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SCAN Newsletter, LTD. • 11 Middle Neck Road • Great Neck, NY 11021 • 516/487-6370 • FAX 516/487-6449

Volume XVII Number 11

July 1994

In an unexpected move....

....that caught everyone outside the company by surprise, Ray Martino retired, as of July 1, as president/chief operating officer of Symbol Technologies.

Symbol reached outside the company to appoint Jan Lindelow to succeed Martino, effective immediately. Lindelow, 48, a Swedish national, joins Symbol after five years at Asea Brown Boveri (a \$30 billion Swiss-based conglomerate) where he was president of its \$2 billion US Industrial & Building Systems segment (Stamford, CT). Martino, who will stay on as vice chairman of Symbol's Board of Directors, will spend the next six months helping Lindelow become acclimated to his new responsibilities.

Martino joined the company as president/COO in November 1983. He had come from Mars Electronics (a division of M&M Mars), the manufacturer of hand-held laser scanners for Symbol before the company developed its own production facilities. At the time Martino took over, Symbol was still in turmoil following the split, two years earlier, between the two founders and major stockholders. Shelley Harrison had been forced out of the company (August 1981) and Jerry Swartz had assumed the role of Chairman/CEO. Swartz was -- and is -- Symbol's chief scientist and visionary; he was not an administrator, and he knew that the company needed a day-to-day, hands-on, operating executive.

The Board's initial selection of a chief operating officer in 1982 did not work out. Martino was then brought aboard to run the company which had annual sales of \$8.7 million. Five years later (1988), revenues broke through the \$100 million mark. Early this year, Symbol had its first \$100 million-plus quarter.

Martino, 56, told SCAN that his retirement had been planned for some time. After his first five years with the company he had considered retirement, but he recalled that his wife vetoed that idea. "She just couldn't see me hanging around the house," he said. So he decided, in 1988, to continue for another five-year hitch.

"When my ten-year goal approached, last year," he continued, "we were still in the middle of our [MSI] consolidation, and we had to get that done and get the company on the right track. Now, business is good, expenses are in line,



0273-3080(199407)17:11;1-B

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markets are doing well and I can spend time with Jan [Lindelov] bringing him on between now and the end of the year."

Martino expects to work full-time during this transition period. Long-term, he will assume the role of vice chairman of the board and undertake special part-time projects for the company. "There are a lot of things I can be doing," he explained. "I will be concentrating on the 'partnerships' that we have found to be so important to our growth. We have learned that we cannot do it all alone and that these strategic relationships -- with both competitors and non-competitors -- are key to our continued expansion."

Martino readily agrees that the defining moments of his career with Symbol were related to the acquisition of MSI Data and the resulting transformation from "a one-product hardware company to an on-line systems business." He called the MSI merger "both my greatest achievement and greatest frustration."

Comment

When a team is performing poorly, the first, and most obvious, response is often: "Fire the manager!" However, when a team is doing well -- leading the league in most departments -- and the manager quits, it prompts speculation about the "real" reasons. In this instance, we do not believe that any negative speculation is warranted. We accept that the change in leadership at Symbol Technologies was prompted by the decision reached by Ray Martino to retire for personal reasons. He has certainly rendered outstanding service to the company.

As for why the company chose to reach beyond its current staff for a replacement, the official announcement of the appointment suggested a great deal. Chairman/CEO Swartz said: "Jan Lindelov brings to Symbol strong operating experience leading a complex multi-industry organization and in building a multinational company." Just as the Board of Directors brought in Martino ten years ago when it needed outside help to manage its anticipated explosive growth, it is now looking to Lindelov to take them to the next plateau.

Almost everyone agreed....

....that this year's ID Expo (Rosemont/Chicago May 17-19) was a successful event. Attendance was up; visitor attitudes were positive; exhibits were large, colorful and expensive; and vendors were happy (SCAN June 94).

But there was an unmistakable undercurrent and nervousness evident among the executives from many of the exhibiting companies, who were asking, in effect: "Will it be worthwhile to come back to this same city in just five months --for SCAN-TECH 94 -- with essentially the same presentations? Will we be seeing the same people while ignoring the rest of the country?"

Both shows changed hands just last year. Advanstar Exposition purchased ID Expo from Expocon; the 1994 show was the first outing under the new management. Reed Exhibition acquired SCAN-TECH from AIM/US a few months prior to the 1993 show in Philadelphia and was directly involved in most of that event's promotion and management.

ID Expo has been held in Rosemont -- near Chicago's O'Hare airport -- since 1990. Expocon had planned to stay in that location indefinitely; Advanstar confirmed that scenario when they took over. Several years ago, AIM/US -- which routinely moved SCAN-TECH around the country to different cities each year -- had selected Chicago's McCormick Place for 1994. Reed has now stated, unequivocally, that it plans to maintain that downtown venue for the coming years. Not surprisingly, Advanstar is not happy with this decision.

We contacted representatives of both management companies to see how they viewed this direct confrontation. "What Reed is doing is a disservice to the industry," charged Bill Windsor, President of Advanstar Exposition. "ID Expo has been in Chicago for five years. As far back as 1991, the show's brochure promoted the dates through 1996 in Chicago. We are the world's leading organizer of exhibitions in the auto ID field including ID Expo, SCAN-TECH Europe and ICAP/UK. The attendees love our event, and we see no reason why we have to look at any place other than Chicago. For them to come in and move into Chicago is not right."

Larry Kovarovic, VP of Reed Exhibition Companies, was equally adamant. "We had done two surveys of the vendors," he told SCAN, "one before and one after the acquisition of the show from AIM. The sentiment was clearly to locate in the heart of the best market they wanted to reach and that is Chicago. Our later research showed that our marketing team delivered good results in Philadelphia last year. Nevertheless, we cannot dismiss the fact that the overwhelming preference [of the exhibitors] was to go to Chicago. We are definitely committed to Chicago for 1995."

Comment

This is a tough one. We now have two commercial organizations that are intent on producing the most successful shows to maximize their profits. If maintaining the Chicago venue will produce the greatest revenue for both of them, then that is where the shows will remain.

Although neither company has blinked, as yet, we detected two small openings that suggest a willingness to resolve this impasse. During his conversation with SCAN, Advanstar's Windsor stated: "I would be happy to sit down with them [Reed]. Nobody has contacted us -- perhaps I should contact them." And Kovarovic's statement that there were "good results in Philadelphia" certainly indicates his awareness that a very large market exists beyond Chicago that simply cannot be ignored.

Hopefully, the two profit-minded organizations can work this out by themselves. We believe, however, that they are going to need a strong push from the vendors. This can happen if the exhibiting companies make their views known individually (and collectively through AIM/US) to both Reed and Advanstar.

AIM should make every effort to remain impartial, even though the trade association continues to participate actively in SCAN-TECH through an ongoing relationship with Reed. The larger issue of what is best for the industry is of paramount importance.

We have maintained over the years that education remains one of the most

important activities to broaden the market base for automatic data capture. Concentrating the two most important trade shows in one city -- even Chicago -- does not fulfill this mission.

Because of the broad range....

....of capabilities and wide differences in design concepts, two-dimensional symbologies are being evaluated in the light of application requirements.

This approach is being supported by the ANSI MH10.8 subcommittee (Unit Loads and Transport Packages) which is now updating its standard to include 2-D symbols (SCAN May 94, June 94). The current draft of this revised standard identifies three of the major "Potential Applications" as: Shipping and Receiving; Sortation and Tracking; Supporting Documents. In an effort to encourage industry-wide standardization, the ANSI group has decided that it will designate a single 2-D symbology for each application. [A fourth major application, Small Component Marking, is not included in the ANSI MH10.8 effort.]

The following is a description of these applications, and our assessment of the 2-D symbologies that are favored in each group:

- **Shipping and Receiving:** This application involves compressing all of the data contained in multi-bar coded shipping labels and documents into one 2-D symbol. Based on results from AIAG's rudimentary tests of 2-D symbologies in March (SCAN May 94), and an informal survey of members of the ANSI committee, PDF 417 seems to be the leading candidate in this group. An important factor supporting this choice is that a number of companies already offer hardware to print and scan PDF 417 labels.
- **Sortation and Tracking:** Although treated as separate applications in the ANSI document, these are generally considered as one. Sortation is defined as "the encodation of that information that is required to route packages and freight between two or more points." Tracking data locates those packages "between shipping and receiving locations."

The "demonstration" (a euphemism the committee insists on using rather than "test") of symbologies for high-speed sortation is currently under way at the University of Pittsburgh under the guidance of the ANSI MH10.8 committee (SCAN June 94). The complex testing procedures include locating the symbol and decoding it on the fly at speeds of up to 500 feet per minute -- while varying the distance of the label from the scanner over a range of thirty-six inches. Only three symbologies have applied for inclusion in this test: MaxiCode (United Parcel Service); PDF 417 (Symbol Technologies); Vericode (Veritec).

Ultimately, we expect MaxiCode -- a matrix symbology with hexagonal dots, which was previously called UPScode (SCAN Dec 90; June 93) -- to prevail for sortation and tracking. It was invented specifically for just this type of use, and UPS is placing its immense resources and broad market penetration behind the system.

- **Supporting Documents:** This application is defined in the ANSI draft standard as: "The encodation of that information associated with the

transportation process not previously identified with shipping, receiving, sortation and tracking, e.g., hazardous material data, customs and other government agency data. The encodation of the supporting documents shall be in the appropriate EDI syntax. The information may also be transmitted by EDI." PDF 417, which has always been featured and promoted by Symbol Tech for this purpose, is probably out front on this one.

- **Small component marking:** When one of the first 2-D symbologies was introduced in 1987 (Code 49 by Intermec), the primary market was thought to be applications in the health care industry, such as unit-dose packaging and patient wrist bands. Many other small component uses have surfaced since then (e.g., electronics, semiconductors, jewelry, cosmetics) and this market is now considered to have important, near-term potential.

For instance, working through the Electronics Industry Association (EIA), the leading semiconductor manufacturers (Intel, Motorola, and Texas Instruments) have been pressing for the selection of a standard symbology -- now. One major stimulus for this group has been the prevention of theft. Intel, in particular, is known to be coping with a security problem with its new Pentium computer chips. These very valuable products -- reportedly worth more than their weight in gold -- are being stolen and resold on the black market. The planned solution is to identify each product with a minute, traceable 2-D symbol with built-in security codes.

In order to push the selection process along, Intel hosted a meeting on June 21 in Santa Clara, CA to review the available 2-D symbology options. Representatives from Motorola and Texas Instruments were invited, and the three major semiconductor manufacturers made presentations explaining their 2-D requirements. Demonstrations had also been scheduled for MatrixCode (by ID Matrix), PDF 417 (by Symbol Tech), Vericode (by Veritec) and Code One (by inventor Ted Williams).

The early reports from this meeting were confusing. The day before the tests were to take place, Intel issued a memorandum which stated that only Code One (preferred by Texas Instruments) and MatrixCode (preferred by Motorola) would be considered for adoption. At the meeting, however, Code One was not demonstrated because no scanners were available to read it; and MatrixCode was not demonstrated because ID Matrix's President, Dennis Priddy, took ill at the last minute and could not attend. (He's OK now.) PDF 417 and Vericode, which were presumably ruled out as final contenders, were permitted to demonstrate and did so successfully.

Prior to this meeting of the semiconductor producers, Priddy had told *SCAN* that his MatrixCode had been in use by Motorola since early 1993 and was considered the front runner in this application. We tend to agree with this assessment, especially since each of the other contenders has problems. Although Vericode seems to work well, Veritec is struggling financially (*SCAN* June 94). Code One scanners are all under development and no production models are available. PDF 417 is probably an also-ran since this application requires the greater density capabilities of the matrix-type codes, and Symbol has never targeted small component marking as one of its primary markets.

Does this rundown suggest that the final decisions have been made in any of these four application areas? Not at all. At its last meeting, the ANSI MH10.8 (2-D Work Group) decided to move more deliberately to establish the test criteria for symbol selection and to allow more time for evaluation of the results. This slower process may push the final ANSI symbology decisions well into 1995. Some committee members have suggested, therefore, that the symbology selections should be "decoupled" from the rest of the document -- so that the other critical material can be released this year.

[The bulk of the MH10.8 2-D standard is devoted to the very important specifications for "the structure, syntax and coding of data when using two-dimensional symbols with unit loads and packages." The decision to select a symbology for each application was almost an afterthought which occurred after the committee had completed much of its work. Decoupling suggests adding the symbology selections at a later date -- possibly as an appendix.]

Two other major players in the 2-D cliff-hanger are waiting in the wings. The US Department of Defense is champing at the bit while waiting to jump into 2-D applications. As soon as the dust settles and clear results emerge from the various tests now under way, expect the DOD to move quickly into this area. As with its adoption of Code 39 in 1982, the DOD's decision on 2-D will have considerable impact on industry.

The other very important 2-D symbology decision will eventually emerge from the retail sector. At meetings of the UCC Board in April and the VICS Board in May, those organizations decided to issue a "joint Request for Proposal on High Capacity Bar Codes [2-D symbologies] which would address a broad range of applications, including industrial and commercial." The RFP was scheduled to be released in mid-June.

We continue to devote a great deal of space in this newsletter to the subject of two-dimensional symbologies because we believe it to be one of the major new market opportunities for automatic data capture. The decisions that will be made during the next 12 months -- both in the US and Europe -- will be critical to the orderly development of this technology.

A Japanese government report....

....completed in February 1993, has prompted the Ministry of Trade and Industry (MITI) to initiate, this year, a Quick Response program for Japan's textile and apparel industry.

The goal of this new QR venture is the promotion of reforms aimed at a "market-in" type of industry structure rather than the current "product-out" type of supply system. As described by last year's report (which was titled "Vision for the Textile and Apparel Industry"): "'Market-in' places the primary emphasis on consumers and is capable of responding sensitively to consumer trends.... 'Product-out'...is forced to shove out quantities of mass-produced products onto the market."

These changes are needed, the study found, because within the Japanese textile and apparel industry "the losses incurred due to unsold items [are]...30% of

products being marketed." A MITI statement added: "This is a problem which cannot be ignored. Improvements in this situation are the most critically important issues for both the manufacturing and distribution industries."

MITI is also planning to achieve a nationwide SKU control system for the apparel industry. The Ministry made public the procedures for EDI standardization used in online transactions and the product code information used by partners in transactions.

During the first half of this year, the groundwork was laid for MITI to form the Japanese version of the Voluntary Interindustry Communications Standards Committee (VICS) that originated in the US in 1986. Initially, Japan's VICS consisted of twenty to thirty "core members." The new organization is scheduled to start work in July, by which time 500 firms are expected to participate.

The group will face three primary challenges: 1. Making the QR system "ubiquitous" through an education program. 2. Adopting the EAN code and EDI standards. 3. Developing a product information database.

In announcing this program, it was significant that the Japanese took note of one of the most important steps which enabled the original VICS program to be so successful in the US. MITI plans to convene a "Top Seminar" of corporate leaders in the textile and apparel industry. This meeting's stated purpose will be to "exchange opinions and to deepen discussions regarding the proper type of QR that is suited to Japan's needs."

Assuming all goes according to plan, the move to standardize and implement QR, EAN and EDI in the Japanese textile and apparel industry will represent a major new market opportunity for all automatic data capture vendors.

While on the subject of Japan, we want to take note of *Scan News Japan*, a new publication from that country. (Although the name has a familiar ring to it, there is no connection between that publication and this newsletter.) Published in English by the Distribution Code Center (Japan's EAN Agency) and Distribution Systems Research, the purpose of the semi-annual journal is to respond to the inquiries received from other countries about "the use of information systems in the distribution industry in Japan."

One of the more interesting items in Issue Number One (Winter/Spring 1994) was a description of the Japanese Article Number Code File Service (JICFS) which acts as a central clearinghouse for product code information. According to JICFS: "Manufacturers and wholesalers register product information, such as product name, size, volume, weight, and suggested retail price. JICFS cleans up this data, converts it to the proper format, and provides it to companies in related industries, primarily retailers and wholesalers." JICFS data is distributed to users by a number of computer system firms and research companies.

JICFS has been operating since March 1988; as of July 15, 1993, the total number of registered products was 1,059,822. To our knowledge, there is no other UCC/EAN agency that maintains such a product file. One of the basic tenets of the UPC system, when it was installed in the US in 1973, was that there was no requirement to add the administrative burden of a centralized product registry. The Japanese, on the other hand, believe that JICFS simplifies data entry, maintenance of databases, and transmission of product code information -- leading to an overall reduction in the cost of office work.

Scan News Japan carried some other noteworthy statistics: As of 1993, there were 374,864 POS scanners in 149,638 stores in Japan, averaging 2.5 scanners per store; JAN manufacturer numbers had been issued to 70,462 companies.

DCC, No. 3 TOC Building, 7-23-1 Nishigotanda, Shinagawa-ku, Tokyo 141, Japan; phone 3 3494-4029; fax 3 3494-4080.

We did not attend....

....the COMDEX show (Atlanta May 23-26) but Dick Rausch of Metrologic (Northeast Sales Manager) was there manning his company's booth.

Rausch made an interesting -- and pertinent -- observation. "There were only about seven exhibitors with automatic data capture products at the show out of over twelve hundred vendors," he told SCAN. "Many of the visitors to our booth were VARS and distributors. It was a revelation to me -- at an exposition of sophisticated computer and communications systems -- to hear the naive questions about bar coding coming from these individuals. I am convinced, even at this late date in the development of the auto ID technologies, that we have just scratched the surface in penetrating the manufacturing sector. Why doesn't the industry -- led by a few of the larger companies -- launch a campaign to educate that market?"

That is a challenge that should be taken up by AIM, the managers of both the SCAN-TECH and ID Expo conventions, and the leading ADC companies.

When the phrase....

...."automatic data capture" first crept into the industry's lexicon in the late 1980s, there was some question as to whether it would replace or live alongside "automatic identification" and "auto ID" as the catchall term for the industry. (We recall that Bill Hakanson, AIM's Executive Director at the time, was one of the first proponents of the automatic data capture term, although he resisted the ADC acronym, for reasons we never fully understood.)

Now AIM has begun publication of *ADC News*. It also announced a new "comprehensive resource guide" -- to be called *A.D.C. Advantage* -- which describes the trade association, its members and their products. (We hope they remove the periods from the title before the publication is printed.)

We were never satisfied with "automatic identification" or "auto ID" which we felt were not very memorable and too restrictive (there are lots of applications which go beyond identification). Although we are not thrilled with ADC, we plan to use it more extensively on these pages when referring to the industry or the technology. We expect that it will gradually take over as the accepted acronym in all publications and company literature.

SCAN NEWSLETTER, LTD. • 11 Middle Neck Road, Great Neck, N.Y. 11021 • Phone: 516/487-6370 • FAX: 516/487-6449
PUBLISHER/EDITOR: George Goldberg • ASSOCIATE EDITOR: Jeff Goldberg • CIRCULATION DIRECTOR: Teddy Allen
INTERNATIONAL EDITOR: Paul Chartier • United Kingdom Office P.O. Box 7 • Cirencester GL7-1HY England
Phone: Int + 44-285-653011 • Fax: Int + 44-285-640401
