Effects of computer processing on the examination of financial statements; Statement on auditing standards, 048

American Institute of Certified Public Accountants. Auditing Standards Board

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The Effects of Computer Processing
On the Examination of
Financial Statements

Planning and Supervision
(Amends Statement on Auditing Standards No. 22, AICPA, Professional Standards, vol. 1, AU sec. 311.03, .09, and .10.)

1. This amendment adds to the list of required planning considerations in paragraph 3 (as new item c) the methods used by the entity to process significant accounting information. It also adds a new paragraph 9, summarizing those aspects of computer processing that may have an effect on planning an examination of financial statements. Furthermore, it adds a new paragraph 10 that describes how the auditor

Note: This Statement supersedes SAS No. 3, The Effects of EDP on the Auditor's Study and Evaluation of Internal Control, AICPA, Professional Standards, vol. 1, AU sec. 321 (Commerce Clearing House). The amendments to other sections as presented in this Statement integrate guidance concerning the effects of computer processing on audits of financial statements with other existing auditing guidance, because auditors consider the methods of data processing, including the use of computers, in essentially the same way, and at the same time, they consider other factors that may affect their examination.

In this Statement, superseding paragraphs are introduced by a dual reference indicating their location in both the individual SASs and in AICPA, Professional Standards, vol. 1.
might consider the need for using a professional possessing specialized skills to determine the effect of computer processing on the examination. Existing paragraphs 9 through 13 are renumbered 11 through 15.

Planning

.03c. The methods used by the entity to process significant accounting information (see paragraph .09), including the use of service organizations, such as outside service centers.

[c through g are redesignated d through h]

.09 The auditor should consider the methods the entity uses to process accounting information in planning the audit because such methods influence the design of the accounting system and the nature of the internal accounting control procedures. The extent to which computer processing is used in significant accounting applications, as well as the complexity of that processing, may also influence the nature, timing, and extent of audit procedures. Accordingly, in evaluating the effect of an entity's computer processing on an examination of financial statements, the auditor should consider matters such as —

a. The extent to which the computer is used in each significant accounting application.

b. The complexity of the entity's computer operations, including the use of an outside service center.³

c. The organizational structure of the computer processing activities.

d. The availability of data. Documents that are used to enter information into the computer for processing, certain computer files, and other evidential matter that may be required by the auditor may exist only for a short period or only in computer-readable form. In some computer systems, input documents may not exist at all because information is directly entered into the system. An entity's data retention policies may require the auditor to request retention of some information for his review or to perform audit procedures at a time when the information is available. In addition, certain information generated by the computer for management's internal purposes may be useful in performing substantive tests (particularly analytical review procedures).⁴

²Significant accounting applications are those that relate to accounting information that can materially affect the financial statements the auditor is examining.
³See SAS No. 44, Special-Purpose Reports on Internal Accounting Control at Service Organizations, and the related AICPA Audit Guide Audits of Service-Center-Produced Records for guidance concerning the use of a service center for computer processing of significant accounting applications.
⁴SAS No. 23, Analytical Review Procedures, describes the usefulness of and guidance pertaining to such procedures.
e. The use of computer-assisted audit techniques to increase the efficiency of performing audit procedures.\(^5\) Using computer-assisted audit techniques may also provide the auditor with an opportunity to apply certain procedures to an entire population of accounts or transactions. In addition, in some accounting systems, it may be difficult or impossible for the auditor to analyze certain data or test specific control procedures without computer assistance.

The auditor should consider whether specialized skills are needed to consider the effect of computer processing on the audit, to understand the flow of transactions, to understand the nature of internal accounting control procedures, or to design and perform audit procedures. If specialized skills are needed, the auditor should seek the assistance of a professional possessing such skills, who may be either on the auditor’s staff or an outside professional. If the use of such a professional is planned, the auditor should have sufficient computer-related knowledge to communicate the objectives of the other professional’s work; to evaluate whether the specified procedures will meet the auditor’s objectives; and to evaluate the results of the procedures applied as they relate to the nature, timing, and extent of other planned audit procedures. The auditor’s responsibilities with respect to using such a professional are equivalent to those for other assistants.\(^6\)

\(^5\)See the AICPA Audit and Accounting Guide *Computer-Assisted Audit Techniques* for guidance relating to this specialized area.
\(^6\)Since the use of a specialist who is effectively functioning as a member of the audit team is not covered by SAS No. 11, *Using the Work of a Specialist*, a computer audit specialist requires the same supervision and review as any assistant.

### Analytical Review Procedures

*(Amends Statement on Auditing Standards No. 23, AICPA, Professional Standards, vol. 1, AU sec. 318.07.)*

2. This amendment adds to the list of factors in paragraph 7 that the auditor should consider when planning and performing analytical review procedures. The additional factor is the effect (if any) that increased availability of computer-generated data may have on the auditor’s decision in planning to perform analytical review procedures.

\[.07e. \text{The increased availability of data prepared for management's use when computer processing is used.} \]

Computer systems have created an ability (which may not be practical in manual systems) to store, retrieve, and analyze data for use in achieving broader management objectives. These data and analyses, although not
necessarily part of the basic accounting records, may be valuable sources of information for the auditor to use in applying analytical review procedures, other substantive tests, or compliance testing.

\[ e \text{ and } f \text{ are redesignated } f \text{ and } g \]
a. **Transaction trails.** Some computer systems are designed so that a complete transaction trail that is useful for audit purposes might exist for only a short period of time or only in computer-readable form.

b. **Uniform processing of transactions.** Computer processing uniformly subjects like transactions to the same processing instructions. Consequently, computer processing virtually eliminates the occurrence of clerical error normally associated with manual processing. Conversely, programming errors (or other similar systematic errors in either the computer hardware or software) will result in all like transactions being processed incorrectly when those transactions are processed under the same conditions.

c. **Segregation of functions.** Many internal accounting control procedures once performed by separate individuals in manual systems may be concentrated in systems that use computer processing. Therefore, an individual who has access to the computer may be in a position to perform incompatible functions. As a result, other control procedures may be necessary in computer systems to achieve the control objectives ordinarily accomplished by segregation of functions in manual systems. Other controls may include, for example, adequate segregation of incompatible functions within the computer processing activities, establishment of a control group to prevent or detect processing errors or irregularities, or use of password control procedures to prevent incompatible functions from being performed by individuals who have access to assets and access to records through an on-line terminal.

d. **Potential for errors and irregularities.** The potential for individuals, including those performing control procedures, to gain unauthorized access to data or alter data without visible evidence, as well as to gain access (direct or indirect) to assets, may be greater in computerized accounting systems than in manual systems. Decreased human involvement in handling transactions processed by computers can reduce the potential for observing errors and irregularities. Errors or irregularities occurring during the design or changing of application programs can remain undetected for long periods of time.

e. **Potential for increased management supervision.** Computer systems offer management a wide variety of analytical tools that may be used to review and supervise the operations of the company. The availability of these additional controls may serve to enhance the entire system of internal accounting control on which the auditor may wish to place reliance. For example, traditional comparisons of actual operating ratios with those budgeted, as well as reconciliations of accounts, are frequently available for management review.

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1 A transaction trail is a chain of evidence provided through coding, cross references, and documentation connecting account balances and other summary results with original transactions and calculations.
on a more timely basis if such information is computerized. Additionally, some programmed applications provide statistics regarding computer operations that may be used to monitor the actual processing of transactions.

f. *Initiation or subsequent execution of transactions by computer.* Certain transactions may be automatically initiated or certain procedures required to execute a transaction may be automatically performed by a computer system. The authorization of these transactions or procedures may not be documented in the same way as those initiated in a manual accounting system, and management's authorization of those transactions may be implicit in its acceptance of the design of the computer system.⁵

g. *Dependence of other controls on controls over computer processing.* Computer processing may produce reports and other output that are used in performing manual control procedures. The effectiveness of these manual control procedures can be dependent on the effectiveness of controls over the completeness and accuracy of computer processing. For example, the effectiveness of a control procedure that includes a manual review of a computer-produced exception listing is dependent on the controls over the production of the listing.

34 Where computer processing is used in significant accounting applications, internal accounting control procedures are sometimes defined by classifying control procedures into two types: general and application control procedures.⁶ Whether the control procedures are classified by the auditor into general and application controls, the objective of the system of internal accounting control remains the same: to provide reasonable, but not absolute, assurance that assets are safeguarded from unauthorized use or disposition and that financial records are reliable to permit the preparation of financial statements.

37 Incompatible functions for accounting control purposes are those that place any person in a position to both perpetrate and conceal errors or irregularities in the normal course of his duties. Anyone who records transactions or has access to assets ordinarily is in a position to perpetrate errors or irregularities. Accordingly, accounting control necessarily depends largely on the elimination of opportunities for concealment.

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²To the extent that the computer is used to initiate transactions or execute procedures, the application program usually includes procedures designed to assure that the steps are executed in conformity with specific or general authorizations issued by management acting within the scope of its authority. Those procedures might include checks to recognize data that fall outside predetermined limits and tests for overall reasonableness.

³General controls are those controls that relate to all or many computerized accounting activities and often include control over the development, modification, and maintenance of computer programs and control over the use of and changes to data maintained on computer files. Application controls relate to individual computerized accounting applications, for example, programmed edit controls for verifying customers' account numbers and credit limits.
For example, anyone who records disbursements could omit the recording of a check, either unintentionally or intentionally. If the same person also reconciles the bank account, the failure to record the check could be concealed through an improper reconciliation. In an accounting system using a computer to print checks and record disbursements, the computer may also generate information used to reconcile the account balance. If the same person entering information into the computer to execute the payment process also receives the output for the reconciliation process, a similar failure could be concealed. These examples illustrate the concept that procedures designed to detect errors and irregularities should be performed by persons other than those who are in a position to perpetrate them; that is, these procedures should be performed by persons having no incompatible functions. Procedures performed by such persons are described hereinafter as being performed independently.

.57 Control procedures that achieve or contribute to the achievement of one or more specific control objectives are often interdependent. Some control procedures may be essential to the operation of other control procedures that meet specific control objectives (that is, they need to be functioning adequately for the achievement of those specific control objectives). In an accounting system that uses computer processing, the auditor's concern over the interdependence of control procedures may be greater than in a manual system because of the increased concentration of functions within the operations of computer processing.

.58 Control procedures that are designed to contribute to the achievement of specific control objectives, through their interdependence with specific control procedures, may be classified as general control procedures. Control procedures that are designed to achieve specific control objectives may be classified as application control procedures. Application controls are often dependent on general controls. For example, if an application control procedure, such as matching shipping information with billing information, were to be performed by a customer-billing computer program, the auditor might review the controls over the access to and changing of computer programs before reviewing this programmed control procedure or other programmed application control procedures. The adequacy of this programmed application control procedure is dependent on the adequacy of control procedures that ensure unauthorized changes have not been made to the computer program performing those procedures during the period under review. Accordingly, it may be more efficient to review the design of internal accounting control procedures that are essential to the operation of several specific control procedures before reviewing those specific control procedures.

.65 Some aspects of accounting control require procedures that are not necessarily required for the execution of transactions. This class of
procedures includes the approval or independent review of documents evidencing transactions. In a manual processing system the evidence of performing those procedures may be supported by those transaction documents because the individual assigned to perform that control procedure is normally required to indicate approval (for example, by initialing the document). If an accounting application is processed by computer, however, those procedures performed by an application program frequently will not provide visible evidence of those procedures and may not be performed independently of the original processing of transactions.

.66 Tests of such procedures performed manually require inspection of the related documents (a) to obtain evidence in the form of signatures, initials, audit stamps, and the like; (b) to indicate whether the procedures were performed, and by whom; and (c) to permit an evaluation of the propriety of their performance. Tests of such procedures performed by a computer may be made in a similar manner, provided that the computer produces visible evidence (a) to verify that the procedures were in operation and (b) to evaluate the propriety of their performance. For example, a computer-generated error list may provide such evidence if the list is tested by comparison to a list of the transaction file used by the same application program. If such evidence is not generated by the computer, those control procedures may be tested by using computer-assisted audit techniques to reperform the processing of the relevant information and then comparing the results of reperformance with the actual results. Another method may be submission of test data to the same computer process. It is important to understand that tests designed to verify the operation of programmed control procedures can be effective only if the auditor can obtain reasonable assurance of the consistency of their operation throughout the period under examination. Reasonable assurance may be obtained by testing controls over the maintenance and processing of those programs or from alternative procedures such as testing the programmed control procedures throughout the period.

.67 Other aspects of accounting control require a segregation of duties so that certain procedures are performed independently, as discussed in paragraph .37 (as amended above). The performance of these procedures is largely self-evident from the operation of the business or the existence of its essential records; consequently, tests of compliance with such procedures are primarily to determine whether the procedures were performed by persons having no incompatible functions. This is true for both manual and computerized accounting systems. Examples of this class of procedures may include (a) the receiving, depositing, and disbursing of cash; (b) the recording of transactions; and (c) the posting of customers' accounts. Since such procedures frequently leave no audit trail of who performed them, tests of compliance in these situations are necessarily limited to inquiries of different personnel and observation of office personnel and routines to corroborate the information obtained during the review of the system. While reconciliations, confir-
mations, or other audit tests performed in accordance with the auditing standards relating to evidential matter may substantiate the accuracy of the underlying records, these tests frequently provide no affirmative evidence of segregation of duties because the records may be accurate even though maintained by persons having incompatible functions.

In a computerized accounting system, functions that would be incompatible in a manual system are often performed by computer. Individuals who have access to computer operations may then be in a position to perpetrate or conceal errors or irregularities. This need not be a weakness if there are control procedures that prevent such an individual from performing incompatible functions within the accounting system. These control procedures might include (a) adequate segregation of incompatible functions within the data processing department, (b) segregation between data processing and user department personnel performing review procedures, and (c) adequate control over access to data and computer programs.

**Evidential Matter**

*(Amends Statement on Auditing Standards No. 31, AICPA, Professional Standards, vol. 1, AU sec. 326.12.)*

6. This amendment adds a new paragraph 12, making it clear that audit evidence is not affected by the use of computer processing. Only the method by which the auditor gathers that evidence can be affected. Existing paragraphs 12 through 23 are renumbered 13 through 24.

12 The auditor's specific audit objectives do not change whether accounting data is processed manually or by computer. However, the methods of applying audit procedures to gather evidence may be influenced by the method of data processing. The auditor can use either manual audit procedures, computer-assisted audit techniques, or a combination of both to obtain sufficient, competent evidential matter. However, in some accounting systems that use a computer for processing significant accounting applications, it may be difficult or impossible for the auditor to obtain certain data for inspection, inquiry, or confirmation without computer assistance.

**Effective Date**

7. The amendments in this Statement are effective for examinations of financial statements for periods beginning after August 31, 1984. Earlier application is encouraged.
The Statement entitled "The Effects of Computer Processing on the Examination of Financial Statements was adopted unanimously by the fifteen members of the board.

Auditing Standards Board (1983-1984)

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