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DISTRIBUTED PROCESSING IN A BANK: IBM Approach

by Liba Svobodova

As a source of additional information about use of computers in a bank, I contacted the IBM Data Processing Division in White Plains. The application packages for banks available from IBM can be divided into two areas. One area is retail banking oriented transactions. This package is intended to support operations of tellers and clerks in the bank and also transactions conducted from the various customer oriented machines such as the cash machine or more elaborate machines that allow customers to automatically transfer money between different accounts. The other package is for distributed processing of checks. This type of processing seems to be popular in the southeastern region of the U.S., where a single bank might cover the entire state. For example, this type of system is operational in the North Carolina National Bank.

The distributed processing of checks consists of automated routing and processing of information about a check submitted at some branch of the bank without actually sending the physical check. Of course, the physical check finally has to make its way back to the owner of the account, but its path may be different from (simpler than) the path that the information needed by the bank has to travel. Namely, the information about the check must go from the

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branch to the central office, and from the central office, possibly via a clearing house, to the appropriate bank, whereas the check itself may go directly from the branch at which it was submitted into the last stage of the previous path, that is, the destination bank.

Let us return to the first area, that is, retail banking oriented transactions. If the distinction between a distributed system and a centralized system is a distribution of the data base, most of the systems sold by IBM for processing of retail banking transactions cannot be classified as distributed systems. Normally, there is a central data base, supported by an S/360 or S/370. Individual terminals are clustered at IBM 3601 and 3602 controllers (these are basically minicomputers); the controllers process the transactions and possibly may have to access the central data base of the bank that may be at a remote site. Thus, there is a distribution of the processing but not a distribution of the customer data base, that is, the accounts of the bank customers. One step further is what IBM calls the negative file distribution, where in addition to maintaining the central data base, a file of those accounts for which debit (money withdrawal) transactions should not be granted, is sent to all of the distributed controllers. In case the central base is inaccessible, transactions may be authorized at the local controller with the exception of transactions against this negative file. I was told that approximately 25% of the installations use this negative file approach. The negative file may represent on the order of 1% to 2% of the actual data base of the bank.

The application package for retail banking is an IBM product called Program Customizer 3600. As the name indicates, this package can be customized to the needs of individual banks, that is, the bank can set the

level of distributed processing within the system. The Program Customizer is described in the IBM manual SH201688-2 with the title "Program Customizer for the IBM 3600 Finance Communication System: Program Customizer Guide". Additional information can be obtained from this manual. Also, one of the local banks in the Boston area, namely the Essex County Bank, uses the system PC 3600; possibly, people in this bank could provide us with some information about how satisfied they are with this package and what other functions and capabilities they would like to see in terms of distributed processing.