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Seventh Annual Computer Conference - Part One

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Both optimistic and pessimistic notes about future sounded by luncheon speakers at the Boston—

SEVENTH ANNUAL COMPUTER CONFERENCE

A Management Adviser Staff Report

THE INFORMATION flow within a company is no longer "about the operation of the company—it is part of the operation," Marshall Armstrong, president of the AICPA, told the Tuesday luncheon session of the Seventh Annual Conference on Computers and Information Systems, sponsored by the Institute in Boston May 24-26.

Although computers have been around for a quarter of a century and full management information systems have existed for the last ten or fifteen years, 1971 is a particularly significant year for accountants both in their role of helping the client, their "planning services," and in their role of helping the client use his computer, their "sys-

tems work," Mr. Armstrong said.

"Let's look at planning services first," the speaker continued. "The planning process of defining the problem, sizing up the situation, gathering and analyzing the facts and assumptions, and selecting a sound course of action permeates all situations in which we are attempting to cope with an uncertain future. But then, what other kind of future is there?

"Without usurping management prerogatives and responsibilities CPAs have been useful in helping clients with their planning problems. The computer has opened wide new horizons in this area. In past decades, when we engaged in planning, the human labor in cop-

ing with the interaction of just a few variables was monumental. Who among you CPAs cannot recall the stacks of many-column worksheets that went into a planning study? Change one variable and there went another two mandays with the desk calculator and the pencil and the eraser."

The computer has changed all that, he said—an adviser can now provide as many combinations of as many factors as anyone cares to read and ponder. But this in itself has created a new problem.

Managers today do not suffer from a lack of relevant information, he pointed out. "Rather they suffer from an overabundance of irrelevant information. The computer is

obviously capable of calculating and printing vast quantities of words and numbers. . . . What is too often overlooked is the capability of the computer to scan, screen, filter, select, and condense information to meet the needs of a particular manager with a particular problem."

Such an analysis of a problem, however, requires human judgment, knowledge, and effort, he said. "I see this as your greatest challenge when you are wearing your planning consultant's hat—to make the best use of the computer in focusing relevant information where and when it is needed.

"In a planning model, the ability to plan 'what if?' is of the essence," he continued. "For example, what if the economy turns down or up? What if consumer tastes shift from product A to product B? What if the rate of growth of something changes? I think you should direct your planning energies to this type of thinking—to the real world of buying and selling, of competition in the marketplace, of new products and facilities replacing the old. The computer model can cope with these complexities if you can specify them."

However, to perform fully in this new role, accountants will have to "look beyond the credits and debits of the accounting system," Mr. Armstrong warned. "You must concern yourself with the pounds and dozens—and the hours—that go into buying and selling products," he said. "You must develop a feel for rates of change and their implications, for the present values of future cash flows, for changes in products and processes and the time and costs of bringing these changes about. When you can think of a planning model as being a realistic selection of the important bits of the real world that impinge on your client's problem, you're on the way to being an effective planning consultant. The computer can do

the arithmetic and the logical operations if you can select the relationships and parameters of the model."

The profession has still not fully developed two technical areas in planning, he warned. One of these is simulation, providing for the entry into planning elements of random elements in the real world and basing resulting plans on the observed probabilities of events occurring.

Risk analysis in planning new facilities is a good example of this, he said, as is production planning.

"The other underdeveloped area," he continued, "is sensitivity analysis, which may be thought of as an extension of the 'what if?' concept. It is the measurement and consideration of the impact of one variable on another. For example, at next year's level of operations, what will be the effect on net income of various rises in the cost of raw material A? This type of analysis enables the CPA to quantify the 'what if?'s.'"

Turning to the other CPA planning role, that of systems consultant, Mr. Armstrong said that it no longer encompasses preparing a chart of general ledger accounts or even computerizing the present information flow, as it once did.

"Now, in 1971, it seems to me that CPAs are coming to recognize that the flow of information and the flow of management action must coincide," he said. "The client's system really consists of his entire organization—its structure, its people, its policies, practices, myths, and physical resources, its outside world of customers, suppliers, competitors, governing bodies, and the general public as well as the flow of information that pulses through the organization.

"When someone changes management structure and responsibilities, such as by appointing a task force, someone needs to change the

flow of information to parallel the change in structure. Conversely, when we modify the information flow we need to have some feel for the impact that this change has on the overall system. This is so because the information flow and the system itself are interdependent. As information flows become closer to real time, the distinction between what is 'information' and what is 'operations' starts to become meaningless. If you question this, you need think only of an airline ticket window, an on line bank teller window, or a factory process control system. The information is no longer about the operation of the company—it is part of the operation."

The challenge to CPAs, then, in systems analysis, evaluation, and installation lies in forgetting the old, arbitrary distinctions between accounting information and other types of management information; they are all part of the same stream, coming from the same source documents, going through the same programs, and emerging in the same output formulas, he said.

The accountant's challenge is to consider the segments of management reached by a given piece of information, the decisions that have to be made at that level, and the degree of detail that is required or that may be required, he said.

"The computer is carrying you into the mainstream of your client's operations," Mr. Armstrong declared. "You will need to know more about his operations than ever before to do your own job of helping to develop a dynamic, flexible, responsive flow of relevant information."

If the AICPA president, luncheon speaker for the second day of the meeting, was optimistic about the future, the Monday luncheon speaker, Bernard Goldstein, president of ADAPSO (Association of Data Processing Service Organizations),

was critical of some past developments in the computer service industry.

Tracing the development of data centers, Mr. Goldstein conceded the computer had been badly oversold.

"Actually, it's neither a panacea nor an electronic wheel—though it's been presented in both contexts," he said. "Nobody but the hobbyist wants the computer, but all mankind wants the results it can produce. The service concept is a viable alternative."

He said there are four distinct types of data service organizations:

1. The traditional data center;
2. The software supplier;
3. The facilities management organizations; and
4. Time sharing facilities.

As a result of the much publicized success of the industry, folk heroes have developed, like Sam Wiley of University Computing or, more recently, H. Ross Perot of Electronic Data Systems. Each new and prematurely "public" service was represented as the "new Xerox."

Then, with the onset of the recession in 1970, and the end of the flow of new capital, many of the poorly managed operations collapsed, no longer "able to bury errors with fresh cash."

"Where good management existed, the companies survived," Mr. Goldstein declared. "Most of those that had restricted their activities to what they knew how to do well, to specialties, survived."

Still the loss rate has been so high that the New York City classified telephone directory today has four pages less listings for EDP service companies than it did at the end of 1969.

But the net result is that the companies that are still in business are, for the most part, "here to stay," the association official continued.

"The unqualified have had their

day at bat and are now out of the ball game," he went on. "We have moved from the entrepreneurial stage to the managerial stage in EDP."

Some problems remain, he said. For example:

"The banks have been moving into data processing services in violation of both law and the spirit of the law," Goldstein said.

"The continued concentration of economic power is an implicit danger to our society. In Japan, if you look very carefully at almost all of the large industrial cartels, you will find banking and banking institutions at the center. That may be all very well for Japan but is it for us?

"ADAPSO has fought the banks' intrusion in Washington and the courts. But where was the AICPA? Where was the AICPA at the:

"Patman Committee hearings?

"Sparkman Committee hearings?

"Federal Reserve Board hearings

"Your strong voice was silent. As a result, a new innovative industry may become part of the banking system—without any strong logic of relationship.

"The time has come for this great Institute and great profession to speak out on these broad issues affecting our society and economic system. A 'new' wind' is blowing and you should be part of it."

Payoff coming

The conference, which was held at the Marriott Motor Hotel in suburban Newton rather than in central Boston, opened with a keynote address by Patrick McGovern, president, International Data Corporation and publisher of *Computerworld*, on the topic "1970—The Payoff Decade for EDP."

Mr. McGovern, reviewing a research study recently completed

by his firm, said that the average budget for a computer installation today is $600,000 and that this figure is expected to increase by 12-14 per cent during the next three years. Outside services currently take 53 per cent of the total budget, he said, and this percentage is expected to rise as users increasingly employ outside software, time sharing, and data processing services.

Discussing the implications of the "transition to consumerism" that has occurred in the computer industry during the past two years, he said that consumers now have the sophistication—and the motivation—to direct and control the rate of growth of new computer applications. This growing sophistication has been fostered by the recent rash of "unbundling," the emergence of new product lines, and the economic recession, he said.

"The industry has graduated from a manufacturer-developed field to a user-directed market," he said.

Citing areas where he believes CPAs have special responsibilities to EDP operations of their clients, McGovern said these were:

Security and protection of data and records handled by the data center,

Ensuring the adequacy of systems that yield historical and operating business information,

Verification of the adequacy of data entry procedures and identification of critical trouble points in developing accurate computer processing records,

Promoting standards by which the competence of data processing staff personnel can be evaluated, and

Monitoring emerging laws and regulations concerning privacy in data banks to ensure that the client's installation violates none of them.

The 1970s can become the "Pay-off Decade for EDP" if the CPA in both his auditing and financial advisory function applies realistic measures to his clients' computer operations and actively participates in educating top management in the potential of EDP, he said.

Following the keynote address conference registrants broke into small groups to discuss a variety of EDP topics: income tax preparation, time sharing, the benefits and penalties of operating a service center, and management information systems.

The final event of the morning was billed as "A Famous Accountant Considers Automation." It developed that the presentation was a film and the famous accountant was that even more famous television star, Bob Newhart, who, before he found TV work more lucrative and more satisfying, actually was an accountant. The film portrayed Mr. Newhart in one of his well-known one-way telephone calls hearing from one Herman Hollerith concerning Hollerith's news of his latest brainchild, the punched card.

Newhart, of course, reacted to the news and the details very much as a quite unimaginative accountant probably would have responded to a telephone conversation outlining the principles of the punched card when it was first developed in the late 19th century. Readers who have seen Newhart's portrayal of a half-incredulous, half-amused English cabinet minister responding to Sir Walter Raleigh's telephone recital of the financial possibilities of tobacco in the early 17th century will have a fairly accurate picture of the "famous accountant's" general response to the whole idea of punched cards, the origin of today's computer.

In the first afternoon session, Arthur Martin, director of systems and data processing, Squibb-Beech-Nut, analyzed some of the "trade-offs" that must be made in choosing any form of EDP.

There are advantages and drawbacks in any system chosen, Mr. Martin pointed out. The wise company will consider each of these in terms of its own objectives before choosing any one mode.

Some of the factors to be considered, he suggested, are:
• The necessary flexibility of the system.
• The importance of system security.
• The importance of the timeliness of data handled by the system.
• Controls in the system.
• The cost/savings/profit ratios of the system.

Security, he said, is an increasingly important factor in the area of information processing. Security can be divided into several classifications. Three arbitrary classifications might be external security, internal security, and personal security. In general, it was the speaker's opinion that the question of security is much more critical and vulnerable in the area of information systems and computers than it is in manual operations. Security has to be an important consideration in an information system, he went on. Do you have proper backup? What will happen when you experience a power failure? Who should have access to the files and how is such access controlled?

If these questions are answered, he said, you will probably provide better security than you may have experienced in the past. On timeliness, he pointed out that an on line system would seem to have all the advantages. But consider, he said, what would happen to a company that had an on line system if every sale were recorded the moment it occurred. If production were adjusted to respond to such instantaneous receipt of information it could be in a state of constant chaos for a manufacturing firm that produces for inventory.

Cost savings and profits are entirely possible through EDP, he said, but the reverse situation is equally possible. He recommended that every company, before becoming involved in EDP, make out

a balance sheet of exactly what it hoped to gain and what it might have to lose in terms of employee turnover, loss of security, and unexpected development costs.

He then outlined some specific data processing techniques, with comments on when they were and were not appropriate. Time sharing, he said, was good for limited input, limited output operations when the processing itself was fairly complex. If those conditions did not exist, he implied, he would be cautious about time sharing.

To the idea of installing an "in-house computer," he said, a logical question would be "What's the next best alternative?" Does the company have the personnel for its own computer operation? Is it prepared for the emotional shock of changeover to a computer?

Service bureaus, he pointed out, posed the danger of the client's being "locked in" with only the selected outside bureau understanding the procedures through which the company's records are updated. This can be overcome by specifying that the records involved can be transferred to another site. Also, he said, it is a good idea to obtain some "in-house" talent.

Package program techniques, he said, are good even though they are still somewhat limited. Perfectly acceptable accounts receivable and accounts payable packages that can be applied by a wide variety of companies are now available, he declared, even though some purchasing companies may have to compromise their procedures on some points.

In response to a question from the floor as to the wisdom of modifying packaged programs internally, Martin said he would advise against it.

"I don't recommend modifying a packaged program internally," he said. "If it has to be done, request the supplier to do it as a first choice."

The next afternoon session was devoted to a discussion of the AICPA Information Retrieval Pro-

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gram by William Bruschi, director of information retrieval for the AICPA.

The AICPA system, which will be a library or information retrieval system, has its origins in the problems CPAs have in retrieving information about current accounting practices and treatments, Mr. Bruschi said. The project was undertaken in response to the urging of Institute members that the Institute's information gathering and disseminating capabilities be expanded to better fill the needs of the profession.

The system will not replace the Institute library or eliminate the need for specialized Institute publications. Instead, as experience is gained in use of the system, the functions of the library and the contents of the publications will be examined to determine how they and the retrieval system can be combined to best serve the information needs of the profession.

In his investigations of operating systems, Bruschi soon found that the greatest advances in technology usually arose in the course of developing systems for governmental agencies. He also found that one of the first jobs in the field is to separate the experts from the charlatans.

"We also found that users of the system must play a major role in designing it," he said, "because designers are apt to become so enamored with their system that they forget its end use."

After his initial investigations, his approach, Bruschi said, was to bring into existence two consultation groups or Task Forces. The Information Task Force is made up of potential users and has the job of outlining the needs which the system must meet. The System Task Force is expected to find the system that would best meet those needs.

So far the Information Task Force has established the following guidelines:

1. The system should be designed primarily to meet the needs

of accounting firms. While the system will be made available to other subscribers, its acceptability will be enhanced if its primary use is by accounting firms.

2. The system should be an on line-real time interactive system.

3. The system should be based on key word interrogation techniques, so that a set of words—say "receivables," "pledged," "dishonored"—would retrieve information designated by the words.

4. The initial data bank will be composed of accounting treatments and disclosures in corporate annual reports. Other data banks will be compiled from prospectuses and proxies. Subsequent banks will be formed from accounting literature, accounting firm subject files, and Institute promulgations.

Access to the system will be obtained by subscribing CPA firms through terminals in their offices and a network of leased lines. The Institute hopes that terminals will eventually be installed in state society offices to make the system truly national in scope, Bruschi said.

The installation proposed is based partly on one already in use by the Ohio Bar Association, Bruschi reported. That system enables law firms to search a data file of Ohio court cases dating back to 1823 through the use of key word interrogation techniques.

The last Monday session consisted of three concurrent groups, each considering one aspect of a "Management Information System in Action." The panel group this correspondent attended, moderated by Richard Guiltinan, of Arthur Andersen & Co., discussed the use of time sharing and terminals. In general, the panelists were enthusiastic about the use of time sharing terminals, pointing out that in some cases the use of them for tax work alone justified the entire cost of the terminal so that any additional work done with them was in effect free to the user.

The Monday meetings concluded with an open house reception at the Marriott. (*To be continued*)

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