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Enclosure
to P.D.'s

MEMO TO: Carl H. Reynolds
FROM: D. A. Bavly
DATE: November 1, 1966
SUBJECT: Dinner Meeting

A dinner meeting was held on Wednesday, October 5, 1966. The topic covered was the start of the new fiscal year. Marv Heit discussed plans and projects for the new fiscal year. Phil DePasquale discussed how the staff could be of assistance to the marketing effort. Don Bavly gave a brief technical description of every job currently in-house. A written presentation of these job summaries entitled, "One Day in October in Boston" is enclosed.

DAB:pk

cc: Marvin B. Heit

ONE DAY IN OCTOBER IN BOSTON

1966

AVCO - Consulting on Operating System/360

Task: Serve as expert to AVCO personnel and machine time rental customers on the behavior of Operating System/360. Present area of concentration is with FORTRAN IV, job control language and debugging assistance. Becoming familiar with use of utility programs for manipulation of data sets. Incorporating routines for reading internal clock and performing job accounting into the Operating System.

Blue Cross - Blue Shield - Medicare Claims System

Task: Claims come in from doctors, patients, and hospitals to request MEDICARE payments. These claims are processed by a computer system which determines coverage from the Social Security Administration and writes appropriate checks and statements to doctors, patients, and hospitals. Work performed on IBM 7074 and IBM 1401. The 1401 is equipped with paper tape reader.

City of Hartford - Data Processing Study

Task: To study the present and anticipated data processing requirements of the City of Hartford, and to present a comprehensive plan to specify the requirements for third generation computer applications in municipal government. Being studied are Finance Department, Board of Education, Police Department, Health Department, Assessor, Registrar, Welfare Department, Planning and Tax Collection.

Crane Company - Analysis of Variance

Task: Analysis of variance is a statistical tool used for purpose of quality control. The client company manufactures paper. They take a few sample measurements for quality control purposes. Analysis of variance is used to see if variation in measurements are significant or not. Tested for significance are fluctuations along width of paper, fluctuations along length, differences between operators, differences between machines, fluctuations over days of week. Work performed in FORTRAN IV for the System/360.

Fafnir - Standard Cost System

Task: System to control inventory from raw material through finished product. It consists of three subsystems:

- a) Purchasing and Consumption of Raw Material
- b) Production and Manufacture of Parts
- c) Distribution and Sales of Finished Product

Standard Cost refers to what management thinks things should cost, based on standards set up at beginning of year for labor, material and overhead. Our system compares what things actually cost to these standard costs. Work performed on Honeywell 400.

Fafnir - Open Order System

Task: Maintain a file of all orders placed but not filled. These are orders placed with Fafnir by their customers. When an order comes in it is placed in the file; when it is filled it gets removed from the file. The system produces information for production, for shipping, and for management. Work performed on Honeywell 400.

First National Bank - Real Estate Billing

Task: Design and implement using H-800 COBOL a system to produce rent bills and reports necessary for real estate management to effectively rent space and control expenses. The bank will use this program to serve as an agent to collect rent for the apartment-house owner or industrial property owner, and issue periodic reports to owners.

General Electric, MEDINET - Total Hospital Accounting

Task: Studying Cost Accounting applications in hospitals with the goal of determining what portion of the accounting operation can be computerized. Studying hospital operations, how they serve the community, and how MEDICARE has affected them. Study of the accounting operation in relation to the entire financial system for a hospital. Concentration on the area of cost analysis and control.

General Electric, MEDINET - Including Batch Processing on a Time
Shared Computer Environment

Task: MEDINET is a service organization of General Electric which will provide time shared computer processing oriented to hospital environment and problems. In order to take advantage of programs already written for batch processing computers in problem oriented languages (such as FORTRAN or COBOL, or GE 435 Assembly Language), we are re-designing the basic Input Output System of the G. E. Operating System to run under the time sharing EXECUTIVE System on the GE 485.

Honeywell - Design of COBOL-D Compiler for Mass Storage Resident
Operating System

Task: Extend the language elements of the COBOL-D Compiler for the Tape Operating System to include disk I/O statements. Modify the compiler to use disk instead of tape for its internal processing, and include data management facilities in generated object code. Decide whether the compiler should be changed or re-written completely, and come up with the design specifications for the compiler in a tapeless environment.

Honeywell - FETCH Macro for Mass Memory Sort

Task: Design and implement the FETCH Macro for the Mass Memory Sort. When files are on random access devices, we do not

sort entire records, but sort only the record key, plus those fields which are designated to be extracted, plus a pointer to the address of the residual fields. The FETCH Macro is run after the SORT to give the user access to either the sort item (key and extract fields) or the source item (entire record). Single or double buffering is available on the sort and source files in any combination. Work performed on the Honeywell 200.

IBM (Mohansic) - Adaptation of Command Language to Graphic Terminal Devices

Task: Design and implement a system on which users can talk to a time sharing system via graphic terminal devices both alpha-numeric and line drawing type.

Re-design phase based on user reactions is pending. Staff is currently working on programming standards for time sharing.

IBM (Poughkeepsie) - 360/Model 91 Operating System

- Task:**
- a) Modify Program Interrupt Handler for S³ (Sequential Scheduling System).
 - b) Modify Program Interrupt Handler for MS/1.
 - c) Gather specifications for SYSGEN (System Generation).

NOTE: Program interrupts are those caused by illegal opcodes, addressing errors, protection violations, floating point overflow and underflow, etc.

MIT Instrumentation Lab - Programming for APOLLO Moonshot

Task: On-board guidance navigation computer for APOLLO and LEM spacecraft. Writing programs for mission 206 earth orbit LEM. Responsible for three phases:

- a) Cold soak phase of descent propulsion system.
- b) Cold soak phase of reaction control system.
- c) Coast phase with Saturn IV-B Booster attached.

Special-purpose computer has 38,000 words of memory. 2,048 are erasable, rest are read only memory (wired in). We debug on a simulator and never get to run on the computer itself. Then our code is wired in.

New England Medical Center - Hospital Payroll System

Task: Current effort consists of following portions of payroll system:

- a) Payrolls Hours Validation and Control Run.
- b) Check Writing Run.

- a) Compare hours worked to hours authorized, reports on breakdown of personnel effort by department and generates data for check writing run. Updates payroll master file with respect to raises. Checks for unexplainable disparities on payroll from last week.
- b) Prints checks for each employee based on base pay, overtime pay, special pay. Adjusts paycheck for 25 categories of deductions. Work performed on IBM System/360.

Polaroid - QUIP Processing

Task: Analyze market research data from 10 foreign countries and the United States producing over 150 reports for each country. Tabulates camera sales by demographic information. This informs Polaroid as to where to direct their sales effort (for instance, these reports might tell them that they should direct their marketing effort to little old ladies in Pasadena with 3 grandchildren and incomes under \$10K a year). QUIP, of course, is a generalized questionnaire interpreter program developed and owned by CUC.

Pratt & Whitney Aircraft - Autocoder to COBOL Conversion

Task: To convert programs written in 1410 Autocoder to 1410 COBOL so that it will be compatible with System/360 COBOL. From

documentation we get from the customer, we re-flow chart the programs so that the flow is more COBOL oriented. From input and output layouts, we code the data division; and from our flow, we code the procedure division. Checkout is a joint effort between them and us. Programs consist of portions of their financial operations system, particularly payroll and inventory.

Price-Waterhouse - Budget Section of Financial System for Comm. of Mass.

Task: To keep track of funds allocated by the state legislature to various departments of state government. To compare budgeted expenses against actual expenses, and call attention to over-runs and under-runs. In the case of an over-run, the department may ask for special appropriations. In the case of under-runs, the department may push ahead future projects. So far we have coded 28 programs. Work performed on IBM 1401.

Raytheon - Wire Wrap Program

Task: Design and implement a system for the IBM/360 to produce cards which will automatically control the operation of a Gardner Denver wire wrap machine. This machine is used to wire back panels for computers. The input describes geometrically the panel to be wired, its logical organization into modules, the position of pins in its logical modules, and the connections to be made. The computer determines in what order and in what

patterns the wires are to be strung so they do not interfere with one another, and generates the commands for the wire wrap machine. Work performed on IBM System/360.

State Street Bank - Alphabetic Locate System for Corporate Trust

Task: To search a central locate file to respond to an inquiry by customer name in order to retrieve account information. The problem is complicated by the:

- a) No hit problem -- the name may be misspelled.
- b) John Smith problem -- the name may not be unique.

Procedures are incorporated to handle both these situations as well as the normal one. The system also handles maintenance of this file. Work performed on IBM System/360.

Western Electric - Order Analysis System

Task: Review current order analysis system which is currently done on 7074 and 1401 systems, and design a new system. Old system is partly automated and partly manual (70% automated, 30% manual). The new system will be an integrated system that will involve five different departments.

The system must handle problems associated with a highly transient inventory. Incoming orders must be exploded downwards by parts to determine which components should be manufactured, and when they should be manufactured, so that the next higher generation component may be assembled from it (and others on the same level). This system must interact with shop orders, shipping, accounting, merchandising, and the storeroom.

Western Electric - 7074 to 360 SORT Conversion

Task: To convert own coding in 7074 machine language inserted into Sorts to System/360 Assembly Language, so that these modified Sorts will run on the System/360. Own coding consists of additions to the first and third phases of Sort Routines, linked through provided exit points, so that users may add records, delete records, summarize items, count records, etc., while the Sort is processing, instead of having to make a separate pass of the file.

William Carter Company - Production Planning System

Task: Conversion of an existing application from the Univac File Computer to the Honeywell 1200. The system plans production of garments based on projected sales. Included in the production of garments is the impact on ordering and production of garment

components. The system produces work orders for the production facility. Typical output tells the cutting room what volume of which styles to cut from the fabric.

William Carter Company - Stock Allocation for Order Processing

Task: This system determines how many units of each item on inventory should be shipped to each customer in order to meet shipping dates as well as maximizing the flow of stock from the warehouse. Orders come in and are categorized by shipping date. Priorities are assigned to orders needed immediately, and to large customers. By a suitable mathematical technique, the number of items to be allocated to each order are determined from inventory level, demand, and priority orders which cannot be initially satisfied are placed in the back-order file and are given a higher priority for the next cycle.