation partner, Caritor (India) Pvt. Ltd. The time-frame for the back-office implementation including Human Resources (HR), Materials Management (MM), and Financials and Controlling (FICO) was close to six months and the implementation of SAP HE&R took a further six months. This has been one of the fastest implementations of its kind on record.

Committees

The core team members were nominated by the heads of functional departments. The ISB implementation team, working with the implementation partner, developed the detailed project scope and design. The implementation partner prepared and submitted the detailed time-lines and the project plan.

The following committees were formed to ensure efficient execution of the project in 2004:

- Core Team Committee – Core team members nominated by ISB business units
- Project Team Committee – Core team members, project manager and functional consultants from the implementation partner
- Steering Committee – top management at ISB, representatives from implementation partner and SAP India.

Fit-gap Analysis and Strategy for Implementation

Detailed process documents were prepared. A fit-gap analysis was conducted by the implementation partner in consultation with the end-users of each department based on which the customisation requirements were finalised.

To systematise and automate the functional processes at the school level, a step-by-step approach was followed. Customisation of the product was done in phases to effectively manage change for the end-users. Each module was rigorously tested pre-production, concluding with a user acceptance test before go-live.

Reviews

Weekly meetings/conference calls with the implementation partner along with the Project Manager and the core team members were arranged to review the progress and to ensure that problems pre- and post-production were triaged and resolved in an expeditious manner.

The project team reviews included:

- Daily meetings of core team members until the finalisation of the blue print
- Weekly project review meetings with the entire project team to address any concerns and teething issues
- Monthly steering committee reviews to monitor the progress of the project and guide the implementation team accordingly

Implementation Approach

The whole team worked in a collaborative manner to ensure the successful implementation of the project. The software went live in 2006. The final grade sheets for the Class of 2007 were taken from SAP HE&R module taking care of the minimum requirements that are essential to run one full cycle of academic activities related to students. Further, the ASA department identified and worked on product enhancements through customisations to optimise the solution and generate various MIS reports. As all the major activities of the department have been integrated and automated through the SAP HE&R Module, a strict role-based access to the system has been put in place to maintain data confidentiality and security.

After go-live, training sessions were conducted for the entire department, to increase end-user comfort in using the new system and minimise resistance to change.

A detailed but simple user manual was prepared in such a way that a new or an untrained user could also operate the system without much assistance.

Key factors in successful implementation

Given below are some of the major factors which have contributed to the successful, effective and timely implementation of the project:

- A team leader with prior experience in the related business processes and software development was made the primary owner for the customisation and implementation of the product and also was given the freedom to make decisions.
- A lot of time was spent on requirement-gathering and fit-gap analysis to maximise the solution and minimise the customisations in meeting ASA's long-term goals.
- Regular coordination with departmental teams, project teams and the steering committee with the implementation partner through personal meetings and teleconferences ensured the successful and timely implementation of the project.
- Customisation of the product was done in phases by following a step-by-step approach to effectively manage change for the end-users.

- Proper planning and organising various tasks through all the stages of implementation along with the team has also contributed a lot to the successful implementation of the project.
- Passion for excellence, commitment and ownership by the team leader and inculcating the same values to all the users of the product was the most challenging factor.

Though ISB has implemented the first version of the HE&R Module (R/3 4.7), it has successfully overcome most of the constraints by customising the functionalities and reports to suit the business processes. The details are given in Annexure I.

BENEFITS OF SUCCESSFUL IMPLEMENTATION

Following are some of the benefits realised by the ASA through the successful implementation of SAP HE&R:

- A single window for the department's data with complete access controls:
 - Students' master data flows from the admissions department to the ASA. The relevant data from the master data is also used by the finance department, thereby reducing the delays in transaction processing.
- Improved service delivery to all stakeholders, including students:
 - For example, ASA's dependence on the IT team to release the grades through the legacy system was eliminated. By releasing grades through SAP, confidentiality is ensured as only one person is involved in uploading of grades from ASA and significant time is saved because there is no need for communication with the IT team to do so. As soon as grades are released in the system, students can view their own grades in the SAP Portal. It now takes less than an hour to release grades in the SAP system, which is a significant improvement from the more than one day it took to do so in the legacy system.
- Administrative hassles are reduced and core business processes are improved with the implementation of SAP. Students can view and print their own grade sheets as per their requirement.
- Increased multi-channel delivery of services to management staff.
- Anywhere any-time access to data/information for timely and improved decision-making:
 - SAP facilitates consistent and accurate data entry and processing which is the key to facilitate improved and timely decision-making.
- Seamless integration of data across various activities. Importantly, data security and confidentiality are maintained.
- SAP implementation has provided ASA staff with exposure to best practices and cutting-edge technology, thereby increasing their productivity and improving their morale.
- The focus has shifted to a role-based system from a user-based system.
- All the benefits stated above have resulted in a 'wow' experience to SAP customers at ISB, namely, students, management, staff, etc.

OPEN CHALLENGES

Having achieved most of the day-to-day operational requirements through this module, the ASA team has become ambitious as to what can be further improved and now have the following open challenges:

1. **Automatic calculation of GPA/CGPA when all the term course grades are complete for a particular student** - Currently, GPA/CGPA for all the students is calculated only after all the term course grades are uploaded for all the students. In case of elective terms, even if all term course grades are not available, a particular student may have all his/her grades depending on the courses that the student has opted for in that term. In such a scenario, the student cannot see his/her GPA/CGPA as all the grades of the term for all the students are not yet available. There should be a provision to automatically calculate the GPA/CGPA of those students whose grades are complete.
2. **Graduation and Concentration audit** (Degree audit) – To ensure that students fulfil all the requirements for graduation and the concentration areas, there is a need for a report which gives the list of defaulters. To achieve this, related data needs to be put in place in SAP such as total number of required courses, upper limit on the failure grades and the required CGPA, number of courses to be eligible for the areas of concentration, etc.
3. **Class Schedule for all** – Currently, the Class Schedule is viewed in Student Self-Service (SSS) only by those who have been booked to that event. There should be a provision for all to view all the course schedules irrespective of the booking. This would, for example, enable the placement department to schedule pre-placement talks based on the students' availability and let various other departments know the students/faculty/venue availability. With this added facility, the earlier system of maintaining a separate Excel file of all the course schedules on the intranet can be discontinued.
4. **Status of Name field in Student Master Data** – First name and last name fields are mandatory in the Student Master Data. Last name field should be made optional. In the case of a student with only a first name, currently a "." (dot) is being used in the last name field, which is suppressed in the final grade sheet. However, when a report is generated from the Infoset query, the dot is displayed, which needs to be avoided.
5. **Customisation of Infoset Query Report** - Even after a student is de-registered, his/her name still appears in the "Infoset query report". The report should display only students who are currently registered to the program of study.
6. **Automatic reconciliation of SAP R/3 and Portal names** – At present, reconciliation of names in the Portal is being done manually. On updating the name in the Student Master Data, Portal name also should get updated automatically.

7. **Menu-driven transactions/reports** – All the transaction names including the customised reports are maintained off-line or through “Favourites” in SAP Menu. The names of the standard transactions can be more specific to suit the activity that the transaction does.

THE WAY FORWARD

At the time of implementation at ISB, the SAP HE&R product – version R/3 4.7 -- was not mature and was still evolving. ISB was one of the first adopters of the product.

After using SAP for all operational and transactional needs and for various MIS reports, now we are moving to the third phase of using SAP for strategic purposes, such as analysing the data for co-relation between students' academic performance and placement, gender, industry & educational background, etc.

In the new version of SAP, ECC 6.0, new features/changes have been introduced. ISB is currently exploring the option to migrate to the newer version in order to maximise the ROI on its ERP investment.

CUSTOMER EXCELLENCE AWARD

ISB was awarded the first-ever “SAP ACE 2006 Award for Customer Excellence” in the category of Best Public Services Implementation by SAP India.

CONCLUSION

The successful implementation of a software solution depends largely on how one can manage technology, teams, and organisational change. Implementing world-class information technology solutions alone is not sufficient to bring about the desired results. A successful implementation requires user acceptance and a willingness to embrace change and fully leverage solution functionality.

A team leader with subject matter expertise and experience in software development is critical to an effective implementation.

Passion for excellence, commitment and ownership by the team leader and inculcating the same values in the other users of the product is another challenge which needs to be tackled well.

The focus of an enterprise-wide solution should be on a role-based rather than a user-based system.

SAP facilitates consistent and accurate data end-processing, thereby reducing transaction time and improving strategic decision-making ability by providing critical information and measurable metrics.

ISB went live with the HE&R module in the academic year 2006-07. This was implemented and refined further over the next two years for further optimisation of the solution.

ANNEXURE I

Delivered Functionality in SAP-HE&R Version R/3 4.7

The following functions available in SAP-HE&R module have been implemented at ISB:

- Creation of Academic Calendar with individual term dates
- Booking students to the Programme of Study: PGP
- Creation of Faculty ids : Resident faculty and visiting faculty with their contact details
- Creation of Courses with a four letter unique code
- Creation of Business Event Type for each course and relating the same to the term of a particular academic year
- Creation of Business Event, i.e., creation of session-wise schedule for each course section. The system makes sure that resources in terms of venue/faculty do not clash.
- Defining appraisal types and appraisal templates, building appraisal templates to facilitate grade upload
- Maintaining student grades in PIQSMFU for all the modules
- Deregistration of students who have qualified for graduation with reason "Graduated" either individually or through file upload. The same is printed on the Final Grade Sheet for the result.

Customised Transactions

For the following functions, ABAP programmes have been developed and implemented:

- Creation of Students' Master data with unique PGID for ISB students as well as incoming exchange students from various b-schools abroad through a file upload
- Booking students to the respective modules through file upload
- Booking students to the business event:
 - For Core Courses – through the already pre-defined study groups
 - For Elective courses – through a file upload with PGIDs
- Bulk deletion of students booked to a particular module/business event
- Student's ISB email id upload specifically for the purpose of sending email if a student is absent from the session
- Student Name Corrections: Student names as should appear on the final certificate are uploaded to the system. It automatically identifies changes in names, corrects the same and gives a report of list of student names whose names have been corrected.
- Maintaining student's attendance in various courses and automatic email to absentees
- Grade Upload: After creating grade appraisal types and appraisal templates through SPRO transaction, grades are uploaded through a customised transaction to facilitate upload of a particular course grade for all the students of the course at one time.

- Grade change by a super-user: If any changes to the grades are to be incorporated or an “Incomplete” grade needs to be changed to a letter grade, the super-user has been given access to upload the revised grade through another transaction and the same triggers an email to the reporting manager of the super-user with a copy to the super-user.
- GPA/CGPA calculation: This is done through a customised transaction for all the students of a term together, after all the course grades of the term are complete.
- Concentration Areas: List of students is uploaded through a file upload for each of the concentration areas.
- Special Honours upload: Four types of Special Honours are awarded to the meritorious students in various categories. PGIDs for each category of Special Honours are uploaded which reflect in the students’ final grade sheet.
- Graduation Date: List of students along with their graduation date is uploaded through a file upload for facilitating printing of the Graduation Date on the Final Transcript.

Customised Reports

- List of students booked to a specific module/business event
- Absent list for verification of the attendance data uploaded
- Summary absent list for each module and also with a specified number of sessions missed
- List of modules offered in a session or range of sessions
- List of all modules in SAP System/List of all modules of PGP only
- List of students booked to a module/business event
- Contact details of faculty members
- Class Schedule for the term for each of the courses offered and also for uploading in Outlook so that students can view their class schedule through their Outlook calendar
- List of grades for each student in a particular course
- Term-wise grades for all students
- List of students with ‘Incomplete’ / ‘F’ grades.
- Grade distribution of all students in each course
- Summary Calculation of GPA/CGPA
- CGPA distribution for the batch to facilitate students to know their rank or position in class
- List of students who have undertaken project-based courses along with their project titles
- List of students for each of the Special Honours
- Interim Grade sheet for the selected Terms
- Final Grade sheet
- Duplicate Grade sheet
- Grade sheet for the Incoming Exchange Students
- List of students for each of the concentration areas: area wise/student wise
- List of students with the current status: Registered/Graduated