TAB

GENERAL COMMENTS ON TAB C

1. This Tab contains random comments by industry and other government agencies concerning the feasibility and value of Electronic Data Processing.

2. Bibliography

Gustav F. Forssell
Electronics Research Analyst
Atlantic Mutual Insurance Company
New York, N. Y.

Stanley R. Klion
Manager, Management Controls Department
Peat, Marwick, Mitchell & Co.
70 Pine Street
New York, N. Y.

James T. Scott
Assistant Manager
Electronic Data Processing Department
Union Carbide Corporation
30 East 42nd Street
New York, N. Y.

John A. Comerford
Manager, Development Bureau
Consolidated Edison Co., of New York
4 Irving Place
New York, N. Y.

Thomas New
Manager, Office Systems & Services
East Pittsburgh Division
Westinghouse Electric Corporation
East Pittsburgh, Pennsylvania

T. M. Sweeney
Manager
Price Waterhouse & Company
56 Pine Street
New York, N. Y.

Peter Wilson
Electronics Research Analyst
Atlantic Mutual Insurance Company
770 Broadway
New York, N. Y.

John Calhoun Morrow
Head, Univac Department
Washington Manufacturing Company, Inc.
224 2nd Ave., North
Nashville, Tennessee

Kenneth Gutshaw
Finance Controls Management
Union Carbide Corporation
30 East 42nd Street
New York, N. Y.

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TAB C

INSTALLATION COSTS

"The following are one time costs which must be considered:

a. Space preparation, wiring, air conditioning, humidity control, sound proofing.

b. Freight (approximately $5,000)

c. Machine tapes cost $40 to $50 each and the larger computers require up to 100 each.

d. Cabinets, files, etc.

e. Wiring Panels

f. Planning and Programming

g. Testing and debugging (example: one company took 100 man years)

h. Parallel operations (This means that you continue on your old system and also do the computer operation until it is proven out)

i. Conversion

j. Outside Assistants (consultants)

k. Initial expenses of hiring specially trained people. (KLION). The total cost of site preparation was $12,803.78.

(RAMAC Report - USA Medical Depot)

TAB C

PROGRAMMING

"It took $200,000 to $300,000 to compute 3 programs for Westinghouse on the UNIVAC I." (NEW)

"It took 25 people 1 year to program a payroll of 23,000 people on the IBM 705 for Edison. (large scale computer). (COMERFORD)

"It took 1 year to work out the program for Accounts Receivable on the Datatron Computer Installation. One fifth of the Staff could be let out after the first year." (FORSSELL)

"It took the experts 5 months to analyze Westinghouse's old reports and 4 more months to actually do the programming." (NEW)

"All exceptions which are not standard are left to manual cards as it is easier to do by hand than to crank data into the program." (FORSSELL) - In this connection, it is thought noteworthy that perhaps more than 50% of the Agency business are exceptions."

"The programming staff at the USA Medical Depot consists of 3 people:

    1 - Supervisory Programmer (GS-11)

    2 - Programmers Military (M/Sgt.)

(Report on RAMAC - USA Medical Depot)

"The stock accounting programs were completed in 9 months (May to Dec. 1956) and on the basis that the prescribed supply system would not be altered."

(Report on RAMAC - USA Medical Depot)

Tab C

MACHINE COSTS

"The preparatory costs are large....The annual cost of a medium computer will be from $100,000 to $200,000 per year." (KLION)

"The computer is expensive. With regards to saving, I do not say there never will be a saving, but there has been none up to now. It is really too early to get cost saving." (KLION)

"Costs to be saved are based on what is present clerical costs." (KLION)

"$1.00 rental requires $.60 operational costs." (KLION)

"As a result of data available on the computer, reports grew from 27 to 51. The reports cost more to do on computer than on tabulator, but results in better management. Increase service affects costs." (NEW)

PERSONNEL

"The biggest problem encountered was getting people for the Data Processing Center (Computer)." (MORROW)

The average salary for a programmer is $6,000 to $8,000; an analyst from $7,600 to $8,600 and an operator from $5,000 to $5,500. (Survey of Conferees)

"Very few companies have actually reduced personnel as the result of a computer." (Scott)

A typical Data Processing Center (DPC) organization would be set up as follows:

Chief, DPC (normally the Assistant Comptroller)

Manager, DPC, Operations

-Computer Operators

-Key Punch Operators

-Machine Operators

-Clerical Controls

Manager, DPC Research

-Analysts

-Auxiliary Machine Specialists

-Programmers Specialists

(KLION)

"The computer duplicates the experience of people." (GUTSHAW)

"A full time maintenance programmer is required to keep those programs already established on a current basis." (Scott)

"An audit clerk is required at the end of each machine processed document to find errors and to associate those errors with people with the hope to end input errors." (Scott)

"Computer cannot duplicate experience - EDP is used up to a point of least return and thereafter season judgement must take over." (GUTSHAW)

The present staffing of the test project:

1 - Project O

1 - Supervisory Programmer

1 - Systems Analyst (EDPS)

1 - Systems Planner (EDPS)

2 - Programmers

1 - Property and Supply Clerk

1 - Clerk Typist

8   TOTAL

(US Medical Depot)

"EDP itself faces a manpower shortage." (Scott)

"It is not easy to find the proper people for EDP. You must train them yourself and after that you have to hold on to them." (MORROW)

OPERATION OF COMPUTER

"Impossible to underestimate the problem which will be encountered."
(FORSSELL)

"Each company has their own problems and no 2 companies are the
same - no one can do your job - you must do it all yourself - you must
train your own people." (FORSSELL)

"Some of the biggest lessons learned were:

a. Requires extremely detailed explanation of any deviation - you
must think of the most minute details that might come up.

b. Operating costs tend to rise because of information now available.
A firm hand is required to correct this.

c. Scheduling - requires intensive scheduling - you may require
a scheduling board.

d. A screening unit is needed to review all input documents going
into the computer." (NEW)

"A total of 16,400 stock record cards were put into the RAMAC."

"The stock accounting function has been operating on a parallel
operation (both the old EAM and computer) since May and will continue
for an indefinite period." (RAMAC Report) (USA Medical Depot)

"The program for effecting supply control computations (stock
levels) and producing procurement listings has been completed and tested,
but will not be put into operation until September 1957." (NOTE: There
is 18 mo. after the initial systems analysis was started.) (RAMAC Study -
USA Medical Depot)

"The program for producing the audit transaction register has been
written and tested with two approaches. Neither has been considered
satisfactory due to excessive processing time. Inasmuch as this is a
listing application, it is not considered feasible for the RAMAC."
(RAMAC Study - USA Medical Depot.)

Feasibility Study

"Basic reasons for interest in computers are:

    a. Cost reduction and a desire to do something about data processing.

    b. Development of hitherto unobtainable management controls information and a need for faster data and better data processing and management information.

    c. Use of scientific management techniques." (KLION)

"Will what we propose (computer) be better or worse than we have now?" (KLION)

"Size of the team making the study should be from 2 to 12 depending on the size of the company, with an average of 6 recommended. The people selected should be from within the company and must be the BEST. Several man years are required to make the study." (Klion)

"The feasibility team should attend schools, conferences, make visits, attend seminars, use consulting companies and, in general, learn from others. There is a danger of too much training as it may limit imaginative work and actual doing. The team should be sent to schools of more than one manufacturer. The supervisor of the team should be from within the Division which will supply the bulk of the people. He must have sound judgment, be a comptroller or accounting officer and has to be someone in charge of the day to day operations and in top management." (KLION)

"Use consultants - but not to do the job. Use them only as advisors and don't shift the responsibility to the consultants." (KLION)

"Analyzing Current Procedures

    a. Prepare flow chart procedures within selected areas.

    b. Collect and compile list of all forms used.

    c. Accumulate detailed volume and cost information (clerical and machine costs)

    d. Study effect of exceptions - your current procedures may have many exceptions in the normal procedure which would be too bulky or almost impossible to program on a machine which would still have to be done manually.

    e. Examine relationships between areas and to other procedural entities.

Feasibility Study

    f. Define input requirements such as kind, method, volume, cost, and communication problem for decentralized activities.

    g. Establish report requirements as to what you actually do need, not on what you now get.

    h. Identify management control needs.

    j. Accumulation of costs as if function were going to be eliminated but segregating input costs." (KLION)

"Know what you can do now with present equipment before you go into computers." (KLION)

"Consideration must be given to the fact that COMPUTERS CANNOT RUN YOUR BUSINESS." (KLION)

"The study should include a review of all reports to ascertain if they are really needed. One company found that their problem was to eliminate reports and not to procure a computer." (KLION)

"An effective, sensible, wise use must be investigated - used only when proper. You should use the same kind of judgement deciding to get computers as you would use to any other problem." (KLION)

"Question the need for fast processing - you must be critical about the necessity for putting in a machine in order to get results 2 or 3 days sooner." (SCOTT)

"The value of the study pays for itself by the review of current procedures. It may generate profitable savings by eliminating fat by this method study. In some cases eliminates need for the computer." (KLION)

"You must know what you can do with the present EAM equipment before you go into computers." (KLION)

"The feasibility study resulted in the savings of 23 people out of 100 at Union Carbide." (SCOTT)

"You must consider how you can modify existing equipment to do the job before you consider a computer." (SCOTT)

SAVINGS

"Westinghouse saved $568,300 a year and expect to save an
additional $257,000 next year. This is based on a reduction of 55
people and an additional 24 more. Under the manual system, it required
149 people and now only 94 people. (NEW)

NOTE: Figures were given that the initial start up expense was $357,360,
not including building and a $450,000 per year operation expense. The
$357,360 was not taken into consideration; so therefore, the actual
saving is not a fact.

"We estimate that we are saving $70,000 by using the computer on
a 7,500 people payroll." (WILSON)

NOTE: The initial cost was reported as $300,000 plus installation and
apparently this was not considered as it is impossible to save this
amount of money on a 7,500 payroll.

"Edison saved $150,000 for one year. They were able to release
60 people to other departments." (COMERFORD)

NOTE: Edison has 1 IBM 705 and 2 UNIVACS. They maintain and prepare:

     2,000,000 assets

       100,000 line items

        23,000 weekly paychecks

         2,200 semi-monthly paychecks

         1,000 monthly paychecks

       161,000 stock holders

     2,700,000 bills per day

        70,000 bills per day

     9,000,000 units of property

        25,000 preferred stock holders

"Average man months required by USA Medical Depot:

Old EAM System	103.83
RAMAC	78.41
Potential Savings	25.42

Potential money savings was shown as $8,496.00, but RAMAC does not prepare the following reports which are still prepared by EAM:

Daily Transaction Register

Daily Financial Statement

Receipt take-up listing

Financial Inventory Control
(Verbal - USA Depot)

NOTE: The author does not concur in the statement of savings inasmuch as the only visual savings could be the reduction in the number of editors. Partial editing is still required for items not in stock and substitutes. There is no change in their present workload of vouchering, coding of documents, document processing and review. So much as pertains to savings or preparation of shipping documents should be disregarded as this is a normal function of any EAM procedure even though it is not accomplished by this Agency. They later stated that the bulk of the saving was due to the elimination of 8 editors; if so, then the initial cost, rental, maintenance and operation costs of the RAMAC and the people required to operate same should be considered against this savings.