Why Microcomputers May Increase the Cost of Doing Business

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Auditors play an important role in the function of all publicly traded businesses. The amount of time that an auditor spends performing the audit impacts the financial picture of the company in two ways. First the actual cost of the audit to the client is directly impacted by the cost of the auditor’s time. Secondly, the client pays for the time its employees spend assisting the auditors. The current research explores the reaction of auditors to the introduction of microcomputers in the auditing environment. Specifically, this paper shows that the introduction of microcomputers may increase the cost of an audit to the company. This occurs because auditors tend to increase the amount of testing required to complete the audit. This increase obviously causes an increase in the total costs of the audit itself in addition to an increase in the inconvenience to the company under audit.

The introduction of microcomputers into business situations has brought about both opportunities and challenges. One of the areas of challenge is in the auditing of businesses employing microcomputers. Specifically, auditors are being challenged as to how best to audit microcomputers (Romney and Hansen, 1985; Halper, et al., 1985; AICPA, 1989).

When one considers how rapidly microcomputers have invaded businesses it is easy to understand why many questions relating to their use are still not answered. Barely more than a decade ago microcomputers were still considered novelties or toys. Businesses did not even begin to earnestly consider the use of microcomputers as serious business tools until the advent of a sophisticated electronic spreadsheet.

Today, some microcomputers are more powerful than yesterday’s stand alone mainframes. Businesses have been forced to adopt this new technology in order to remain competitive (Davis and Weber, 1983). As a result, auditors find themselves facing situations that many were not trained to expect during their education. This research addresses the question of how auditors react to microcomputers in the audit.

The Audit

In an audit the auditor must determine if the financial statements developed by a company’s management state “fairly” the actual financial situation of the company (AICPA, 1989; Miller and Bailey, 1990). The amount of time that is required for the auditor to satisfy himself that the statements are indeed “fairly” stated impacts directly on the cost of the audit to the company.

The idea of professional awareness of internal control in businesses is not new or novel. The significance to auditors can be traced to at least as early as 1904 (Hay, 1993). In 1936, the American Institute of Accountants issued its definition of internal control which was...
later codified and considered a part of the code governing auditors’ professional responsibilities (Brink, 1939).

Since then the definition of internal control and the auditor’s responsibility have been modified on several occasions (Bevis, 1955; AICPA, 1958; AICPA; 1973; Loebbecke, 1975) until most recently when Statement on Auditing Standards #55 was issued (AICPA, 1989; Temkin and Winters, 1988). Despite all the modifications, auditors have continued to review a company’s internal controls as a standard part of the auditing procedures.

Because the basic objectives have remained constant auditors endeavor to rely on the controls that are in place in the company. To determine if the controls are reliable, the auditor will use a series of tests known as “tests of controls.” If the auditor feels comfortable with the results from the tests of controls then the audit may be conducted in a shorter period of time (Wallace, 1991).

If, however, the auditor is uncomfortable with the results from the test of controls or if the results show a serious lack of controls, then the auditor must perform extensive tests known as “substantive tests.” In theory (AICPA, 1989), the two types of tests are inversely related. If the auditor makes extensive use of tests of controls then fewer substantive tests generally need be used. Conversely, if preliminary results from the tests of controls show poor controls then fewer tests of controls will be used and the auditor will employ more substantive testing.

Quite clearly, the quicker that an auditor can make a determination and reach a conclusion, the less will be the impact upon the company’s personnel and the lower will be the cost of the audit to the company. Consequently, the introduction of microcomputers and auditor reaction to them is of great importance to businesses.

The Study

This research employed an experiment to test the reaction of auditors with regard to their use of tests of controls and substantive tests. An experiment was designed which provided auditors with a description of a fictitious company that utilized a service bureau for the processing of its payroll. The auditors were then informed that the client was planning to introduce a microcomputer in order to process the company’s payroll in-house.

The area of payroll was selected because of its strategic importance to businesses. Eleven variables related to payroll were identified in the questionnaire. (See Table 1.)

The experiment was mailed to practicing auditors randomly selected from lists provided by the American Institute of Certified Public Accountants (AICPA). The auditors were asked to indicate their reaction with regard to the use of substantive tests and tests of controls with regard to each of the eleven variables. The respondents were asked to rate the extent to which they would plan changes in the audit on a scale from one to seven.

Four hypotheses were tested in the research. The first hypothesis was used to test auditor risk perception to determine if auditors do, in fact, perceive a change in the risks of the modified environment. Specifically, the null hypothesis is as follows:

$$H_1: \text{Auditor risk perception is not altered when a client changes to a microcomputer environment.}$$

In order to test $H_1$, the auditors were supplied with a description of a client using a service bureau. The auditors were then asked to indicate their level of risk concern on a scale from one to seven for each of the eleven variables listed in Table 1.

The sampled auditors were then given the facts relating to a proposed change by the same company from the service bureau to a microcomputer. The respondents indicated their level of risk concern for each of the same eleven areas in the microcomputer based system.

The difference between the responses were calculated and $H_1$ was tested using a paired difference procedure. A two-tailed test was used since the level of risk concern could have increased or decreased.

The second hypothesis was closely related to the first. Because a changed environment necessitates changed controls, the auditor should modify the audit procedures used to conduct the client audit. The second hypothesis is used to test for audit procedure modifications. The null hypothesis is:

$$H_2: \text{Audit procedures are not altered when a client changes to a microcomputer environment.}$$

To test $H_2$, whether or not audit procedures change in a microcomputer environment, the auditors in the sample were asked to indicate the extent of change in audit procedures which would occur if the company had changed to the microcomputer. A response of one indicated that no change in audit procedure would be made. Any response greater than one indicated an anticipated change in audit procedures.

The third and fourth hypotheses were employed to determine what, specifically, the auditor would do in the
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