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Monica Holmes  
*Central Michigan University*

Roger Hayen  
*Central Michigan University*

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An Introduction to Enterprise Software Using SAP R/3: A Web-Based Course

Monica C. Holmes, Central Michigan University
Roger L. Hayen, Central Michigan University

Abstract

SAP AG is the world’s leading provider of client/server business applications. To encourage the use of SAP R/3 to enhance education, SAP AG has initiated a University Alliance Program (UAP) in North America. Being an early participant in the UAP presented the challenge of integrating R/3 into the business and MIS curricula. A course development activity for this integration was the creation of an introductory course on SAP R/3. A World Wide Web format of online lessons for the course was selected in order to make the course available to students in an asynchronous format. This article provides an overview of the introductory course on the enterprise software, SAP R/3, as well as its delivery mode.

Introduction

By engaging in the SAP University Alliance Program, the faculty were challenged with the task of integrating R/3 into the business curriculum and especially into the Management Information Systems (MIS) major. Such integration is constrained by pedagogical issues (Watson and Schneider 1999). An overview of enterprise software, using SAP R/3, was created as an introductory course on the deployment of an integrated system to support business process reengineering. A series of online lessons in a World Wide Web (WWW) format was developed for the delivery of the course content in order to make the course available to students in an anywhere, asynchronous format.

The SAP R/3 System uses a three-tier client/server architecture with the tiers delineated as (1) the database server, (2) the application server, and (3) the client or presentation level. Like other enterprise software, SAP R/3 is very complex because it encompasses all the core business transaction processing and reporting of the organization in which it is installed (SAP AG, 1997; Watson and Schneider 1999). As a result, an overview course in the R/3 System is necessary to provide students with the perspective of enterprise software and an awareness of the issues involved in the configuration and use of this software in an organization.

Entering transactions in SAP R/3 is about as challenging and educational as placing an order for a book at amazon.com. Little creativity, problem solving, or understanding of the R/3 System is necessary to process a transaction, although entering transactions is useful at the beginning to learn the R/3 menu structure. A sound understanding of the underlying architecture and procedures for installing the software is of primary importance in the actual deployment of this enterprise software in organizations. The objective of the course is to provide this understanding so that students are then prepared for subsequent MIS courses where they can study the APAB/4 programming language (the fourth generation language used by SAP), the system analysis and design that is necessary for an SAP implementation, and the details of the procedures used to configure this software. This WWW course is examined by considering the content of the course and describing the course design.

Course Content

The SAP Enterprise Software course introduces the concepts, fundamentals, and framework of business enterprise software. Enterprise software encompasses most of the common business applications that organizations use to manage their day-to-day business activities – general ledger, purchasing, order entry, accounts receivable, accounts payable, payroll, and inventory. The course acquaints students with the deployment of the SAP R/3 software in business organizations as an example of widely used enterprise software. SAP is related to an information systems framework, its technical structure is examined, and general implementation issues are considered. Key issues explored in the course are the features involved with the deployment of enterprise software in achieving organizational objectives. Implementation issues include configuring SAP to meet specific business workflow requirements and managing the implementation project. The role of Accelerated SAP (ASAP) in this project management is examined (ASAP is SAP AG’s systems development life cycle methodology for performing rapid SAP R/3 implementations). In addition to traditional course materials obtained from SAP AG, other conceptual materials are included in the course such as relating information requirements to organization levels, considering workflow processes, and examining the systems development life cycle to compare traditional and prototyping approaches to the ASAP methodology. Selected information systems concepts are blended with the SAP AG course materials in order for the students to
The SAP Enterprise Software course is a three-credit semester hour course that requires active participation and includes proctored examinations. The course design uses these features:

- Web-based lessons are similar to the lecture materials provided in a traditional instructor-led course. Their purpose is to provide a substitute for traditional course lectures.
- Lotus ScreenCams are used to demonstrate the operation and use of the SAP R/3 system, such as performing the activities to display a material master transaction screen.
- A web-based discussion forum (also known as a discussion web) is used in place of traditional class discussion.
- Summaries of the discussion forum are emailed to the instructor to reinforce these class discussions.
- A web-based course delivery template provides access to the course syllabus, weekly course assignments, the lecture lessons, the discussion web, a chat room, and an email center.
- Traditional textbooks are used for reading assignments that extend beyond the lecture material included in the lessons.
- Links to other web sites provide additional material on selected topics.
- Proctored examinations are arranged and coordinated at a location near where the student lives. For example, students in Seattle or Phoenix use a proctor in their city.

The course uses a series of ten lessons with about 50 Web pages per lesson. Each Web page contains a graphic that is a diagram, a screen capture with call outs, or a bulleted list. Examples of the lessons can be examined by selecting the SAP Enterprise Software link at the URL: http://sap.mis.cmich.edu The student is expected to study one of these Web lessons sometime during a one week period. These lessons are coordinated with the weekly reading assignments from traditional book materials and with the assignments involving the locating and studying of materials at other Web sites, e.g., the SAP-AG.DE Web site.

The course is designed around a twelve-week format that is divided into two parts. Each part follows the same organization. For the first five weeks, the students complete one lesson per week including both the Web-based online content and the assigned readings. As students review the online lesson materials, they can play any ScreenCam related to a particular web page. Then, they post a key issue from the lessons and/or readings to a discussion web. The discussion web provides a forum for the ongoing discussion of the course content. Students are also required to read the items posted by their peers and to reply to one of the posted items. The reply is to expand upon the key issue or answer a question that was posed as part of a key issue posting. At the end of the five-week period, students are required to write a summary of the content of the discussion web and email it to the instructor. Then, the sixth week, students complete an examination which encompasses the content of all the course materials studied up to that point in time. The discussion web postings, discussion web reply, and summaries are all graded activities to encourage student participation. The format of the course is then repeated with the course content for the second six-week period.

As students review the online lesson materials, they can also play any ScreenCam related to a particular web page, thus providing an understanding of the SAP R/3 system operations. The course Discussion Web (DW) serves as a forum for student to share ideas and is a means of active participation among students.

Development

These web-based lessons were initially developed using Microsoft PowerPoint. Each PowerPoint slide contains a graphic or bulleted list of items, with most slides containing a graphic that illustrates a concept or explains an idea. The slides also contain extensive notes that describe and explain their content similar to a description that would be provided by an instructor in a live classroom lecture setting. The PowerPoint presentation was then used to generate the HTML pages and GIF files for the web-based lessons. There are several reasons for doing this. First, many of the graphics contain materials obtained from SAP AG under the University Alliance Program and were adapted for use with this course. Those materials contain graphics that are proprietary material. If the graphics were widely disseminated in the PowerPoint form, they are easily copied and revised. Yes, students would like to have them, and yes, other instructors would like the PowerPoint material to modify and use as they would like. However, this was not an acceptable method of dissemination because it does not provide an adequate level of security for this intellectual property.
When an HTML page is generated from PowerPoint, it produces a GIF file that is readily viewed, but cannot be readily revised and used in other ways. Second, but of less importance, the PowerPoint presentations were about 3 MB size files. Downloading one file would require significant connect time at the connection speed available to a typical student. In addition to the course materials received from SAP AG, other conceptual materials were included in the course such as relating information requirements to organization levels, considering workflow processes, and examining the systems development life cycle to compare traditional and prototyping approaches to the ASAP methodology. That is, selected information systems concepts were blended with the SAP AG course materials to provide a better perspective for students to understand the business needs addressed by enterprise software.

The web-based course template is a custom developed delivery web that includes the course management functions and provides links to the course lessons from the weekly assignment page. This template is used as a standard for all web-course offered through the distance delivery unit of our university. This course template provides for controlling access to the web-based course through user ids and passwords.

The discussion web (DW) was initially created using Microsoft FrontPage which includes a Wizard for establishing a DW. The course DW was initially accessed as a separate web from the web created using the course template. However, because of the slow response time experienced after a number of postings were made to the DW, this was redesigned and replaced with a custom developed DW that opens in a separate browser window when the students use the DW. This redesign significantly improved the posting response time with larger numbers of postings. Also, the custom developed DW improved the capabilities for the instructor to print postings from the DW, as required for grading this course activity.

Summary and Conclusion

A WWW format for online lessons has made an introductory SAP enterprise software course more readily available to students in a convenient asynchronous format. This has added a course in enterprise software for our MIS majors. Additional information about this course, including its syllabus and sample online lessons, is available at http://sap.mis.cmich.edu.

Based on our experiences, several future directions have been identified for the course. These are:

- Linking the course lessons to the full SAP R/3 Online Help system as this become available from SAP in HTLM format.
- Linking the course to a web-based Java SAPgui that allows students to complete SAP R/3 transactions from this version of the SAPgui that is run from within a web browser.
- Developing a search feature for the web-based lessons.
- Including a web-based feedback form for evaluating changes to the course.

References


