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A Case for AIS Cases: Development of a New Graduate Course on Year 2000 Compliance Projects

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Introduction

As organizations increasingly rely upon complex, interdependent accounting systems and processes, the heretofore tradition-bound discipline of accounting is undergoing rapid and turbulent change. This gives rise to a need to infuse the accounting curriculum with course materials and experiences that introduce students to new techniques, best practices, and emerging issues, while also helping students to develop durable and transferable competencies to meet tomorrow's challenges. There is also a need to integrate such material across the curriculum, by incorporating emerging accounting issues in (for example) MIS or project management courses.

A pressing current challenge is the so-called "millennium bug." A December 1997 AICPA survey placed the Year 2000 among the top five technology issues for 1998. For many firms, resolution of the year 2000 problem is critical to organizational survival (Allen, 1998; ISACA, 1997; Jenkins, 1997; Kappelman, 1997; Violino, 1997). Successful completion of a year 2000 compliance project requires thorough risk assessment and effective project management – skills which are needed in any significant IT initiative. In addition, there is a pressing need for skills and knowledge that are unique to the year 2000 problem, including the use of new tools for assessment and renovation, understanding of the implications of various conversion choices, and other Y2K-specific concerns. A well designed course on the management of year 2000 compliance projects should thus help students to acquire analytical and managerial skills that they can both put to immediate use in Y2K projects and apply to future accounting information systems initiatives.

In fall 1996, a longitudinal case study of the New York Metropolitan Transportation Authority's year 2000 compliance initiative commenced, resulting in a case (Gogan and Fedorowicz, 1997), a paper (Fedorowicz and Gogan, 1997), and materials for a year 2000 module in our introductory undergraduate and graduate AIS course. The study was expanded in 1997 to include interviews with year 2000 project managers and team members at five large companies: a multinational conglomerate, a bank, an insurance company, a telephone company, and an aircraft manufacturer.

The results of this research stream were incorporated into a new cross-functional course, *Managing Year 2000 Compliance Projects*, which was first taught in winter, 1998. The course made extensive use of emerging field research, practitioner guest speakers, and team consulting projects on behalf of real clients. The course learning objectives and organization are first described, followed by a discussion of outcomes from its first iteration and implications for rapid development of other courses on timely AIS topics.

Course Objectives and Description

The course was designed to help students acquire knowledge and skills appropriate to the following roles:
- *project manager:* oversee all or a portion of a year 2000 compliance initiative.
- *systems analyst:* identify date-sensitive code, plan the compliance work.
- *risk management analyst:* identify technical, business, and legal risks of non-compliance.
- *auditor:* assess the adequacy of year 2000 analysis, project planning, and control.
- *user:* prepare test scenarios, conduct acceptance tests, develop contingency plans.

The course was co-taught with a CIS colleague, Jay Cooprider, as a "one-week intensive" (a misnomer, since it spanned several months). We held a December, 1997 two-hour "pre-session." Following student and faculty introductions, an overview lecture, and discussion of course expectations, students viewed an "Executive Awareness" video from the Federal Reserve, which laid out the phases of a year 2000 project (awareness, inventory, analysis, remediation, testing, migration). Students then formed teams and were instructed to identify a client site and formulate an initial idea as to the project they would conduct (see below).

This course was intended to be interdisciplinary in approach, topics, and student composition. However, the 25 students were weighted heavily toward IS, with no accounting majors (but one accountant) represented:

10 MS/CIS	4 MBA/MIS
8 MBA/Management	3 MBA/Finance

Most (23) were part-time students with full-time jobs. 14 worked in IS-related positions (programmer, analyst, manager); others worked in positions such as accountant, store manager, marketing, bank regulator, and engineer. Their employers represented the following industries:

8 financial services
6 manufacturing
3 education
6 other (retail, health care, biotech, telecom, software)

Following the pre-session, students read an assigned text (Kappelman, 1997) and packet of readings. We reconvened in January, 1997 for the "one-week intensive" portion of the course (Monday through Friday, 8:30 to 4:30). During this time we addressed the following topics:

I.   Phases of a Year 2000 Compliance Project
- Inventory, Analysis, Conversion, Testing, Migration

II   Assessing Y2K Project Risks and Readiness
- McFarlan's Risk Assessment Framework
- How important is the IT architecture?
- How can strong change control processes help?
- What's clean data? Why does it matter?

III.   Practices and Issues
- Creating and Sustaining Year 2000 Awareness
- Tools for Analysis, Conversion, Testing, Migration
- Inventory and Analysis practices and pitfalls
- Testing Trade-offs

IV   Project Management Tools and Issues
- Hidden assumptions in project planning
- Contingency Planning
- Legal Issues and Due Diligence
- The Year 2000 Project Audit

We heard from practitioner guest speakers, as follows:

- Capers Jones, Software Productivity Institute: global year 2000 costs and consequences.
- Tom Oleson, IDC: counterpoint to Capers; why it won't lead to disaster.
- Tom McAndrew, et al., Computer Sciences Corporation: remediation and testing tools, approach, and issues (on-site visit to CSC's "conversion factory")
- John Anderson, Keane Associates: a year 2000 project case example.
- Steve Goldberg, Cosgrove, Eisenberg, and Kiley: year 2000 litigation and due diligence issues.

In addition to lectures on these and other topics, students did a hands-on testing exercise, discussed cases (the MTA case noted above, and disguised cases of a multinational conglomerate and a large insurance company), and debated topics such as "expansion versus windowing." Instructor lecture materials are posted on the course web site (http://web.bentley.edu/ spr98/id755).

Following the one-week intensive, students worked on their team projects for nine weeks, meeting as needed with the faculty. The full team project description is available on the above-mentioned web site. In short, students could either participate in a portion of a year 2000 project, or conduct an audit of a project. Students were also directed to analyze the issues that they identified and to offer suggestions to management for ways to strengthen the project.

The teams served clients in the following industries: financial services (2 companies), medical school, manufacturer, telecommunications provider, and a school district. Their projects are briefly summarized below:

1. preparation of a year 2000 test approach document.
2. audit of a midrange systems year 2000 project.
3. assessment, remediation, and testing two modules of a student information system
4. business risk assessment and year 2000 project audit
5. critique of a firm's year 2000 project handbook.
6. research on date-sensitive hardware components of a midrange computer and related peripherals.

When we reconvened in March, 1998 students gave 20-minute presentations on their work.

Course Outcomes

The teams' clients provided positive feedback on the project deliverables. Below are two extracted examples:

"I wanted to thank you … for your good work on the Y2K assessment … I found the report to be thoughtful and well done…"

"The recommendations demonstrate a good grasp of the issues facing our firm. They will be offered to management as ways to provide due diligence and safeguard against critical systems failures."

As this goes to press, students' quantitative course evaluations had not yet been received; however, at our last meeting we asked for brief comments on a form which tapped students' opinions of the guest lecturers, readings, and project. Students were nearly universal in praising the guest lecturers, with comments such as "a tremendous part of the class" and "they provided a

wealth of information from different points of view." Students also viewed the Kappelman book as useful (only one did not). Most found the case discussions interesting, but some felt the grading of case write-ups was "subjective" or "unfair." The project got mixed reviews: 3 students would keep it as-is, 10 would shorten it to one month, 8 would eliminate it, 4 offered no comment on the project.

Discussion

This new course represented an attempt to rapidly incorporate research findings on a topic of compelling significance into the graduate curriculum. It is this author's opinion that in-depth field research held the key to the rapid development of this course, even though it would have been possible to structure a course based solely on elements other than the case studies. Certainly, I would not have proposed the course in fall 1997 had I not already been thoroughly immersed in year 2000 issues as a result of the longitudinal case study described above.

The case-based approach is not path-breaking; indeed, at Harvard Business School it has long been the norm to conduct case research, develop teaching cases, and incorporate these into new courses. However, at my institution (and many others), the norm is to develop a new course when one or more textbooks are available to support it. This "textbook" model makes efficient use of a faculty member's limited time, but of necessity causes delays in the introduction of timely topics into the curriculum. Given the current rapid pace of change in the accounting profession, a "textbook" model will be of limited value in bringing forth new AIS courses or course modules on emerging topics and practices.

Future Curriculum Development

Bentley College is about to launch a new degree program, a Master of Science in Accounting Information Systems. In order to develop a new course on IT Assurance Services, I expect to utilize a case-based approach similar to the one described herein. I will first conduct field-based research to examine the changing roles of internal and external auditors vis a vis electronic commerce, telemedicine, year 2000, and other complex IT initiatives. This case-based research, combined with an extensive literature review, will provide a foundation from which a new course or course modules can be built. I encourage others in the AIS community of scholars to consider this "case for cases."

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