Special Systems Division

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The Special Systems Division is relatively new at NCR, having been formed in October 1973. The Special Systems Division is involved in large-scale transaction oriented mainframe systems and in extensive communication systems; systems which are larger and more complex than the standard Criterion configurations. I would like to briefly describe the Division's background, operating charter, some key activities and relevance to the new Criterion system.

The Special Systems Division is an outgrowth of NCR's development activities in the early seventies, leading to the successful installation of one of the world's largest on-line banking systems at the Sumitomo Bank of Japan. For background information purposes, let me briefly describe highlights of this system:
It consists of two major computing centers, in Tokyo and in Osaka, between which they control some 190 banking branches and 5,000 terminals, located throughout Japan, on a real-time basis. Seven million customer accounts are being maintained on-line. The system can handle field updates and inquiries through terminals at response times not exceeding five seconds. The Osaka system has a capacity of 300,000 transactions per hour, and the Tokyo system has a capacity of 200,000 transactions per hour. This is one of the largest systems of its kind in the world.

There were two major system product developments associated with this project:

1. The Century 350 mainframe and TOX software: Both hardware and software are oriented towards achieving a high-capacity transaction-oriented system. It also provides for high reliability and several levels of back-up, system flexibility, and an attractive cost/performance ratio. The Century 350 configuration is highly flexible; nine processors can be interconnected in a true multi-processing environment. With all its excellent on-line capabilities, the system also maintains full compatibility with the standard NCR batch software, which can run concurrently with the on-line jobs.

2. The C-721 Communications Processor: This is a high capacity communications processor, based on NCR's standard minicomputer, which is being used as both a Front End to the C-350 and a Branch Controller for terminals in the bank's branches. This product is available only as a part of a total system offering. An extensive Communications Network System has been installed throughout Japan to effectively

control data transmission between terminals and computer centers. Several levels of back-up provide for a highly reliable system.

Another aspect worth mentioning is the Program Management philosophy used throughout this project, which I will discuss in more detail later on. It was this management approach which enabled our company to complete the complex and extensive systems developments within a very short timetable of less than three years, and within the budget target.

NCR's success at Sumitomo did not just stop there. Today there are some twenty banks in Japan who are using the same system. In addition, the same system has been installed in three of NCR's on-line data centers in the United States. And the same system concept is being carried over to the Criterion.

The Special Systems Division was formed in 1973, to further capitalize on the systems technologies and program management know-how acquired from this significant development program.

The Division's charter is to program manage a number of advanced systems development programs for a select number of sophisticated customers; thus, increasing the leverage of the Company's standard product lines. All our projects are with and for specific customers. Our activities help us derive new product fall-outs and other benefits which are applicable elsewhere in our product line.

Almost by definition, our Division is involved in two prime system areas, although not restricted to them:
1. Large-scale transaction-oriented mainframe systems (formerly the C-350, the Criterion in the future).
2. Communications network systems.

We operate through and jointly with our marketing organizations throughout the world. When SSD becomes involved in a new project, we assume a full program management responsibility for its technical and business aspects. We establish joint implementation teams consisting of the Division's personnel and Marketing's, and quite often the customer's. We operate closely with the customers in a manner which contributes to effective communications.

The bulk of our activities are in systems and software developments, and in staging of customers' systems on our site for extensive systems integration testing prior to delivery. This testing concept greatly reduces the amount of time it takes to install complex systems in an acceptable manner.

The Division is not involved in hardware manufacturing activities. It can best be described as a captive systems house, which allows NCR to expand in new market areas in a selective and controlled risk environment.

We are now located in Torrey Pines, and you will have the opportunity to visit our facilities later on this afternoon.

I would like now to briefly discuss some or the Division's current activities.

A major program I wanted to review here is the NCR's Data Communications Utility system (DCU) which is currently being installed by Montgomery Ward on a nationwide basis. This system is providing Montgomery Ward with a single, integrated, nationwide data communications system linking approximately 25,000 terminals, numerous remote batch systems and four major Information Processing Centers located in Chicago, Kansas City, Oakland and Baltimore.
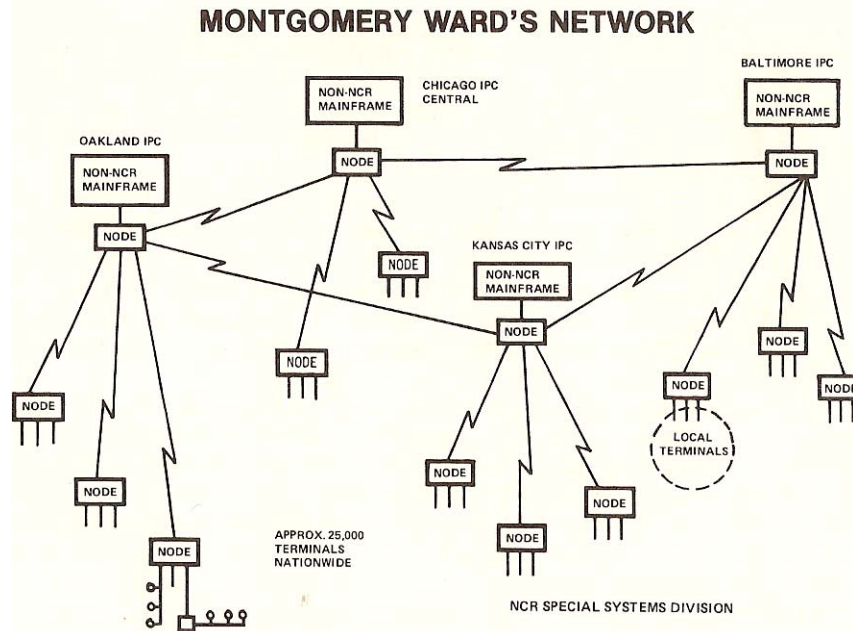
This contract epitomizes what the Special Systems Division is all about, and therefore it is worth elaborating some more. Montgomery Ward has been a major user of NCR's POS terminals for some time. Concurrently it has also been a user of IBM mainframes in its four IPC locations. With the glowing emphasis of on-line applications, requiring the POS terminals and the computer mainframes to operate interactively, the competitive battles between Montgomery Ward's two prime vendors has reached a peak.

IBM's thrust was to extend system control from the mainframes out toward the terminals, covering it all under a single and a unique umbrella. NCR's thrust was to propose the DCU, which provides for a self-contained, independent, environment between the user's computers and terminals. It gives the user full flexibility in separately choosing the terminals and computers of greatest advantage to him. The NCR proposal offered Montgomery Ward a much greater degree of flexibility, as well as being more economical. Being on the ground floor of a new system development effort, Montgomery Ward has also had the opportunity of making valuable inputs towards the DCU system specifications.

The nodes in this system consist of the C-721 Communications Processor.

The system will allow any devices connected to it, terminals or computers, to communicate with all other devices just like a public telephone system which allows all subscribers to dial-up all other subscribers. It will provide for error control, message

switching, store-and-forward, automatic load levelling and automatic rerouting of messages in case of breakdowns.

This contract represents a significant thrust by NCR into the growing communication network arena. The DCU solves many of Montgomery Ward's problems as a modern retailer. It will allow Montgomery Ward to handle credit sales for its customers on a nationwide basis. It will also reduce its total communications costs by eliminating redundancy and unnecessary circuits. It will distribute the data processing tasks in a more sensible and economic manner. Obviously, it will also provide the nucleus for an Electronic Fund Transfer System (EFTS).
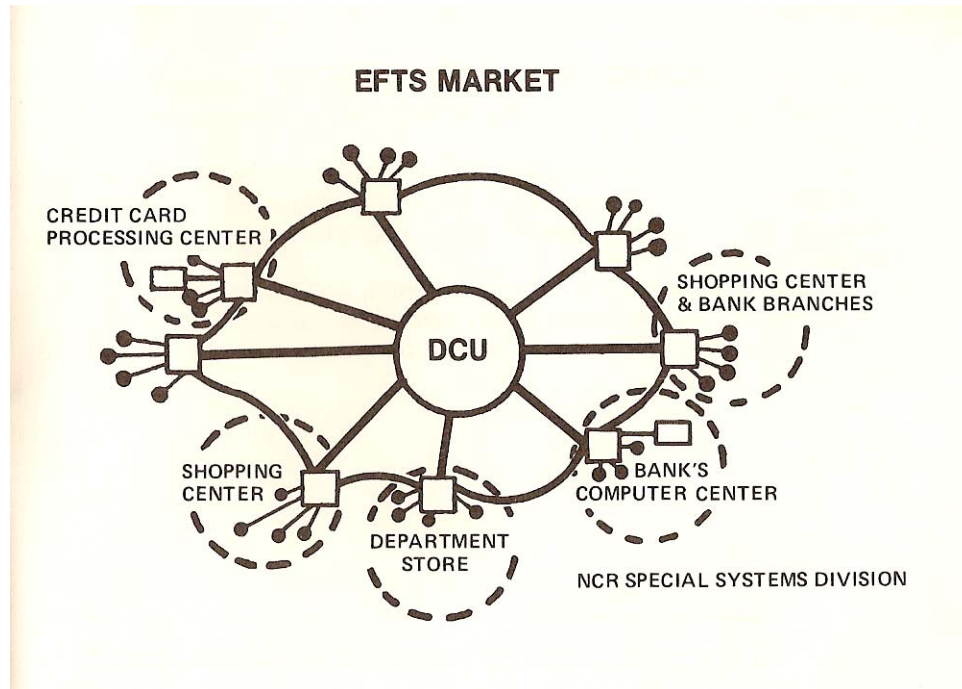
The DCU has already been selected by several other large customers, but their disclosure is still premature. Let me describe to you one such user, an "unnamed" foreign telephone company.

This telephone company will install the DCU across its country as a digital public utility service. User's, such as banks, retailers and manufacturers, will buy digital transmission services on an "as needed" basis. The telephone company intends to install these "nodes", consisting of C-72I Communications Processors, in dense shopping centers and other high activity areas. Users' terminals and computers will be interfaced to the nearest nodes. This is analogous to your telephone receiver being connected to the nearest PBX or Telephone Switching Center. With this approach, several, or many, users can use the DCU concurrently.

It is worth noting that this telephone company has selected NCR's DCU for two key reasons:
1. The DCU's desirable and competitive characteristics.

2. The DCU's capabilities of interfacing to the various NCR terminals, which in turn make the DCU services highly marketable by the telephone company. So, both NCR and the telephone company arc gainers.

We expect the DCU to play an important role in the EFTS marketplace. By its nature and definition, it provides an interface for diverse terminals and computers, both NCR's and others, which is the hallmark of the EFTS system. The DCU can provide the link to merchant shops in a shopping center, banking branches, banks' computer centers, department store POS terminals, credit card processing centers, and so on. Certainly, NCR is not unprepared to play a major role in this arena.

In summary, we have been very effective at leveraging our development efforts which date back to the Sumitomo Bank system. Each new project is economically sound in its own right, in addition to providing new systems fall-outs.

The DCU system not only protects our current market position in POS terminals, but effectively supports a growing sophisticated marketplace in computers and terminals in general. It certainly provides the nucleus for a Distributed Processing system.

The new Criterion extends our capabilities in on-line, transaction-oriented systems, with even a more powerful and a more competitive product.

The Special Systems Division is looking forward to an active and exciting period.

Thank you.