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ELECTRONIC COMPUTERS

- A. Is sharing of large scale computer cost feasible for a group of smaller companies? Is it possible to develop generalized programs that could be used by several companies? What will be the long range effect on smaller companies if they cannot acquire the benefits of large scale computers?
- B. What applications have been found for medium sized computers? What economies have been effected?
- C. To what extent are companies using desk size electronic computers? What applications have been found? What special problems arise?
- D. Is it feasible to adopt a consolidated functions approach with conventional tabulating equipment?

MR. JOHN C. WOODY, North American Reassurance Company, expressed the belief that sharing the cost for a group of small companies is feasible in general. A separate study is necessary for a particular group of companies. A common program could be developed, probably involving changes in individual company procedures.

Scheduling would be the most difficult problem, since peak loads would probably occur at a common time. A mitigating factor is that advanced computers can run more than one program at a time provided sufficient peripheral equipment is available. For example, an installation with two tape input units and two outputs might well process two tapes for two different companies in the same time it would take for one tape.

The first step in machine handling of data is usually to key-punch information from manually prepared records into punch cards. Each company would punch its own data and send it to a central computing location. (A tape would be preferable for ease in transportation but, for magnetic tape, card-to-tape and tape-to-card conversion is very expensive at present, and hence not feasible unless an inexpensive machine with this limited function could be developed. It might be possible to devise a system of keying data directly into punched paper tape from manually prepared records.)

There are several possible methods of cooperative use of a computer:

- a) Set up a separate entity to operate as a service bureau for members. This method involves a maximum of integrated planning.
- b) A company which could break even by using only a small amount of computer time may order a computer and sell time and possibly programming service as well.
- c) An existing service bureau might organize a group of companies to guarantee basic costs and make its profit by selling left-over computer time.

The computer properly used should provide key personnel with relief from routine, leaving them time to improve the company's over-all operations; thus it should make a substantial competitive difference among the companies.

MR. IRWIN T. VANDERHOOF, U.S. Life, pointed out that a co-operative user group exists in the fire insurance field.

Access to the machines allows two different types of flexibility. First there is flexibility in merchandise—new plans, new types of insurance, new methods of payment. Many companies could do this because of computer facilities at nominal cost.

There is also flexibility in merchandising, which has also been subject to development. Many companies have adopted monthly check plans. For a small company to do so, there are three steps: first, devise a system to handle slightly modified premium and billing procedures; second, teach the lower salaried clerical help to handle this procedure; and third, the clerical help must remember the procedure. The number of things that the small staff can remember correctly is limited.

In changing accounting routines for new methods of billing, the problem is large. It is more difficult to set up new procedures on a machine, but once set up, it can be forgotten; this is not so with clerical personnel.

The U.S. Life has a medium sized computer and its applications are quite numerous. There are three types: first, routine multiplications (dividend, commissions, commuted value of commissions of an agency); second, involved calculations requiring a few more seconds (reserves released, mean reserves, asset shares); third, combined sorter and tabulator operations (mean reserves, fed in a random way, analyzed in cells by reserve basis; distribution of premiums by state).

The U.S. Life's premium billing is controlled by the IBM 650. Programs edit or check data for consistency. They help eliminate unwanted material.

The question of economics on the machines is not simple. The U.S. Life shows little change in spending. This, however, leaves out the most important considerations of the machine's flexibility: doing jobs never done before; preparing illustrations and dividend projections. What is it worth to know that the file is 50% more accurate? It is hard to say.

The machine evaluates the commuted value of commissions of all U.S. Life agencies. The U.S. Life also gets the cash flow from commissions projected for two or three years. The reports are more complex and arrive earlier.

What is the economic value of these items? The truth lies between

this additional work being of negligible importance and being the very condition for continued success of a small company. Only time will tell. Mr. Vanderhoof would be reluctant to gamble against computers.

MR. SAUL ROSENTHAL, Postal Life Insurance Company, felt that two broad categories should be considered with respect to large-scale computers: nonroutine activities, consisting of basic research, ratebook calculations, development of new plans, and special studies; and routine activities, consisting of premium billing and accounting, commission accounting, dividend calculations and accounting, valuation, statistical reports, and policyholders' service information.

The small company has depended on industry-wide trends for basic research in the past and will continue to do so in the future, profiting from the speed with which such information is now made available. With respect to ratebook and special research, Postal Life has recently used consultation services which have these machines and feels the cost might compare favorably with the results of larger companies with their own computers and staff. Postal Life is currently working with such a service on an investigation of its recent mortality and persistency. This nonroutine activity, it would appear, need not be undue cause for worry of the small companies.

Routine activity, however, presents a different picture and small companies will feel the major economic impact in this area. There is a rich record of accomplishment in this area which stands against cost of machinery, initial experimentation, conversion, "debugging," etc. When the initial costs have been amortized, substantial savings should emerge. A \$10.00 policy fee may be reduced to \$7.00 because of an electronic data processing program. This is a reduction of 60¢ per M for a \$5,000 policy, 30¢ per M for a \$10,000 policy, etc. A small company unable to reduce its costs will be at an appreciable competitive disadvantage. Mr. Rosenthal stated he does not know whether the differentials above are a reasonable estimate.

Mr. Rosenthal felt that the general introduction of the graded premium system makes the overhead problem more serious to the extent that smaller companies write smaller policies where differences in unit costs are reflected very sharply under the graded premium system.

Even though the large companies' actuaries have suggested that machine costs may never be justified, the smaller companies should feel compelled to take immediate steps to achieve reduction in costs. A top management decision must give priority to each job. A complete analysis must first be made of each company's record system, accounting procedures and policyholders' service routines.

Postal Life's approach is almost sure to be profitable, even if it never reaches electronic data processing. It is adopting a consolidated functions approach with conventional tabulating equipment first. One consolidated punch card file consisting of two or more punch cards is to replace a large number of punch card and manual files. It has been shown possible to achieve a highly successful program performing most of the basic data processing operations within such a step. If the small company can do this only and stops here, it is clear that they will have done much of the basic preliminary work required to go over to electronic data processing. The decision to change over then can be made on a fairly tangible comparison of additional costs against additional benefits. The actual transition to electronic data processing would then be in the nature of an important technical change.

Once the consolidated functions approach has been reached, the company may find a small electronic computer which is adequate and which it can afford; or it can discuss the feasibility of joint ownership with other companies at a similar point; or it might find it feasible to rent regular time from a company with excess machine capacity.

An interesting question is the possibility of a generalized program which could be used by several companies. From a rather limited knowledge, Mr. Rosenthal was inclined to think that the dividend formulas would have to be forced to conform to the program, rather than the other way around. In addition a program devised for three original participants would have the effect of seriously limiting the possibility of a fourth company participating at a future time. A more likely approach would be to have separate programs for each company for routine items and a generalized approach for nonroutine items. This would amount to a highly specialized service bureau.

MR. JAMES A. ANDERSON, Colonial Life, spoke with respect to section C. For a company to justify even a small computer, there must be a definite job in mind. Colonial Life's job is its field payroll. To complete any special project, the machine must be utilized whenever possible and, therefore, the problem becomes how best to utilize the periods of time available and not how the computer can best perform the operation.

The computer (Burroughs E 101-3) was utilized when available for the company's ratebook. The method was to do the rates and values by steps and make the tape output of the first step the input of the next. The rate page took three steps, calculating (1) gross annual basic premiums, (2) rider and extra annual premiums, (3) modal premiums. The values page took three steps, calculating (1) nonforfeiture factors, (2) cash

values, (3) paid-up and extended insurance values. Because sufficient computer time was not available, premiums and rate testing were done on desk calculators. A drawback with the baby computer was the inflexibility of the print output which predetermined the format.

Colonial Life, although there were problems, was satisfied with the results and savings in time and money. The speed with which income endowment values were determined was especially satisfactory.

MR. JAMES G. BRUCE, Columbian National Life Insurance Company, went to a computer discussion group in Hartford and was impressed with the magnitude of the problem, particularly the third part of section A.

At the computer discussion group, most of the people who talked were with the large and medium sized companies. The length of time for study and number of people studying was impressive. Then, after so much work and study, they realized they were not sure of the savings involved. One company figured they would not lose money and thus could justify the program, but they were uneasy about possible obsolescence.

These companies have the advantage of IBM revealing new machines in the planning stage, a machine which would do all the functions involved in selling and servicing life insurance being one of these.

Mr. Bruce was awed by the tremendous complexity of programming. A few things made him wonder whether small companies could realize benefits. Mr. Bruce understood that IBM has 100 programmers being trained to rent out. He felt the question is not *whether* but *when* all companies that want to stay in competition for business will go into these programs. Pooling among the smaller companies seemed imperative.