

**Introducing Students to the Integrated Audit with “Auditing Alchemy, Inc.”**

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**Introducing Students to the Integrated Audit with “Auditing Alchemy, Inc.”****Summary**

Accounting departments throughout the United States have been persistently searching for ways to integrate the learning objectives derived from the Sarbanes-Oxley Act of 2002 (SOX) into their curriculum. For most departments, this task has been formidable because the Public Company Accounting Oversight Board (PCAOB) has interpreted SOX to require an integrated audit of internal control systems and financial statements. The integrated audit thus brings together AIS and financial statement auditing topics and skills, which many practitioners, faculty, and students have treated as elements of somewhat separate domains. Faculty are therefore faced with the challenge of showing students the connections between AIS and auditing<sup>1</sup> in a manner that will highlight each domain’s particular competence and its dependence on the other. This paper describes one institution’s use of PricewaterhouseCoopers’ case, “Auditing Alchemy, Inc.” (PwC - Alchemy), to make explicit to students the connections between such concepts as control design effectiveness (a typical AIS topic) and tests of control operating effectiveness (a typical auditing topic). We show how Alchemy can help students across the AIS and auditing curricula appreciate the importance of internal control design and operation, fraud risk assessment, and the auditor’s responsibility to test controls and communicate with the audit committee—thus reinforcing connections between academic areas and practice specialties that students may view as distinct and only weakly related. By using a case developed by practitioners to illustrate an issue in the practice of accounting, we increase student awareness of professional obligations while addressing concerns about bringing real practice situations into the classroom.

The AIS course provides a firm foundation to introduce SOX-derived learning objectives into the accounting curriculum. Specifically, we propose that the details of process-level and application controls and the “pervasive effect on the achievement of many overall objectives” (PCAOB 2004, par. 50) that information technology general controls (ITGCs) and company-level controls (CLCs) exercise are best introduced when developing students’ knowledge about the design of an effective internal control system in the AIS course. Once the foundation of effective internal control design has been established, auditing professors can focus their attention on developing student knowledge about crucial factors in the execution of the internal control phase of an integrated audit, including the design and execution of tests of operating effectiveness, and the proper communication of any findings to management and the audit committee.

To maximize the effectiveness of such an approach, professors must make explicit the connections between concepts such as internal control design and an auditor’s tests of internal control operating effectiveness. One way to make such connections is by linking a comprehensive case example across the AIS and the auditing courses. With a linked case, professors can point forward to raise student awareness of how AIS foundation concepts will be developed in auditing and also point backward to show how knowledge of AIS foundation concepts has proven necessary for the successful completion of the auditor’s work.<sup>2</sup>

Of course, designing a comprehensive case to be used across courses is a daunting task because of the level of detail required. Fortunately, the availability of “Auditing Alchemy, Inc.” (Alchemy), developed by PricewaterhouseCoopers (PwC-Alchemy) to help train their professional staff, gives accounting faculty a chance to introduce students

to the nuances of business processes, relevant internal controls, and related audit activity. This case thus answers both students' and professors' needs, and can help make explicit the connections between the AIS and auditing courses while showing aspects of the integrated audit. In particular, Alchemy showcases the relationship between CLCs, ITGCs, and the control activities that operate at a specific business process level, thus providing the additional benefit of helping faculty to respond to recent PCAOB guidance emphasizing the importance of evaluating CLCs as the first step in an audit of internal controls over financial reporting (PCAOB 2005a; PCAOB 2005b; PCAOB 2006).

Our contribution in this paper is to show a design for using Alchemy that has proven effective in illustrating the connection between concepts the PCAOB has identified as crucial to successful integrated audits. Our results show that Alchemy helps students see how course concepts are translated into practical activities, while addressing learning objectives in AIS and auditing instruction. Overall, students found the materials easy to use and understand, and reported high levels of interest, perceived contribution to learning, and improved understanding of key AIS and auditing concepts.

**Note:** The authors have submitted the complete paper for publication consideration at the *Journal of Information Systems*. Please contact the authors for a copy of the most recent complete draft of the paper.

### **Endnotes**

<sup>1</sup> Unless otherwise noted, throughout the remainder of this paper we use “auditing” to stand for “financial statement auditing.”

<sup>2</sup> Our institution has separate AIS and auditing courses at both the undergraduate and graduate level. While our discussion is based on this model, our approach can also be adapted by institutions that combine the two fields in one course.