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# THE EFFECT OF COMPUTERS ON ACCOUNTING FIRMS

Linda Cretin

The advent of computers into the world of business and finance brought about a series of effects that were overwhelming in their scope and largely unanticipated. Businesses were required to make massive adjustments in their thinking and in their operations in order to continue to stay in close competition with more farsighted firms who had jumped on the computer bandwagon early. Businessmen found they must suddenly learn a new technical language and develop a systems-oriented outlook if they were to survive in the "executive jungle." The executives now in demand were those who had at least a basic idea of what could and could not be done with computers in business. Demands for computer programmers, computer operators, systems and procedures men, and EDP specialists grew with every passing day, and these people developed a secure niche of their own within the ranks of the business organization.

As computers became more prevalent within the business community and as their use expanded to touch almost all areas within the firm, still another series of major adjustments was required. These adjustments are being made, not by the businesses themselves, but by the accounting firms that audit their books, prepare their tax returns, and offer various management services. The problems that accountants are having with computers and the benefits they have discovered in working with them are the main subjects of this article.

## Auditing

Auditing computers offers a great many new problems to the accountant. One of the most controversial of these is the question of whether it is best to audit "through" or "around" the computer.

Auditing "around" the computer concerns itself with the input data and with the output, with little concern for the manner in which the output was developed. "It is based on the logic that if the source data or system input can be proven correct and if the results of the system accurately reflect these source data, then the output must be correct and the manner in which the system processed the data is inconsequential."<sup>1</sup> Up to now, this method

has been used most because it is almost identical to the system used before EDP and it does not require knowledge of EDP equipment. However, the accountants who continue to insist that auditing "around" the computer will be a valid technique in the future show that they are not willing to face the changes that EDP systems must bring.

Auditing "through" the computer is the other approach. This approach follows the concept that, "if the controls and procedures incorporated in computer programs are effective, and if a proper control of computer operations is employed, then proper processing of proven and acceptable input is bound to result in acceptable output."<sup>2</sup> This system, of course, requires a thorough knowledge of computers, including the basics of systems and procedures, computer operations, built-in and programmed controls, and computer programming.

With all the information and accounting systems combined in the computer, some accountants feel that internal control has all but disappeared since the basic separation of duties between authorization, custody, and accountability considered necessary in internal control are no longer available. However, when examined more closely, the question is not so much one of lack of internal controls as it is of evaluation and use of the many new controls needed to replace the old. Control over development of and changes in the programs, physical control over tapes, and control over possible intervention in the actions of the computers by the console operator are some of the new controls. The emphasis of internal control must now be on greater control over the input and the operation of the computer.

An example of auditing the new internal controls "through" the computer is the use of test decks. A test deck is a group of transactions, imaginary or real, that is used to test the programs and the programmed controls currently in use to make sure that they are both accurate and adequate.

"The inherent advantage of the test deck over the selection of actual transactions

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fiary of his estate, and under the rules of attribution the son's holdings in the corporation were attributed to the estate. Thus, there had been only a *partial* redemption and, under Section 301 (c), the redemption was a dividend to the extent of accumulated earnings.

Oddly enough, the executors of the estate had attempted to eliminate any such possibility through the immediate discharge of the son's claim as a beneficiary before the estate's shares were redeemed. The District Court said the elimination of the bequest to the son did not alter his role as beneficiary inasmuch as he might be liable for estate taxes—a rather stringent interpretation of the word beneficiary.

The estate's liquidity requisite could have been met and the entire problem eliminated under Section 303 of the Code. If the redemption was sufficient to cover only estate and inheritance taxes, debts, funeral and administration expenses, the redemption (even though partial) would have been treated as a sale, subject only to a capital gains tax. As previously explained, there would have been no tax in view of the redemption price also being considered the estate's basis. Of course, the decedent's estate would have had to meet the requirements of that section of the Code as to the proportionate holdings, but in most instances such qualifications will be met in the case of stock in closely-held corporations.

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is that the auditor may include every type-normal or abnormal-of conceivable transaction in his tests with relative ease. And, theoretically, a sample of one for each type of transaction is as statistically sound as a large number because of the uniformity involved in the processing of data."<sup>3</sup>

There are other problems with the use of the computer in auditing, of course, such as the high cost of the initial development of a computer audit and the need for advanced planning by the auditor to get the data he needs off the records before it is erased by the updating process. These, however, are problems that must be worked out between the auditor and his client as they are more problems of practice than of theory.

Once the major questions and problems of auditing the computer are resolved, a great many computer benefits lie just over the horizon. Because of the tremendous speed with

which the computer operates and because of its large memory, a great many audit and information activities can be performed that previously were considered unapproachable. Some of the many advantages available through the auditor's use of the computer are the following:

1. Better knowledge of the client's system of procedures and controls.
2. Coverage of a greater area of activity.
3. Easier achievement of continuous auditing.
4. Better use of the exception principle."<sup>4</sup>

The possibilities are limitless, and the problems do not stand as high as the faint-hearted among the accountants would have us believe.

### Taxes

As each tax season brings new and complex tax regulations, more and more people who used to complete their own returns are now seeking professional help. Accountants are completely swamped with tax work now, and as the coming years seem to promise an ever-greater deluge of tax returns, the accountants are beginning to search for a way out from under it all. One way out seems to be through the use of computerized tax return preparation. An additional push toward computerized tax service is given by the government's own shift to a computer system. This system "puts each return under a microscope, and any error or omission detected—inadvertent or otherwise—boosts the chances of a full-scale government audit."<sup>5</sup>

When a client in need of preparation of his tax return comes to the accounting office, the accountant can take down the required information on a specially designed input data form supplied by the computer service, and make the major accounting decisions required as to the handling of certain items. These data forms are proofread and then mailed to the processing center where they are run through the computer on a standard program and returned to the accountant with the necessary schedules, general instructions for the client, and an audit check indicating possible problem areas. The cost to the accountant is fairly low and varies with the complexity of the return.

The computer, besides doing basic computational and clerical work, can also be programmed to calculate whether or not income-averaging applies, whether a joint or separate return would be better, whether a gain is short or long-term, and whether there were any errors or omissions.<sup>6</sup>

Although most accounting firms prefer to  
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handle the more complex returns themselves, many accountants are sending many of their returns to the service bureaus, and cite a savings both in time and money.

As competition among the service firms gets stronger, the service centers should become more sensitive to their clients' needs and problems and develop more ambitious and more flawless programs at lower costs. In time, the accounting firms may do their tax returns on their own computers, with programs developed to match their own special needs. In fact, a few firms are doing this now.

### Management Services

The impact of computers has been felt in two ways by an accounting firm's management services department. First, it forced the forward-looking accounting firms to develop a systems department with an EDP-oriented outlook to aid clients in preparing their own businesses for EDP, and to assist them in the choice, installation, and development of needed programs and controls for their own computers. As more and more businesses turn to automation in the hope that it will fulfill their needs and solve their problems, the demand for this type of service grows continually larger. The clients need someone on whom they can depend to help them develop the best and most workable system because most business executives know little about developing an automated system. Because the investment is too big to allow the program to be handled by amateurs, the management services people have begun to develop the experts needed to fill the gap.

Secondly, many accounting firms have found it necessary to install their own computers, and offer a wide range of computer services to their non-automated clients. This type of work seems to have begun more as a matter of self-defense than of actual desire to enter the field. It was necessary for accounting firms to fill their clients' needs in these fields, or have them turn to banks which had excess time on their computers and were more than willing to sell computer services to anyone who wished to buy. For this reason, as well as many others, several firms began computerized service operations as a part of their management services department.

Computers have had and will continue to have a great effect on the three functional areas of accounting—auditing, taxes, and management services. The way of the computer

## CHANGING PATTERNS OF WOMEN'S LIVES

A revolution is occurring today in the life patterns of women and girls. The young girl today can anticipate a very different way of life from that of her grandmother and even her mother. The components of this vast change include:

When the grandmothers of today's teenagers were born in about 1900, the life expectancy of a girl baby was 48 years; in 1920 when many mothers of today's teenagers were born, it was 55 years; in 1964 it was 74 years!

In 1920 only 20% of 17-year-old girls graduated from high school; in 1965, 74%.

In 1920 only 2% of 21-year-old women graduated from college; in 1965, 16%. In 1920 only 23% of all women aged 14 years and over were in the labor force; in 1966, 39%.

In 1920 the average woman worker was single and 28 years of age. Today the average woman worker is married and 41 years old.

About half of today's women marry by age 21 and have their last child at about age 30; by the time her youngest child is in school, a mother may have 30 or 35 years of active life before her.

*Fact Sheet*

*U. S. Department of Labor  
Women's Bureau*

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seems to foretell the way of the future, and accountants must concern themselves with EDP or be left behind.

### References:

<sup>1</sup> Porter, W. Thomas, "Evaluating Internal Controls in EDP Systems", *The Journal of Accounting*, August 1964, p. 35.

<sup>2</sup> *Ibid*, p. 35.

<sup>3</sup> *Ibid*, p. 37.

<sup>4</sup> Porter, W. Thomas, *Auditing Electronic Systems*, p. 102.

<sup>5</sup> "Electronic Ally for the Taxpayer," *Business Week*, March 26, 1966, p. 167.

<sup>6</sup> *Ibid*, pp. 167-168.