INDUSTRIAL DATA PROCESSING APPLICATIONS REPORT

Applications	Redemption Recording, Stock Replenishment, Automatic Forecasting
Type of Industry	Trading Stamp Distributor
Name of User	Sperry and Hutchinson Co. New York, N. Y.

Equipment Used	IBM 7010 Computer System Honeywell 200 Computer System Bell System Data Speed Equipment IBM 1232 Optical Mark Page Reader IBM Punched Card Equipment

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Synopsis

With about 40 percent of the trading stamp market and stamp print volume in 1964 three times greater than the United States Post Office, the Sperry and Hutchinson Co. is committed to automation to keep its catalog values high and its distribution system at top efficiency. The company uses a modified, modular management information system, referring to individual application areas or modules within its MIS, rather than MIS, per se.

S&H is using its present system, built around an IBM 7010 and Honeywell 200, with extensive peripheral gear, for redemption recording, stock replenishment and automatic forecasting which form the heart of its merchandising application.

The S&H system literally starts at the some 70,000 retail establishments that use the green trading stamps, up through the 850 branch outlets, to the nine regional warehouses to the corporate computer center in New York City.

Involved in automation since 1948, S&H is continually refining its use of computer machinery. Eventually, executives seated in a conference-theater type room will use slide material, whose data is pulled from the computer, to help make management decisions affecting such diverse areas of company operation as warehouse site location and forecasting changes in redemption rates.

The Sperry and Hutchinson Co., distributors of S&H green stamps, is the oldest and largest trading stamp company in the United States. Founded in 1896, the firm does not make its sales figures public; however, in 1965, volume was estimated at $375 million. The volume of the entire trading stamp industry is about $1 billion, placing the S&H share close to 40 percent.

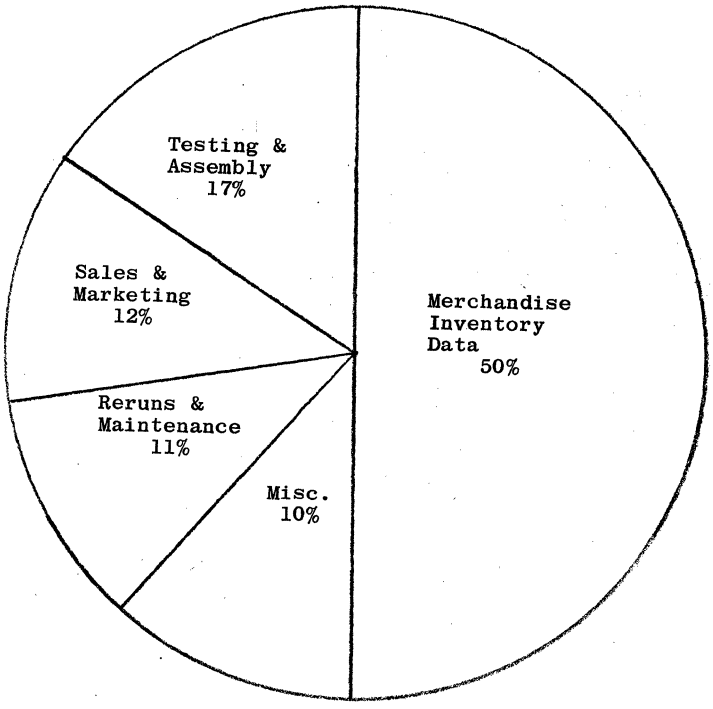
EDP at S&H

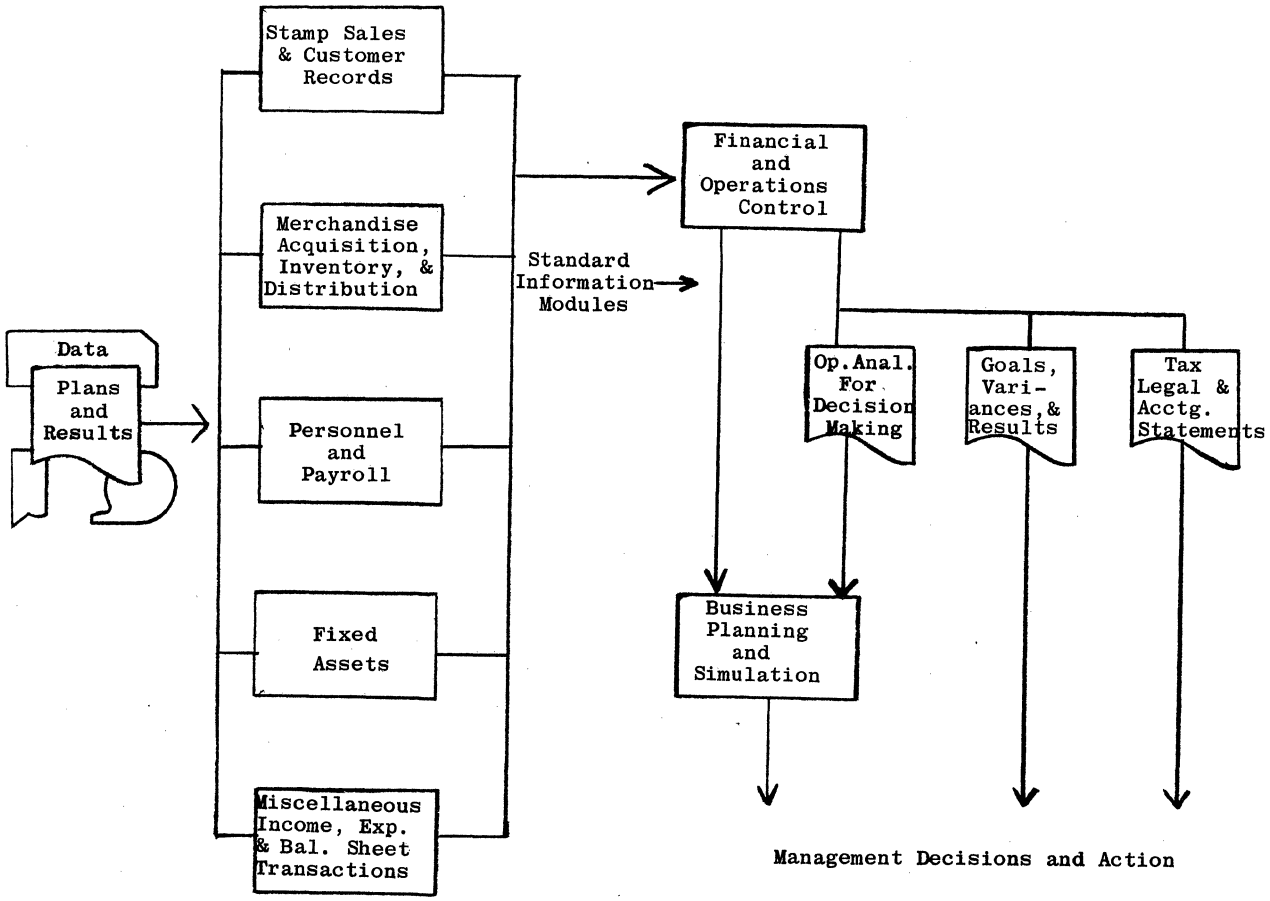
S&H is committed to automation to keep its catalog values high (the system works with 1,700 redemption items) and its distribution system at top efficiency. The company has been involved in automation since 1948 when it installed unit record equipment. In 1957, it began using a service bureau and a year later an IBM 650 was installed at corporate headquarters in New York City.

Today's system centers around an IBM 7010 with a 100K memory with a configuration of 12 tape drives, a printer and a card reader/punch. In the early 1960s, S&H began using three 1401s. Two of these machines were eventually exchanged for an IBM 1410; the 7010 replaced the latter device. In 1965, the third 1401 was replaced by a Honeywell 200, which is used primarily for media-conversion. The H-200 has 20,480 characters of memory, five tape drives, two printers, a paper tape reader, a paper tape punch, a card reader and punch and a communications control unit. The latter machine is used for transmission of shipping orders to the company's nine warehouses.

An IBM 1232 optical mark page reader, which handles 50 million redemption transactions a year, and IBM unit record equipment round out the computer complex. The unit record devices include 26 keypunches, 13 verifiers, two 402 tabulators, and one each of the following: 602 calculator, 514 reproducing punch, 085 collator, 084 sorter, 082 sorter with counters and 548 interpreter.

COMPUTER UTILIZATION TIME IN 1965.





S&H'S MASTER PLAN FOR INFORMATION PROCESSING. SOME OF THE APPLICATIONS, SUCH AS FIXED ASSETS AND BALANCE SHEET TRANSACTIONS, WILL BE COMPUTERIZED IN THE FUTURE.

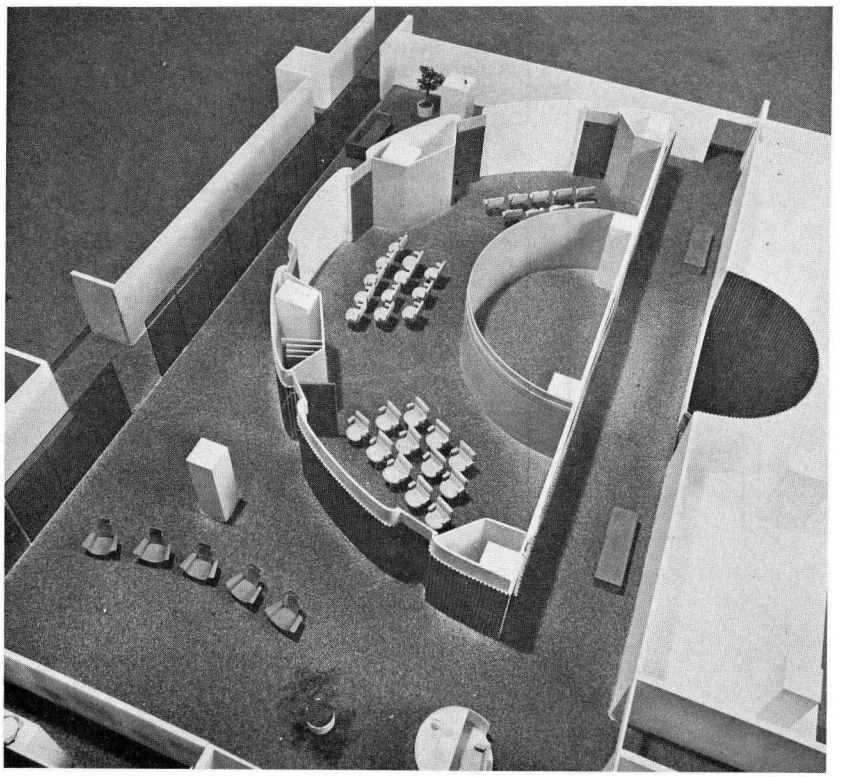
Bell System Data Speed equipment is located in the New York City computer center and in the nine regional warehouses located in Natick, Mass.; Metuchen, N. J.; Atlanta, Ga.; Chicago, Ill.; Cincinnati, O.; Fort Worth, Tex.; Los Angeles, Calif.; San Francisco, Calif.; and Portland, Ore.

Total personnel in systems and data processing numbered 166 at the beginning of 1966.

Current applications handled by S&H's computer complex include stamp delivery (sales) and customer records; merchandise acquisition, inventory and distribution; and expense accounting and personnel records. (The customer referred to is the retail establishment which gives out the green stamps.)

Processing of merchandise inventory data accounted for 50 percent of computer utilization time in 1965, testing and assembly (including debugging) for 17 percent, sales and marketing 12 percent, reruns and maintenance 11 percent, and accounting and miscellaneous 10 percent.

Although basically a COBOL program user, S&H also uses AUTOCODER, FORTRAN and IBM's IMPACT for Inventory Management Program And Control Techniques. At present, only the Metuchen warehouse is on IMPACT; by the end of 1967, all of the warehouses should be on it.



MODEL OF CONFERENCE-THEATER TYPE ROOM SHOWS PHYSICAL LAYOUT. CHAIRS FACE PROJECTION SCREENS. AREA OUTSIDE THEATER IS RECEPTION-GATHERING ROOM.

The S&H System

Redemption recording, stock replenishment and automatic forecasting form the heart of S&H's merchandising application, which aims at providing good value and prompt redemption.

The S&H system can be said to start at the some 70,000 retail establishments in all fields that use the green trading stamps. Included in this total are about 15 percent of the U.S.'s food chain stores. Next step on the pyramid is the more than 850 S&H redemption centers which must order stock replenishment items from one of the nine regional warehouses.

Using a preprinted sensitized sheet, internal form number 909, a clerk at the branch level ticks off in pencil items redeemed. These sheets are mailed directly to the computer center in New York City where the IBM 1232 optical mark page reader scans the data.

Input is then fed into the IBM 7010. The computer keeps track of redemption history and compares it to projected demand to determine how many pieces the branch should need in a given period of time. Output order data is sent to one of the nine warehouses which will replenish the branch's stock. Eventually, S&H will have clerks keypunching redemptions at the branch level and then bring this information via Data-Phone to New York City at night for running on the computer.

At present, all West Coast branches are on a system that automatically forecasts demand. This automatic forecast is achieved by keeping track of past demand through a statistical technique called exponential smoothing and then combining this with a predicted pattern of redemptions of any particular item. Exponential smoothing, in effect, keeps track of a weighted moving average.

The result has been better inventory control of items than in other areas of the country. All branches are expected to be on this aspect of merchandising application by early 1967.

Under this system, stock status reports are issued weekly. This frequency plus the accuracy of stock replenishment and forecasting that the computer has given to S&H's operation on the West Coast has increased merchandiser confidence in this new method of operation. As the merchandiser gains more faith in the computer, stock status reports will be changed to a monthly reporting status. Eventually, no paperwork will be issued except in cases where the computer notes exceptions; at that time, an interim-type of status report will be released.

Elsewhere in the country, forecasts of redemption demand still come from the branches, in report form, to the warehouses where they are punched into paper tape. This information is transmitted over Data-Phone to New York City, where a Honeywell 200 converts it to magnetic tape in the S&H computer center. The paper tape is read in on an H-209 paper tape reader and written out on one of the five Honeywell 204 magnetic tape drives. Stock status reports -- which show past redemption history and current inventory position -- are issued twice a month to the branches.

Results and Future Plans

The management information system in use at S&H has been developed to ensure good value and prompt redemption, for when a stamp saver comes to a redemption center she wants action; that is not the time for the store to be out of stock on items.

IBM 7010, LOCATED AT COMPUTER CENTER IN NEW YORK CITY, KEEPS TRACK OF REDEMPTION HISTORY AND COMPARES IT TO PROJECTED DEMAND.

The plan at S&H -- to improve its twin goals of "good value and prompt redemption" -- is to grow into a larger third generation computer providing direct access storage and greater direct input and output capabilities.

Applications will be expanded. "Our current applications will each do a more complete job," Allan Vesley, S&H manager of systems and data processing, explained. "Our company's Operations Research Dept., formed last year, is working on development of more statistical and mathematical forecasting systems. These systems will hopefully improve current forecasting that we use for demand of items in our branches and also for gross forecasting systems, forecasting gross sales and over-all redemptions to be used for longer-ranged business plans."

S&H is also developing simulation models of some aspects of its operations. Using these models, various operating departments of the company will be able to investigate the possible outcomes for different cources of action. For example, S&H has developed a financial model of the company, similar to those developed for management gaming. "Simulation," he said, "is used to pre-test decisions."

Added Vesley: "Right now there is a large barrier between the amount of information available, the considerable power of computers, and the people who need such information as an aid to rapid, accurate decisions and comprehensive plans. Our long range aim is to try to close that gap and to give decision-making individuals more access to the computer itself."

S&H has taken a significant step to achieve this goal. The company has set up a conference-theater type room where executives can utilize the latest computerized gadgetry to help them make decisions. At present, applications and data are presented in visual form, utilizing slides and charts. Eventually, management will be able to make such decisions as where to locate a new warehouse and to forecast changes in redemption rates in particular items more accurately and rapidly. For example, high-priced wristwatches are redeemed more in the spring near graduation time, and low-priced wristwatches get more of a call at Christmas. Any significant change in pattern of over-all redemption will be immediately apparent in the information presented to the executives in the command center.

Ultimately, a datachrome display generating machine -- such as the one developed for the Strategic Air Command -- may be hooked into the computer. This would give management decision makers the ability to use slide material within seconds or minutes after it is pulled from the computer.