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Computer-Facilitated Communication Needs and Values

by

Donald W. Dill
Certified Grocers of California, Ltd.

The subject I have been given to speak on today is a complex one and I don't pretend to be an expert. I do have some thoughts as to where Certified Grocers is as a company and where the food distribution industry is, as well as some thoughts as to what direction we should be taking.

First, let me start with a little background on Certified Grocers. For those of you who may not be familiar with my firm, we are a retailer-owned wholesaler, headquartered in Los Angeles. We were founded in 1922. Our 1986 fiscal year was completed September 1. Our sales will be approximately \$1.6 billion. We service approximately 4,000 stores through nine divisions and three subsidiaries. At the present, all of our facilities are located in Southern California, although we are constructing a dry grocery facility in Stockton, just east of the San Francisco/Bay area.

Let me give you a little background on Cergro's history over the last 40 years in sales, computer hardware and electronic interchange applications. We installed our first computer, a Burroughs 205, in 1957 to process orders. We were primarily users of Honeywell equipment from 1965 through 1984 when we completed a conversion to IBM equipment. Our first electronic data interchange occurred in 1966, when we were pioneers in the transmission of member orders via acoustically-coupled devices. Today, 100 percent of our orders are processed in this manner. In the early 1970s we began to use distributed processing in financial areas and in our remote warehouses for the transmission of invoice

and label information. We began to support our retailers on point-of-sale equipment in 1977. Our first involvement in UCS occurred in 1982. Host-to-host communication of orders from our larger retailers who have mainframes began in 1985. Even more recently, we have added office automation and voice messaging.

Before I go further with Certified and the food industry, let me spend a few minutes on the general subjects of electronic communication and electronic information. This is an exploding area. In the United States, 30 million computers are rapidly being connected to each other and to databases in a vast maze of interlocking networks. Banks are connected to grocery stores for direct bill payments. Several networks connect 45,000 cash machines to banks for a national cash withdrawal system. The Travelers Corporation links 30,000 employees and 10,000 independent agents with 35,000 terminals connected to 18 computer databases. They claim yearly savings of 32 railroad boxcars of paper. Rockwell International uses a pyramid network of 10,000 terminals, 7,000 personal computers, 60 computers and one super computer. Parallel networks check on 800 million credit cards. VISA alone performs 50 million verifications monthly for 18,000 banks at 1.0 second per transaction. Examples abound of increasing payoffs in efficiency, speed, productivity and control. The New York Stock Exchange cites a 400 percent productivity improvement in 18 months.

Since the subject today is computer-facilitated communications, let me expand on

the trends in this area. Data processing has always smacked of "black magic" to many old line managers. It is filled with people who use a strange vocabulary and speak in acronyms. The communications specialty is no different--as a matter of fact, it is worse. Fortunately, most of us have been around data processing long enough to eliminate most of the phobias associated with D.P.

Even more fortunate is the change in emphasis from the processing of data to the processing of information. We are quickly evolving into the much talked about "information society." The creative use of computers by non-data processing experts, namely "end users," is one of the most significant developments in corporate computing to have taken place in the past decade. Even so, it will be the reluctance of managers to adapt, not technology, that will keep companies from reaching their full potential.

One observer suggests the pre-computer age was characterized by man's ingenious use of crude tools. The computer age is characterized by man's crude use of an ingenious tool. Hopefully, the Neo-computer age will be characterized by man's ingenious use of an ingenious tool.

One trend that is developing relates to the way equipment purchase decisions will be made in the future. For current hardware owners the issue of compatibility and connectivity are important. For these people, the increased use of communications and networks will be slow, costly and filled with protocol converters and other black boxes. For the first-time purchaser that is not so. Kenneth Olson, CEO of Digital, suggests that future buyers will first buy the network and then buy the hardware to go with it. DEC's new VAXmate is the first PC to be designed with networking in mind. IBM's long-term strategy has always been to move intelligence and functionality out of individual machines and into a SNA network.

Networks can be extremely expensive and, in a strategic sense, a significant marketing advantage. E. F. Hutton & Co. has spent about \$100 million over the past eight years

for a telecommunications and satellite network to deliver information to its 400 retail offices. Managing Director Glen Renfrew of Reuters, which has a 51 percent return on equity, says, "Our network gives us enormous strength." Federal Express has its own satellite communications system, microcomputer terminals in its vans, and a computerized tracking system which allows it to guarantee:

- 10:30 a.m. delivery
- Exact status of a package within 30 minutes

McGraw-Hill, Inc., on the other hand, argues that creating a network based on any one delivery system is unnecessary and could be self-defeating, in part because technology changes so quickly. Chief Executive Joseph L. Dionne plans to distribute information not only via computers, but also on floppy disks, compact disks and paper. "We sell content and we don't want to own the printing press," says Dionne.

It is widely speculated that we are on the threshold of the electronic enterprise, where everyone can hook up his/her terminal or personal computer to a single enterprise-wide network and freely access and exchange data, text, voice and graphic messages or images.

Business Week, in its September 15, 1986, issue had a special report titled "The Rewiring of America." In it they describe a modernized network with these characteristics:

- Advanced digital networks will be seven times faster.
- Fiber-optic lines will be even faster.
- A single integrated digital network will displace several networks; e.g., phone, data, facsimile, computer, LAN.
- Digital phones with displays will show who's calling and let the caller leave a written message.

- Advance services: home banking, home shopping, electronic mail.

Unfortunately, such integrated networks will be a long time in coming, if indeed they ever become widespread. In the data processing area alone, many organizations already have multiple independent and incompatible networks that cannot exchange information.

The compatibility of networks results primarily from the fact that the various systems have been supplied by different vendors who support different communications protocols and who, therefore, cannot communicate with each other. Integration will not be easy. At best, it will occur gradually as organizations begin to replace applications running on existing non-compatible or obsolete equipment and software, with new systems from vendors whose equipment and software conform to an industry or de facto standard for the exchange of information. This type of conversion will require a major investment of time and money and will be difficult to justify as long as the old applications continue to serve a useful purpose.

Connectivity and compatibility have long been a problem for users with multiple hardware vendors. It has become more so with the explosion in the use of word processors and PCs. For a long time the solution required the user to write special software or to acquire a protocol converter or both. There is a new breed of entrepreneurs who are making a business of bridging the computer language gap. Bridge software products, which cost as much as \$150,000, link word processors, PCs, mini-computers, and mainframes from a variety of manufacturers together. This will be a boon to the established D.P. shop with a large investment in applications running on a variety of machines.

Standards are another issue of importance. The need for standards grows with the proliferation of separate applications and hardware systems. The development of new standards will open new avenues to new applications, as well as provide for a migration path for existing systems. The caveat I would insert here to the standard setting group is,

don't be so complex as to complicate the use of the standard beyond a level based on the worth of standardization. Certainly, this is a catch-22 situation.

We at Certified believe that new data communications technologies and applications will be developing at a very rapid rate. We believe we have done reasonably well in keeping our retailers competitive in the area of data communications. We recently completed a full D.P. strategic plan which identifies the direction that we, as a corporation, will be taking to satisfy the needs of our employees and our customers for the communication of information.

From that strategic plan I would like to share with you the trends we at Certified see having an impact on the food industry in general and the wholesale portion in particular. The general applications trends are:

- Aggressive computer automation programs.
- Increase in in-store systems.
- Increased retail support. In many organizations support to retailers is gaining parity with corporate systems.
- Improved service orientation; e.g., reduced customer order lead time.
- Emphasis on operational rather than financial systems.

From a technical perspective, the trends that show up include:

- New systems are on-line.
- Systems are more integrated.
- More computer resources are needed.
- Increased use of database management systems.
- Increased use of productivity tools; e.g., 4th level languages.

- Evolving support for "end user computing."
- Development of extensive communications networks, some combining voice and data.

Retail Automation Survey

At the FMI Retail Automation Conference in June, Daniel Raftery, of Willard Bishop Consulting Economists, Ltd., presented the results of a survey of 32 supermarket companies made by the Bishop organization. The survey found the most popular applications to be:

<u>Application in Use</u>	<u>% of Companies</u>
Time & Attendance/Labor Scheduling	48
* Price Audit	41
DSD	31
Check Cashing	28
Accounts Payable/Receivable	24
Merchandising	24
Customer Service	24
Energy Management	24
* Electronic Ordering Systems	21
Pharmacy	17
* Electronic Mail	17
Meat System	14
Video Rental	10

*Typical electronic communication applications.

It is interesting to note that neither ATMs or EFT made it to the top. The survey

also gathered data on the systems in test. The list looks very similar, so I will not cover them. The surveyed companies report an average of more than two phone lines per store for data communication. A 50 percent increase is expected in the next year.

About one-fifth of the surveyed companies reported they had discontinued a retail automation application. Company executives indicate that successful implementation requires overcoming the following challenges:

- Obtaining headquarter commitment
- Managing multiple phone lines
- Managing complexity of project
- Obtaining store commitment
- Improving software
- Improving data accuracy

Vehicles/Carriers of Information-- Certified Plans

Next, I want to review the various vehicles used to carry information and which ones we expect to use at Certified.

- Paper - a dramatic reduction over time, but we can't get away from it. I've heard it said, "The paperless office is about as practical as the paperless toilet."
- Micrographics - we are using a fair amount of this technique. We expect it to grow and within two to three years to have our own COM system.
- Voice grade lines for voice - this is another one of those areas you can't get away from entirely. Our voice messaging system has helped and we expect more as personal barriers are reduced.
- Voice grade lines for data - you bet! Both dial-up and leased lines. In many instances it is still the most cost effective approach.

- Local area network - we expect to install IBM's token ring LAN within the next two to three years for PCs, word processors and CRTs. We currently have an office automation network.
- Digital network - we are installing a PacBell "T-1" line to our facilities in Stockton and Corona. This is a triangular design which will give us backup along with the ability to transmit voice and data over the same lines.
- Channel connect - we still expect mini-computers and mainframes in our main facility to communicate this way.
- Floppy disks - we believe there are several applications where a floppy disk mailed to an information user is a good balance between cost and timeliness.
- Magnetic tape - many of our retailers with host computers receive data tapes from us for further processing on their own computers.
- Voice synthesizer - we believe there are information needs for small amounts of data in a timely manner which can best be satisfied through a touch-tone phone and a voice synthesizer.
- Fiber optics - basically a phone company issue. We will not consider it for our in-house needs.
- Microwave - we studied it and couldn't make the numbers come out for us.
- Satellite - we do not have the wide geographic area needs required to cost justify this technology.
- FM transmission - this definitely makes sense for our retail applications and we may find a use for FM in our warehouses for inventory taking, stock checks and receiving functions.

Let me move from the potential list of vehicles to the applications we at Certified

are using and the ones we expect to develop in the future.

Current Certified Communications Applications

Retailer Related

- Orders
- Wholesale cost changes
- Retail price changes
- POS support
- Accounting data - invoices and statements primarily
- Shelf label requirements

Internal Communications

- Remote warehouses - receiving, invoices, stock status, driver standards, routing/batching for Mech warehouse, and salvage transactions.
- Distributed systems - accounting primarily
- End user computing - file downloads to PCs and word processing
- Purchase management - BORIS and INVEST
- Program development

Other

- UCS - purchase orders and invoices
- Banks - deposits from lock box, checks cleared and bank drafts

Recently, we chartered a task force of Retail Operations employees and Data Processing employees to determine the specific applications we should be developing. The information from this group, plus that from our strategic D.P. plan, gives an outline of applications we should be developing. They are:

Member Related

- Computer-guided ordering
- Data inquiries - retail prices, stock level, promotional allowances, order status and account balances
- Order transactions - additions, reserve and merchandise and specialty orders
- Accounting data
- Bulletin data - new items, deals, etc.

Vendor and Others

- UCS - additional vendors and additional transaction types
- Information center - for internal users mostly
- Expanded internal users
- Remote disbursement banks

Certified admires the work being done by other food distributors in the computer-facilitated communications field. There is a lot of work being accomplished with EFT and ATMs. Bill Bishop's survey identified a number of other communications applications which are being developed. One of our sister wholesalers has a competitive pricing model where a competitor's ad prices are transmitted to the model. The model then runs the prices against the retailer's sales patterns and estimates the impact of meeting the competitor's prices.

At Certified I am responsible for both strategic planning and data processing. Communications has a strong appeal to a strategic planner. There are several companies who have used computer-facilitated communication systems to create a competitive advantage. I mentioned Federal Express earlier in my remarks. Other examples of companies who have done this are:

- American Airlines - with its Apollo reservation system

- American Hospital Supply - with its ASAP ordering system
- Burger King - has a network which provides daily sales from all units and from which they derive instantaneous market research data and intelligence

Retailers with POS systems have an opportunity to duplicate what Burger King is doing. I suspect many are.

With computer-facilitated communications, it is important for a firm to have a clear understanding of what it means by communications and a strategy for making communications an important factor in its business plan. Let me give you a list of issues to be considered. First, it is important to recognize the driving force is the information to be communicated and not the communication vehicle. With this in mind, the information takes on value according to its timeliness and functionality. Many of the firms selling electronic information are successful because of the time value of the data in its database.

In the electronic information industry, there are some very successful companies selling information based on its time value. Reuters, with revenues of \$505 million, Quotron, with revenues of \$187 million and Telerate, with revenues of \$149 million all generated from highly perishable commodities and securities quotes.

Some information may not be so time critical as to require the expense of instantaneous access. In the same electronic information industry, three major companies dropped videotex endeavors because the time value of their product would not support the fees required to make a profit. Knight-Rider Newspapers, Inc., spent \$50,000,000 only to discover that potential subscribers in the Florida test market liked the service, but preferred paying 20¢ for a printed newspaper to buying \$600 in equipment to receive an electronic version.

Another issue is the frequency of need for information. This will answer questions relating to the type of terminal equipment

and communication link. High volume users may be permanently connected, while medium frequency users may use dial-up procedures. Some mailing of floppy disks will be used. We expect low frequency users to use a telephone. Digital Equipment Co. manufactures a product called DECTalk. This device turns a touch-tone telephone into a computer terminal. The device is a voice synthesizer and is approximately the size of a large modem. The caller uses his touch-tone pad to make an inquiry of the computer. The computer uses its voice synthesizer to respond to the inquiry. Fidelity mutual fund owners can inquire of their account balance using this technology. We expect to use it for order tracking and product availability inquiries.

Part of my charter was to identify present research needs for future decisions. I have a few questions to ask. You will need to translate them into research needs.

1. How do we make a complex problem simple--both from the technical side and the applications side? We need to recognize the needs of the user are for immediate action and he/she will not take a long time to understand the complex factors involved in computer-facilitated communications.
2. How do we overcome the people problems--the reluctance to accept new approaches? See above.
3. How do we convert to the new technology with the tremendous investment in current equipment and systems?
4. How good is the developing bridge software? Will it allow one to achieve a balance between getting the new technology and retaining the old investment?
5. How can we achieve industry standardization without the complexities that are associated with industry standards? For example, the UCS standards--SAMI takes warehouse withdrawal information from virtually every wholesaler in the country using the warehouse format.
6. Can the physical network services facilities keep up with the geometric growth rate in demand?

I will leave you with this closing thought:

"The cost of ignoring communications in business can be measured by the cost of having to catch up."