

**DICKINSON TECHNOLOGIES, INC.: ASSESSING CONTROL ENVIRONMENT AND
FRAUD RISK**

Christopher P. Agoglia
Department of Accounting
Bennett S. LeBow College of Business
Drexel University
3141 Chestnut Street
Philadelphia, Pennsylvania 19104
Telephone: 215 895-6007
e-mail: cpa22@drexel.edu

Kevin F. Brown
Department of Accounting
Bennett S. LeBow College of Business
Drexel University
Philadelphia, Pennsylvania

Dennis M. Hanno
Eugene M. Isenberg School of Management
University of Massachusetts
Amherst, Massachusetts

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ABSTRACT: This instructional case provides students with the opportunity to perform realistic audit tasks using evidence obtained from an actual company which experienced fraud. Through the use of engaging instructional materials, the case helps instructors develop their students' understanding of the control environment concepts presented in SAS No. 78 (AICPA 1995), *Consideration of Internal Control in a Financial Statement Audit*, and fraud risk assessment presented in SAS No. 82 (AICPA 1997), *Consideration of Fraud in a Financial Statement Audit*. Students are required to make a series of fraud risk assessments based on company background information and a detailed and realistic control environment questionnaire. Students access the control environment questionnaire via the Internet (<http://www.pages.drexel.edu/~cpa22/DICKINSON2001.pdf>). Student feedback indicates that the case enhances the learning experience and improves understanding of the control environment by providing a context in which often abstract concepts can be made more concrete.

Key Words: *Control Environment, Fraud Risk*

INTRODUCTION

For the past two years, you have been working as a staff auditor for a large, international audit firm. Mary Smith has called you into her office to give you the good news of your promotion to senior auditor. Mary Smith is an influential, and extremely demanding, audit manager on the fast track to audit partner. She also informs you that the current “in-charge” auditor on the Dickinson Technologies engagement is being reassigned and that you will be taking over as her in-charge on the audit. Your responsibilities on the engagement will include supervising the audit staff in their completion of planning and field work. The challenge of your first engagement as an in-charge is exciting. However, given her stature and high expectations, the thought of reporting directly to Mary makes you nervous.

Your firm has audited Dickinson Technologies, Inc. for the past three years and has again been engaged to audit their financial statements for the fiscal year ending December 31, 2001. Your firm maintains a good working relationship with Dickinson and has found management and employees to be generally cooperative. The audit is currently in the early stages of the planning process. True to her reputation as a demanding manager, Mary expects you to hit the ground running. She has directed you to perform an evaluation of Dickinson’s control environment and to assess fraud risk. In order to accomplish these tasks, you must first become familiar with the client and the evidence gathered regarding the client’s control environment. Mary has provided you with the company background presented below. In addition, your audit staff has collected evidence on Dickinson’s control environment, and their observations are summarized in the right-hand column of the Control Environment Questionnaire (which can be accessed via the Internet at <http://www.pages.drexel.edu/~cpa22/DICKINSON2001.pdf>). Keeping in mind that Mary could have a considerable influence on your future with the firm, you are out to impress her.

COMPANY BACKGROUND

Dickinson Technologies, Inc. is an international manufacturer of precision, high-technology medical instruments, with manufacturing operations both in and outside of the United States. Its products are sold in over fifty countries, including the United States. Dickinson Technologies is a worldwide leader and pioneer in developing innovative systems and technologies in its areas of expertise. Dickinson's stock is publicly traded on the New York Stock Exchange.

Net income has consistently increased from \$7.3 million seven years ago to a projected \$25.6 million in the current fiscal year 2001. For fiscal year 2001, Dickinson Technologies expects sales of \$254 million. Sales have steadily increased an average of 26% per year over the last seven years. Its market niche is in a rapidly growing area, and new markets and new products should continue to provide significant sales growth. However, Dickinson's markets are becoming increasingly competitive. Dickinson's advantage is its established record of innovation and leadership in each of the areas in which it competes.

Management believes its technical staff is highly skilled, but many of its competitors have substantially greater financial resources and larger technical staffs at their disposal. There can be no assurance that such competitors will not direct substantial efforts and resources toward the development and marketing of products competitive with those of Dickinson. Management believes its ability to maintain its competitive advantage will continue to depend on a combination of its market leadership, its highly-skilled technical staff, its reputation, its patents, its non-patented, proprietary knowledge and experience, and the quality, safety, and cost effectiveness of its products.

Dickinson operates research and development centers in the United States, Europe, and Asia. Total research and development costs for 2001 are projected to be \$16.3 million, up from

\$12.9 million in 2000 and \$10.9 million in 1999. Management believes customer collaboration is an important part of their technical strength and competitive advantage and has built close working relationships with a significant number of professionals using their instruments. This network of experts helps Dickinson with ideas for new products, ways to improve existing products, and new applications for existing products. They also provide Dickinson with test sites and objective evaluations regarding technical and performance issues.

Dickinson holds patents in the United States and abroad on certain of its instruments. Management considers these patents to be important, but not indispensable, to its business. To maintain its competitive position, management relies to a greater degree on the technical expertise and know-how of its personnel than on its patents. Management pursues an active and formal program of invention disclosure and patent application both in the United States and abroad. Dickinson also owns various trademarks that have been registered in the United States and certain other countries.

Dickinson has several related and wholly-owned subsidiaries and has over 1,100 U.S. employees on its payroll. Approximate breakdowns of employee assignment by function are: 48% manufacturing, 17% sales and marketing, 15% general and administrative, 11% quality control and field service, and 9% research and development. Dickinson considers its employee relations to be satisfactory.

REQUIRED

After reading the Introduction and Company Background, access the Control Environment Questionnaire via the Internet at (<http://www.pages.drexel.edu/~cpa22/DICKINSON2001.pdf>).

Evaluate the evidence in the Control Environment Questionnaire and then prepare written responses to the questions that follow.

1. Each of the following fraud risk factors may impact the control environment's ability to prevent fraud. Please examine the evidence relating to Dickinson Technologies' control environment and provide an assessment of each factor, indicating whether you believe that factor is *likely* or *unlikely* to be a problem area for Dickinson. Which of the ten specific fraud risk factors listed below are of greatest concern to you (i.e., high risk) with respect to the potential for fraud occurring at Dickinson Technologies? Why? Which factors are of least concern to you (i.e., low risk)? Why?
 - a) Management's accounting policy choices and financial reporting practices (i.e., the aggressiveness or conservativeness of its policies and practices).
 - b) The degree to which the board of directors exercises its oversight capacity over management.
 - c) Management's attitude toward overriding controls.
 - d) The level of risk associated with ventures entered into by management.
 - e) The degree of oversight related to the company's control structure exercised by management.
 - f) Management's significant estimates and forecasts used for financial reporting.
 - g) The controls related to the safeguarding of assets.
 - h) The assignment and communication of authority and responsibility.

- i) Management's policies toward performance evaluation, promotion, and compensation of employees (e.g., consideration of knowledge, experience, ethical behavior, and past performance; communication of relevant policies and practices to employees).
- j) The segregation of duties, particularly for personnel in key functions.

2. In a detailed memo to Mary Smith, your audit manager, explain and provide support for your assessment of the following risks for Dickinson Technologies:

- a) How likely is it that the control environment will prevent misstatements arising from fraudulent financial reporting?
- b) How likely is it that the control environment will prevent misstatements arising from the misappropriation of assets?
- c) Assess the overall likelihood that the control environment will prevent fraud?

Mary has requested that you include a discussion of the strengths and weaknesses you relied upon to arrive at each of your conclusions.

3. Compare and contrast your assessments of the risk of misstatements due to fraudulent financial reporting and the risk of misstatements due to the misappropriation of assets. Which do you believe should be of greatest concern in general? Why? Which do you believe should be of greatest concern in the audit of Dickinson Technologies? Why? Which of the two types of misstatements would an effective control environment be more likely to prevent? Why?

4. If the control environment were considered weak with respect to its ability to prevent fraud, how might that impact subsequent audit planning and testing at a client like Dickinson Technologies? How might a strong control environment affect subsequent audit planning and testing at a client like Dickinson?

TEACHING NOTES

Objectives

The requirements of the case are designed to accomplish several learning objectives. The foremost objective is for students to improve their understanding of the control environment component of internal control. Another important objective of the case is for students to familiarize themselves with fraud risk factors and to better understand the role of the control environment in fraud risk assessment. The realism of this case offers the opportunity for students to better understand how auditors actually assess a client's control environment and to appreciate the complexities of the assessment in practice. Critical thinking is essential as students must evaluate, and then integrate, a wide variety of evidence. In order to convey their conclusions, students must demonstrate their written communication skills by clearly and concisely expressing their analysis of the evidence. As a result, this case provides an opportunity to transcend rote memorization of control environment concepts by challenging students in a "real world" setting.

Relevant Professional Standards

In performing this task, it is important to have an understanding of professional standards pertaining to control environment and fraud risk assessment. Instructors may wish to encourage

students to search for authoritative guidance relevant to their task. Selected excerpts from relevant standards are provided in this section.

According to SAS No. 78 (AICPA 1995, para. 6), *Consideration of Internal Control in a Financial Statement Audit*,

“Internal control is a process—effected by an entity’s board of directors, management, and other personnel—designed to provide reasonable assurance regarding the achievement of objectives in the following categories: (a) reliability of financial reporting, (b) effectiveness and efficiency of operations, and (c) compliance with applicable laws and regulations.”

The profession has identified five components of internal control which combine to achieve this purpose. Those components include control environment, risk assessment, control activities, information and communication, and monitoring. Of these five components, control environment serves as the cornerstone of internal control (e.g., O’Reilly et al. 1998, p. 10.4). SAS No. 78 (para. 25) elaborates as follows:

“Control environment sets the tone of an organization, influencing the control consciousness of its people. It is the foundation for all other components of internal control, providing discipline and structure.”

Generally Accepted Auditing Standards require an auditor to obtain an understanding of internal control. With respect to the control environment component of internal control, SAS No. 78 (para. 26) states that the “auditor should obtain sufficient knowledge of the control environment to understand management’s and the board of directors’ attitude, awareness, and actions concerning the control environment considering both the substance of the controls and their collective effect.”

The profession has presented its current standards pertaining to fraud risk assessment in SAS No. 82 (AICPA 1997), *Consideration of Fraud in a Financial Statement Audit*. SAS No. 82 requires auditors to perform a fraud risk assessment in conjunction with planning a financial statement audit (see O’Reilly et al., 1998, 4.8). SAS No. 82 has developed the profession’s

guidance concerning fraud risk assessment, bifurcating fraud risk into risks due to misappropriation of assets and fraudulent financial reporting. In addition to discussing these two types of fraud risk, SAS No. 82 lists a series of fraud risk factors pertaining to both misappropriation of assets and fraudulent financial reporting. The presence of fraud risk factors, while not evidence of the occurrence of fraud, increases the likelihood of the occurrence of fraud which may result in material misstatement of the financial statements (see Mancino 1997).

Case Development

In response to experiencing increasing expectations with respect to detecting and reporting fraud (e.g., Epstein and Geiger 1994), the accountancy profession has advanced its understanding of fraud (Mancino 1997) and worked to improve the effectiveness of internal control (COSO 1992; AICPA 1995). These developments in the profession have been integrated into auditing curricula (e.g., Boynton et al. 2001; Guy et al. 1999). However, these concepts pose a particular challenge in the classroom in that they are sometimes too abstract for students to grasp. Due to its qualitative nature, control environment is a fundamental example of the type of abstract concepts that are often difficult to communicate to students, given their limited real world experience. Moreover, given such limited experience, an understanding of fraud and its antecedents is similarly difficult to convey. Consequently, educators are challenged to effectively sensitize future auditors to environments where there is a higher risk of fraud.

The Dickinson Technologies, Inc. case represents a contribution to available pedagogical resources. Developed with the help of a number of practicing auditors, the Dickinson case is designed to provide students with a unique, “real world” perspective on the assessments of control environment and fraud risk. Dickinson Technologies is the fictional name for a real company with similar characteristics. This company fell victim to fraud involving a significant

misappropriation of assets by an employee. Although many aspects of its control environment were strong, these strengths could not compensate for the weaknesses that created an environment that allowed the misappropriation to occur. The case demonstrates the importance of piecing together a variety of seemingly unrelated evidence which points to an environment vulnerable to fraud.

The case has been used and refined over a three-year period, with over one hundred auditing students completing the case. Often, these students have little or no practical experience in public accounting. The project allows students to gain experience with certain concepts (such as management's philosophy and operating style and its integrity and ethical values) that may seem quite abstract and are often difficult for students to grasp given their limited, primarily "textbook" exposure to auditing. Auditing textbooks offer general guidance regarding control environment assessment, but typically lack the specificity necessary to effectively prepare students for a realistic task such as this. As a result, students are challenged in their preparation of this case to develop and use their critical thinking skills, and concepts are frequently made more concrete.

The Control Environment Questionnaire provides students with a detailed illustration of Dickinson's control environment. It follows the model suggested by the Committee of Sponsoring Organizations of the Treadway Commission (COSO 1992), which has been incorporated into SAS No. 78, *Consideration of Internal Control in a Financial Statement Audit* (AICPA 1995). The structure and appearance of the Questionnaire are designed to simulate workpapers used in practice, adding to the realism of the task. The Questionnaire details information on seven factors identified as important to consider when evaluating the control environment (AICPA 1995). The seven control environment factors are: integrity and ethical values, commitment to competence, board of directors or audit committee, management's

philosophy and operating style, organizational structure, assignment of authority and responsibility, and human resource policies and practices.

The Questionnaire contains questions to aid the students' assessment of the seven factors of the control environment. Each of these questions contains several "Points to Consider." These "Points," listed in the left-hand column on each page, direct the auditor's attention to features of the control environment. The right-hand column of the Questionnaire, "Description/Comments," contains the evidence gathered for each respective Point. The Description/Comments are written using a professional/technical style. These Comments provide a basis for assessing Dickinson Technologies' control environment (see figure 1 for a sample page from the Control Environment Questionnaire).

[Insert Figure 1 about here.]

Case Administration

Our experience using the case indicates that it should be assigned to students after the concept of internal control, and its components, is discussed in class. Typically, treatment of this area includes a description of control environment. Additionally, it would be helpful for the students to have an understanding of the auditor's responsibilities for fraud assessment. We suggest introducing the case immediately after covering the topic of control environment. This should take approximately half an hour. Upon submission of the completed case, it is useful for the instructor to debrief students with the facts from the actual fraud. This provides an opportunity for students to discuss their own experiences with the case and a starting point for instructors to discuss related issues. Instructors should allow approximately 30 minutes to one hour for debriefing. Our experience suggests allowing two to four weeks from case introduction to debriefing, as the case requires about ten to fifteen hours outside of class to complete.

An introduction of the case should include an emphasis of the students' role in completing the case requirements. Students are playing the role of a senior auditor working on the Dickinson Technologies audit. Students should be aware of the senior auditor's role in the hierarchy of the audit team. The senior is responsible for supervising less experienced audit staff. Similarly, the senior reports to an audit manager who has the responsibility for supervising the work of senior auditors. Additionally, students should be aware that the evidence they are evaluating in the case has already been collected by their audit staff. Further, as senior auditors, they have a responsibility for presenting their conclusions based on the evidence to their audit manager. The case requires students to communicate their conclusions in an unstructured manner by means of a memo to the audit manager. Although some firms may structure this task with specific formatting of fraud risk conclusions, this case provides an opportunity for students to incorporate critical thinking with their written communication skills by requiring them to construct their own memos.

A debriefing of students following the submission of their completed cases provides them with additional feedback in the learning process. This debriefing should include a discussion of the actual fraud upon which the case was based. A payroll manager defrauded the company by overriding controls and manipulating a reputable third-party payroll service provider. These manipulations involved significant additions to the manager's own paychecks, as well as other fraudulent payments. The manipulations were obscured by the removal of payroll reports received from the payroll service. It was estimated that the payroll manager was able to steal well into the millions of dollars over a brief period of about two years. As with the majority of frauds, neither the company's internal nor external auditors detected this theft (KPMG 1998). A former clerical-level employee working in payroll alerted senior management to the fraud after suspecting the payroll manager of inappropriate conduct. Some of his suspicious behavior included insisting on

unreasonable control over all aspects of the payroll function, refusing to take any time off, and garnering the dual functions of both authorizing and recording payroll transactions.

Students receive this information with great interest. However, instructors should remind students that the fraud assessment they performed did not entail the collection of evidence of the operation of controls. Therefore, they were *not* expected to uncover fraud in completing this task. Rather, the dysfunctional outcome at this particular company only serves to reinforce that risk of misappropriation of assets was more likely for this company. Further, instructors can stress that the difficulties auditors face in uncovering fraud often make it a herculean task.

In implementing this case in the classroom, instructors may anticipate several challenges that students will encounter as they review the Control Environment Questionnaire. Often students are initially puzzled by some of the professional terminology used in the Questionnaire. For example, the terms “noted” and “observed” are used pervasively throughout the Questionnaire. The instructor can inform students that such terminology is purposeful. These terms document the results of inquiry and examination procedures performed by the auditors. The writing style of the Questionnaire may present another challenge for students. Generally, students have limited experience reading professional/technical writing, which is usually much more abbreviated than other types of writing (e.g., textbooks). Through this case, students become more familiar with this type of communication. In addition, students may be uncomfortable with the ambiguous nature of some of the documentation in the Questionnaire. Instructors may wish to use this as an opportunity to discuss how, in practice, auditors reviewing workpapers will follow up on certain items that require further clarification. These challenges highlight the realism of the case and underscore its usefulness in conveying a “real world” experience to students.

In our use of the case, we allocate ten percent of the course grade to it. Although we have not assigned points to each of these elements, grading has focused on (a) student thoroughness in

addressing each requirement, (b) consistency of conclusions with their supporting documentation, (c) reasonableness of conclusions, and (d) clarity of written communication. With respect to grading the particular questions, we suggest weighting Question 2 more heavily because of its requirement to write a formal, professional memo.

Discussion of Student Requirements

Question 1: Assessment of Fraud Risk Factors

Question 1 requires students to consider whether the ten fraud risk factors listed are likely to be problem areas for Dickinson Technologies. These ten risk factors, suggested in SAS No. 82, were considered appropriate for assessment based on the evidence presented in this case. Though the question limits the number of risk factors to ten, some instructors may find it useful to open the question up to include additional risk factors. Alternatively, some instructors may wish to further challenge students by using a much less structured approach. These instructors may frame the question to be open-ended (e.g., “Discuss fraud risk factors present at Dickinson that may impact the control environment’s ability to prevent fraud.”) and then direct students to seek the appropriate authoritative guidance (i.e., SAS No. 82).

The Control Environment Questionnaire reveals specific weaknesses in the Dickinson Technologies control environment that correspond to several of the fraud risk factors. Based on the evidence presented, factors that students should focus on as being more likely problem areas are:

- c) Management’s attitude toward overriding controls,
- e) The degree of oversight related to the company’s control structure exercised by management,
- g) The controls related to the safeguarding of assets, and

j) The segregation of duties, particularly for personnel in key functions.

For example, Item 3 in the Management's Philosophy and Operating Style section of the Questionnaire states that, while controls to protect valuable assets exist, "a number of examples of failure to adhere to the system or lack of appropriate management oversight were observed." These observed overrides of the controls raise strong concerns about the safeguarding of Dickinson's valuable assets. Numerous items in the Questionnaire point toward a lack of management oversight with respect to the control structure and management's lack of concern regarding control overrides (see, e.g., Assignment of Authority and Responsibility Item 4, Management's Philosophy and Operating Style Item 3, and Integrity and Ethical Values Item 5), a combination that would seem to raise the risk of fraud. Evidence presented in the Questionnaire also casts doubts about the segregation of duties for personnel in key functions (see Item 6 in the Organizational Structure section of the Questionnaire).

The evidence pertaining to the remaining six fraud risk factors is generally positive and more indicative of a sound and functional control environment. For example, management's conservative nature with respect to its financial practices suggests that risk factors such as *a*) management's accounting policy choices and financial reporting practices, *d*) the level of risk associated with ventures entered into by management, and *f*) management's significant estimates and forecasts used for financial reporting (see, e.g., Management's Philosophy and Operating Style Items 1 and 5) are of lesser concern than the four factors discussed above. Similarly, the evidence pertaining to the remaining three risk factors (i.e., *b*) the degree to which the board of directors exercises its oversight capacity over management, *h*) the assignment and communication of authority and responsibility, and *i*) management's policies toward performance evaluation, promotion, and compensation of employees), while not entirely favorable, is generally positive

and does not appear to raise as many concerns with respect to fraud as did the evidence regarding the four higher risk factors mentioned above. For example, by taking an active role in issues surrounding management compensation and the audit function and by scrutinizing strategic initiatives and major transactions, the solid corporate governance displayed by Dickinson's board of directors should tend to diminish incentives and opportunities for fraudulent financial reporting.

The written student assignments and resulting class discussions regarding the case generally show that students do a good job of distinguishing between the more serious risk factors and those that are less likely to be a problem for Dickinson. However, for the segregation of duties risk factor, students are often sharply divided on this issue, in spite of some evidence pointing to this risk factor as a problem. While the amount of evidence regarding segregation of duties is not overwhelming, the fact that some supervisors fulfill dual responsibilities (Item 6 in the Organizational Structure section), coupled with their broad levels of authority and lack of management oversight (Item 4 in Assignment of Authority and Responsibility), should raise auditor suspicions. Given that students typically lack familiarity with actual accounting systems and internal controls, they tend not to focus on this evidence. While auditing texts discuss segregation of duties at length, students may still lack the experience to diagnose deficiencies in this area. The resulting class discussion provides an excellent opportunity to make this concept more tangible for students. Debriefing students about the actual fraud that occurred reinforces the consequences of inadequate segregation of duties, as well as the consequences of easy control override and weak management oversight.

Question 2: Risk Assessment Memo to the Audit Manager

The requirement for students to prepare a risk assessment memo provides them with an opportunity to communicate the results of their analysis in a professional memo, a communication format that they will use extensively in their business careers. This format requires students to formalize their conclusions and delineate evidence to support those conclusions in a clear and comprehensible manner.

Question 2a: misstatement arising from fraudulent financial reporting. The evidence presented in the Questionnaire suggests a lower risk of this type of misstatement. Management's strong integrity and ethical values and its attitudes toward financial reporting and performance evaluation, along with the board of directors' oversight, make fraudulent financial reporting appear less likely. For example, if management needed to achieve unreasonable goals in order to receive bonuses, some members of management may attempt to meet expectations by misstating financial information. The evidence suggests that their targets are reasonable (see Item 5 in the Management's Philosophy Operating Style section). The audit committee also decreases the likelihood of fraudulent financial reporting by acting as an effective liaison between the board of directors and both the internal and external auditors (see Board of Directors or Audit Committee Items 2 and 4). This effectiveness especially strengthens the role of the external auditors, making improper management influence less likely.

Although the evidence does not point toward a high risk of fraudulent financial reporting, students often have difficulty with this assessment. When arriving at their assessments, some students take all the negative cues they have identified into consideration, rather than only those relevant to the fraudulent financial reporting assessment (see O'Reilly et al. 1998, p. 4.7). This may be due to a perception that any weakness in the control environment may increase the risk of

all frauds. Case debriefing and class discussions provide an opportunity to clearly differentiate between the types of evidence that might increase the risk of fraudulent financial reporting (e.g., unrealistic expectations for achieving targets for bonuses, downturns in business decreasing the likelihood of reaching earnings forecasts) and the types that might increase the risk of misappropriation of assets (e.g., lack of appropriate management oversight, failure to safeguard valuable assets, and inadequate segregation of duties). This differentiation can include an emphasis of the positive features of Dickinson's control environment that mitigate the risk of fraudulent financial reporting, such as the lack of pressure on employees to make a "quick buck" and the active oversight of the audit committee.

Question 2b: misstatement arising from misappropriation of assets. The evidence regarding management's attitude toward overriding controls, the degree of oversight related to the control structure, safeguarding of assets, and segregation of duties all point to higher risk with respect to misappropriation of assets. Dickinson's supervisors have broad authority and dual responsibilities which are not subject to vigilant oversight by management. Such supervisors have the opportunity to override controls without being scrutinized by higher levels of management. Therefore, frauds could be perpetrated and concealed. As a result, students often recognize that Dickinson's control environment is less likely to prevent such frauds from occurring. This point in the debriefing provides an appropriate time to disclose the payroll fraud which occurred at the actual company in which the case was based. The key evidence that provided the opportunity for a misappropriation of assets to occur (e.g., lack of appropriate management oversight, lack of safeguarding of valuable assets, and broad levels of authority for supervisors who fulfill dual responsibilities) can be woven together to explain how the payroll manager was able to perpetrate such a fraud. Students have a tendency to look at items in isolation, inhibiting their ability to

appropriately integrate the key weaknesses in the control environment. Once the evidence is pieced together for them, many students express astonishment at how easy it is to overlook the clues that seem so apparent to them in hindsight.

Question 2c: likelihood that the control environment will prevent fraud. This assessment requires students to consider both types of fraud, fraudulent financial reporting and misappropriation of assets. Based on the risk of misstatements due to misappropriation of assets, students should conclude that there is a *lower likelihood* that the control environment will *prevent* fraud. However, some students inappropriately average their assessments of fraud risk factors. Class discussion presents a good opportunity to stress that SAS No. 82 splits fraud risk into these two discrete categories. The benefit of such a differentiation is the recognition that misstatement can result from either category of fraud. If the risk of fraud is high for one, then the overall risk of a fraud of either type occurring (the assessment required in Question 2c) is, necessarily, high. During class discussions, students can also be cautioned that lower levels of risk for one fraud risk factor do not necessarily offset higher levels of risk for another factor. For example, exceptional oversight by the board of directors does not mitigate weaknesses pertaining to safeguarding of assets.

Question 3: Comparing and Contrasting the Risk of Misstatement Due to Fraudulent Financial Reporting and Misappropriation of Assets

This question draws on students' general understanding of fraud as well as their analysis of the Dickinson Technologies case. Students should realize that, while fraudulent financial reporting poses a greater risk of material misstatement of the financial statements, an effective control environment is more likely to prevent misstatements resulting from a misappropriation of

assets. Fraudulent financial reporting can be perpetrated at the highest levels of financial statement preparation, which are not subject to control activities (e.g., Phar-Mor, Inc.).

Due to the substantial exposure to control activities in most auditing courses, and due to the ability of students to visualize employees misappropriating assets (e.g., theft of inventory or cash embezzlement), students may attach greater significance to misappropriation of assets in spite of the fact that such frauds are likely to be immaterial. In contrast, a decision by top management to intentionally deceive users through misstatement of the financial statements will probably be material, and thus should be of greater concern in general. The reason to engage in fraudulent financial reporting is to change users' decisions about the financial condition/performance of the company. Thus, these frauds would likely need to be material to achieve this goal. For example, if the company were in danger of falling short of analysts expectations, an immaterial fraud would not alter reported performance enough to meet these expectations. Class discussions can help to clarify the nature of these fraud risks and the role of materiality in risk assessment.

Given the evidence regarding Dickinson's control environment, misappropriation of assets is more likely a problem than fraudulent financial reporting. However, regardless of the actual fraud that occurred at Dickinson, students should identify the likely immateriality of such misappropriations.

Question 4: Effect on Subsequent Audit Planning and Testing

Control environment is the foremost component of internal control. One would expect that an assessment of the control environment as "weak" would result in an audit plan that places less reliance on internal controls. Since the control environment is the foundation for all other components of internal control, the auditor could expect to assess control risk at a higher level for

the financial statement assertions of completeness, accuracy, and existence/occurrence. These are the financial statement assertions that typically offer the auditor an opportunity to increase audit efficiency by performing an extended evaluation of internal control (which would include tests of controls). Thus, an assessment of the control environment as being “weak” would result in the auditor foregoing an extended assessment of internal control and instead designing substantive testing procedures to provide high levels of assurance. However, if the control environment is “strong” and an extended evaluation confirms this preliminary favorable assessment, then it might be possible to design substantive testing procedures to achieve moderate or low levels of assurance for the particular financial statement assertion (see, e.g., O’Reilly et al. 1998, 12.1-12.14).

While students could answer this question without reference to the Dickinson case, the experience of completing the case gives them greater perspective on the “real world” context of the assessment, having seen the foundation of questioning and evidence gathering which serves as the basis for the assessment. Many students comment on how this case provides them with an opportunity to understand how control environment assessment fits into the audit planning process as a whole. Their written assignments and resulting class discussions generally indicate that they are able to grasp this relationship.

Student Assessment and Feedback

Students have provided us with very positive verbal feedback on the benefits of the case each time we have used it. To help us gain a better awareness of how the benefits of the case are perceived by students, we developed a five-question survey (see Table 1) to gather more formal feedback. Eighteen students who had recently completed the case as part of the requirements of an undergraduate auditing class participated in this survey. Responses remained anonymous and

were coded from 1 to 10, with the first and tenth spaces labeled “Strongly Disagree” and “Strongly Agree,” respectively. These students generally agreed that their understanding of the control environment improved as a result of completing the case (mean = 7.8333, significantly different from the theoretical mean of 5.5 at $p = .0001$). They also indicated an improvement in their understanding of the actual audit practice environment (mean = 7.1667, $p = .0018$) and the complexities faced by auditors (mean = 7.7778, $p = .0003$) with respect to control environment assessment. Students also responded favorably to the experience gained by composing a memo communicating the results of their fraud risk assessments (mean = 8.0000, $p = .0017$). Students, on average, reported spending approximately eleven hours to complete the case and indicated that it took an appropriate amount of time given what they learned (mean = 7.5556, $p = .0004$). Only one of the 18 students did not favorably evaluate the case.

Based on verbal feedback received to date, students enjoy their work with this case. Students frequently comment favorably on both the realism of and challenges presented by the case. Many students regard it as a realistic example of some of the tasks and issues they will soon encounter in their careers. The case generally sparks interesting class discussions and a substantial amount of insightful comments. The active participation and enthusiasm generated by the case enhances students’ learning experiences. Students are especially interested to learn the “real world” outcome of the case, particularly when they correctly assess the greater risk of misappropriation of assets at Dickinson. Many students are astonished at how a fraud of this magnitude could have occurred without detection by internal or external auditors. This case reinforces the reality that internal control is not an impervious, mechanical system, but truly a “process effected by people” (AICPA 1995).

Concluding Comments

This instructional case provides students with the opportunity to perform realistic audit tasks using a case based on an actual company in which fraud was present. Through the use of engaging instructional materials, this case helps instructors develop their students' understanding of the control environment concepts presented in SAS No. 78, *Consideration of Internal Control in a Financial Statement Audit*, and fraud risk assessment presented in SAS No. 82, *Consideration of Fraud in a Financial Statement Audit*.

An integral part of the learning process for this case is the debriefing of students and resulting class discussions upon completion of the assignment. Many students are shocked to learn that an actual fraud occurred at the company upon which the Dickinson case is based. Students' recognition that control environment weaknesses may result in the opportunity for fraudulent activity increases their appreciation for what might otherwise seem to be mundane questioning and evidence collection.

The Dickinson case provides a very practical, concrete way to develop students' knowledge of the control environment component of internal control. Further, this case provides students with exposure to a higher-level audit task that requires a more global understanding of the audit. This can enhance their appreciation of the audit function and the critical role of professional judgment.

REFERENCES

- American Institute of Certified Public Accountants (AICPA). 1995. *Consideration of Internal Control in a Financial Statement Audit: an Amendment to SAS No. 55*. Statement on Auditing Standards No. 78. New York, NY: AICPA.
- . 1997. *Consideration of Fraud in a Financial Statement Audit*. Statement on Auditing Standards No. 82. New York, NY: AICPA.
- Boynton, W. C., R. N. Johnson, and W. G. Kell. 2001. *Modern Auditing, 7th Edition*. New York, NY: John Wiley and Sons, Inc.
- Committee of Sponsoring Organizations of the Treadway Commission (COSO). 1992. *Internal Control - Integrated Framework*. New York, NY: AICPA.
- Epstein, M. J., and M. A. Geiger. 1994. Investor views of audit assurance: recent evidence of the expectation gap. *Journal of Accountancy* (January): 32-36.
- Guy, D. M., C. W. Alderman, and A. J. Winters. 1999. *Auditing, 5th Edition*. Fort Worth, TX: The Dryden Press.
- KPMG. 1998. *1998 Fraud Survey*. Montvale, NJ: KPMG LLP.
- Mancino, J. 1997. The auditor and fraud. *Journal of Accountancy* (April): 32-36.
- O'Reilly, V. M., P. J. McDonnell, B. N. Winograd, J. S. Gerson, and H. R. Jaenicke. 1998. *Montgomery's Auditing, Twelfth Edition*. New York, NY: John Wiley & Sons, Inc.

Table 1
Student Assessment Results
(n = 18)

Assessment Question	Mean Score ^a (S.D.)	t-statistic ^b	p-values	Median	Range of Scores
1. Having completed the Dickinson Technologies project, I have a better understanding of the control environment component of internal control.	7.8333 (1.6891)	5.861	0.0001	8.0	2 - 10
2. Having completed the Dickinson Technologies project, I have a better understanding of the actual audit practice environment with regard to assessing the control environment.	7.1667 (1.9174)	3.688	0.0018	7.5	3 - 10
3. Having completed the Dickinson Technologies project, I have a better understanding of the complexities faced by audit practitioners with regard to assessing the control environment.	7.7778 (2.1298)	4.537	0.0003	8.0	1 - 10
4. Relative to projects assigned in my other classes, the Dickinson Technologies project required an appropriate amount of time to complete given what I learned.	7.5556 (1.9770)	4.411	0.0004	8.0	1 - 10
5. Practice with writing professional memos, such as the memo required in this project, will benefit me in my career.	8.0000 (2.8491)	3.723	0.0017	9.0	1 - 10

^a Responses were coded from 1 to 10, with the first and tenth spaces labeled “Strongly Disagree” and “Strongly Agree,” respectively.

^b t-tests were conducted for the difference between the sample mean and the theoretically neutral midpoint of 5.5.

Figure 1
Sample Page from Control Environment Questionnaire

Integrity and Ethical Values

Management must convey the message that integrity and ethical values cannot be compromised, and employees must receive and understand that message. Management must continually demonstrate, through words and actions, a commitment to high ethical standards.

1. Existence and implementation of codes of conduct and other policies regarding acceptable business practice, conflicts of interest, or expected standards of ethical and moral behavior.

Points to Consider	Description/Comments
Codes are comprehensive, addressing conflicts of interest, illegal or other improper payments, anticompetitive guidelines, insider trading.	The company has a comprehensive code of conduct signed by all employees.
Codes are periodically acknowledged by all employees.	All employees are required to sign a code of conduct. Discussions with management indicated few instances of obtaining periodic acknowledgment from employees.
Employees understand what behavior is acceptable or unacceptable, and know what to do if they encounter improper behavior.	Management feels confident that employees understand the boundaries of acceptable behavior and that it responds appropriately to unacceptable employee behavior.