



newsletter

Ltd.

The management
Newsletter for all
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with bar-code
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related
technologies.

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We doubt that anyone....

....ever really anticipated the speed with which bar code scanning would take hold in the non-grocery retail industry. We estimate that installations by these retailers (of bar coding hardware, software, supplies and systems) currently lead the industry's non-government sales.

As evidence of this market penetration, UPC and EDI were in almost every booth, last October, at the Retail Information Systems Show in Washington, D.C. At that exhibition, sponsored by the National Retail Merchants Association (NRMA), John Chay, VP Information Systems, told *SCAN*: "This show has exploded because of bar code scanning."

And so it was at NRMA's 78th Annual Convention on January 15-18 in New York -- the organization's major showcase, which occupied every nook and cranny of exhibition space at the Hilton and Sheraton Hotels.

Although there were few real surprises involving automatic identification applications, bar code scanning was present in nearly every booth relating to point-of-sale or backroom automation. Unlike the more-limited supermarket experience of the past 15 years, department stores, mass merchandisers and specialty shops can now choose from a wider range of front-end scanners. They can -- and are -- purchasing wands, hand-held laser guns and slot scanners.

At the moment, the laser guns -- some of which are fixture-mounted to free both hands to grapple with the merchandise and hang tags -- are probably outselling all other types of scanners combined. There are indications, however, that the very aggressive product designs and marketing efforts by the fixed-position, slot-scanner manufacturers may increase their market share in the near future. (See below for a detailed analysis of the available POS equipment.)

Based on individual department needs, many stores may wind up with a mixed scanner environment: the less costly wands, the more flexible guns and the "hands free" side scanners.

[A prime example of this diversity was the much-talked-about Sears' switch. The company moved from a commitment to using only wands in all their stores, to the addition of Symbol Tech's hand-held lasers. Sears won't reveal any details, and has bound Symbol to silence about their contract (announced in December). The most reliable scuttlebutt, however, is that Sears requires -- and is planning to install -- 40,000 scanners to equip all of their checkouts in all stores.



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Before this latest decision to go with Symbol, the retailer had already purchased and installed thousands of wands, only to find that they weren't working up to expectations and that many cashiers were not using them. The apocryphal story making the rounds is that one unnamed top Sears executive witnessed these problems in a number of stores and immediately sent instructions down through the organization to switch to hand-held lasers. Symbol received their order soon after. SCAN has been told that the wands will probably be salvaged for use in less active Sears' checkout areas, while the laser guns will become the cashiers' primary weapons.]

Front-end scanning, however, is not the only opportunity for retail automation. Some examples:

- Hand-held scanners are being integrated into back room systems involving shipping, receiving, inventory management, order control and general data collection.
- Norand is testing a new portable system consisting of an RF terminal/transmitter and a printer, both of which are mounted onto a wagon and wheeled around the store. (Depending on label volume requirements, the customer can choose a printer made by Dennison or by Avalon Design.) Norand's portable computer/transmitter interfaces (real time) with the store's host computer, which provides all of the pertinent data necessary to print (right on the spot) the updated replacement labels -- which include the UPC symbol and all of the price and product identification information.
- A number of companies, including Mars Electronics, Vertex, Ritton Systems, and MSI Data -- some of whom were exhibiting at the NRMA Convention for the first time -- are exploring the retail market with a view toward designing hardware and software packages to provide larger integrated systems.

As we witness the major changes that are occurring in the retail industry, we thought it would be particularly appropriate to recount the story told by William Peebles (Peebles Inc. of South Hill, VA) when he received NRMA's Independent Retailer of the Year Award. When Peebles was a young boy, he relates, he was touring the family store with his father, when they came upon the Shoe Department and saw a man with 9 children who were all being fitted for shoes. When the salesman asked if they also wanted some socks, the customer replied that he not only didn't want the socks, but he didn't want the shoes either. All he wanted was the sizes of his children's feet so that he could order both the shoes and socks directly from the Sears Mail Order Catalog.

A careful look....

....at the of point-of-sale (POS) systems exhibited at the NRMA Show, indicates that many vendors -- with the notable exception of the two industry leaders, IBM and NCR -- are introducing new and redesigned scanning hardware for the department store and mass merchandiser market. (IBM and NCR are concentrating their efforts on the software and integration systems approaches which, they feel, are the areas where the retailers need the most help.)

Particularly evident were the tabletop -- or side scanner -- units which are being strenuously promoted by Spectra Physics, Fujitsu and Datachecker (recently acquired by ICL from National Semiconductor -- see SCAN Jan 90). Datachecker's newest product is their Orion Scanner. According to Senior Product Manager, Ted Koontz, the Orion succeeds the company's SABR (Side Acquisition Barcode Reader), which had been originally designed for the European market. The Orion, about 4" narrower than the SABR, has a larger depth of field (12" vs. 8"). Although the Orion is being heavily promoted for the department store retailers, it is also designed for high volume supermarkets (it can be integrated with a scale for weighing produce) where Datachecker believes side scanners have good possibilities.

The major entry into the retail market from Spectra Physics (Eugene, OR) is their upright Freedom Scanner (SCAN Aug 88) which they recently sold to Clover Stores and Bloomingdale's. Clover, which has been dedicated to UPC systems for two years, will install these scanners in all 21 of their discount stores with Fujitsu registers. Bloomie's, which expects to have all of their 16 stores scanning by the end of 1989, has installed the Spectra units in selected departments, including hosiery, domestics, housewares, shoes and notions. The chain will also employ laser guns in many areas.

Fujitsu Systems of America (FSA) is the San Diego-based, wholly-owned subsidiary of Fujitsu Limited, Japan's largest computer manufacturer. FSA introduced a new model of their SlimScan upright side scanner and has launched a program to develop a group of VARs to augment its direct sales efforts. FSA has also entered into an OEM agreement with Symbol Technologies, whereby Symbol will market the Fujitsu SlimScan 2000 scanner. This model can be configured both horizontally and vertically on the retailers' countertops.

The hand-held laser units remain the largest selling retail scanners. This product group is dominated by Symbol Technologies, which probably controls over 90% of the laser gun market, with Photographic Sciences (PSC), Metrologic and Opticon sharing the balance. Somewhat surprisingly, the hand-helds for the retail market still include all three types of laser light sources:

- The helium-neon (he-ne) lasers, which powered the earliest laser guns, are proven performers and are still specified by some retailers.
- The infrared laser diode scanners (ILDs) are the least expensive laser devices. Although they do not work well where the printed symbols are other than black on white, their low cost, minimum power consumption and long-lasting lasers make them attractive to many buyers.
- The newer visible laser diodes (VLDs) -- lighter in weight and more versatile in performance -- are ultimately expected to take over the retail market for laser guns. As sales and production volumes increase, it is anticipated that VLD scanner prices will come down, and the reliability and longevity of the laser diode components will increase.

Scanning wands were not prominently displayed at the NRMA Show. They will continue to be used in very low volume applications where unit cost is a factor, but their share of market is expected to decline as the laser guns come down in price. (See above for Sears' experience with wands.)

Currently, Symbol's least expensive laser gun is the ILD, which sells for \$895 -- the same price at which Metrologic has pegged their helium-neon and visible laser diode units. Symbol's newest entry into this market is their LS 2000 (the model selected by Sears), a VLD unit that sells for \$1,195. This version

is not as ruggedized as their previous LS 8000 series, which costs \$200 more. Photo Sciences' VLD scanners cost \$1,195 to \$1,495, depending on options. Opticon did not exhibit at the show, but their recent price list reflected a similar range. (All prices are one-off list prices and sizeable discounts are known to be available for volume purchasers.)

The only other type of scanner available for the retail market is the CCD (charge coupled device) unit. CCDs totally dominate the Japanese market and reportedly comprise over 75% of the scanning guns sold in Europe. Other than some isolated sales, CCDs are not a factor in the US, where the non-contact features of laser guns are considered very important.

If 1988 was the year in which POS scanning took hold in the retail sector, 1989 will see sharply increased sales -- as more and more merchandise becomes source marked; as integrated systems become available; and as the word gets out as to the efficiency of this method of retail checkout.

Besides being the largest company....

...in the automatic identification industry, with last year's acquisitions of MSI Data and Vectran, Symbol Technologies also continues to make the most news.

To get some perspective on how the company is doing, in its current "reformative" stage, *Scan* conducted interviews this past month with Symbol's President, Ray Martino and other executives from both the Symbol and MSI sides of the merger. Although everyone is quite pleased and excited about the newly combined operation, the consensus was that it will probably take all of 1989 before everybody is settled in and a clear organizational picture emerges.

Symbol has just switched its fiscal year to a calendar year basis, starting January 1, 1989. For the current year, sales are estimated at \$240 million, with earnings in the \$1.30 to \$1.40 range. Martino agreed, when it was suggested that the company's projected sales for 1989, after the marriage, would probably be about the same as if the two companies had remained single.

Martino acknowledges that there will be some gaps in the available hardware as Symbol expands its systems capabilities and introduces new products. For the present, new product development facilities will remain as separate activities for the Symbol and MSI operations. Martino sees his company offering future systems which will include label generation; integrated communications; and receiving, inventory, shipping and price verification for the back room operations of the retailers.

The first major step, to merge the US and overseas marketing staffs of Symbol and MSI, is currently under way and is expected to take another 6 months or more. Martino is convinced that this marketing merger will produce "strategic benefits," because so much of the their customer base is the same, and the products of the two companies are complementary. Symbol's operation is essentially based on off-the-shelf products; MSI is more systems-oriented and is better able to provide for the customers' software needs.

Symbol is particularly pleased with the Sears contract, under which the retailer will purchase the LS 2000 visible laser diode scanners (see above). Aside from the prestige associated with such a commitment from the country's largest retail chain, this decision represented a midstream switch that

Sears had made from the less expensive wands it had purchased which were not performing as expected. Contrary to what was rumored among some industry pundits, Martino specifically stated that the LS 2000 model that Sears purchased was a "fully-developed Symbol product" and not one that was customized to the giant retailer's specifications.

Martino noted that relations with other vendors and competitors are relatively status quo. Telxon has begun to purchase Symbol's products under their new contract, written just after the MSI acquisition (SCAN Nov 88). The patent infringement suits against Opticon and Metrologic are being pursued aggressively. The Opticon trial date has been set for mid-February or early March; the Metrologic case is still in its preliminary stages.

Symbol Technologies has rapidly metamorphosed from a company with sales of \$14 million (FY 85) to one with revenues of almost a quarter of a billion dollars in its current year. It is now approaching big time, by anyone's standards, and is positively monumental in an industry where no one company was doing over \$20 million just 5 years ago. Hang on for the future!

There is a business philosophy....

...which states that a company doesn't have to be the biggest or the first to be successful. Let others do the expensive product research and invest in opening new markets -- there will always be enough business at the secondary tier for those who can do it as well or better. This maxim has certainly been evident in the computer business, for example, where it has seemed that some IBM clones have been faring better than Big Blue itself, these past few years.

The analogy is not a perfect one, but Photographic Sciences (PSC) is attempting to make this principle work for them. During its checkered history over the past 15 years, PSC (Webster, NY) had been a small, but successful, manufacturer and marketer of precision specialty products, such as form slides and bar code film masters and verifiers. The company did not do as well when it attempted to expand into other product areas and overseas markets where it had little expertise or experience. About a year ago, under pressure from major creditors and investors, there was a major shift in management which resulted in the promotion of Mike Hone to President (SCAN Jan 88).

In a mid-January interview, Hone described a major facet of the tasks he had set for himself. He was committed to get rid of those products and operations that he felt had no place in the company's future growth, and to enhance and promote those that did. Almost immediately, the decision was made to concentrate the company's financial and personnel resources on bar code scanning. (The only exception was the form slides, one of those profitable niche markets that the company has pursued for about 20 years.)

Last month, PSC, a public company traded over-the-counter, sold their Metrology Division (high precision surface measurement devices) to the Division's employees via a leveraged buyout. With that move, plus the pending sale of a telephone cost accounting business, Hone feels that PSC is positioned for the future. The company's current activities include the completion of a \$600,000 private placement, which will provide additional operating cash, and the building of a new 20,000 square foot addition to their existing facilities.

Preliminary estimates for 1988 show PSC reached about \$10.7 million in sales, with operating earnings approaching break-even, or a small loss. (Last year the company lost \$3.8 million on \$8.8 million in sales). The sale of the Metrology and telephone cost accounting divisions will reduce sales by about \$2 million (based on 1988 results), but Hone expects that the remaining operations will bring total revenues for 1989 back to about the \$11 million level -- and, most importantly, on a profitable basis.

PSC now has three major product lines related to bar code scanning: film masters, verifiers and hand-held laser scanners. The first two have proven to be stable and profitable products for the company, and Hone expects them to continue. The laser guns became part of PSC with the acquisition of Optel 2 1/2 years ago (SCAN June 86). This is the product line upon which Hone expects his company to grow and prosper -- without any illusions about challenging Symbol Technologies for supremacy.

[A minor setback in the total sales of PSC's laser guns, for 1989 and beyond, may be the decision by one of PSC's major distributors, Welch-Allyn, to manufacture their own hand-held scanners. Welch-Allyn will start to produce the laser guns, under license from PSC, within the next few months. Neither company would disclose how many units Welch-Allyn sold last year, how many they forecast for next year, or the amount of the royalties to be paid under the license.]

Hone sees PSC as a reliable, viable alternative -- or second source -- to Symbol. At present, his laser guns (both the infrared and visible diode types) are being sold almost exclusively into the non-retail market for warehouse, production, receiving and shipping operations. At the NRMA Business Exposition Show, where PSC was taking its first shot at the retail market, Hone was not sure yet whether his company was positioned to gain a foothold.

The integration of....

....multiple auto ID technologies into a single industry application is being viewed more and more as having important future market potential. We reported, for example, that a US Government "task force" had toured SCAN-TECH 88 in Chicago to explore these possibilities, and that the Future Forum Seminar in Arlington, VA had specifically addressed this topic (SCAN Nov 88).

One company, Checkpoint Systems, has successfully combined bar code printing and scanning with radio frequency (RF) technology for just such an integrated system. Checkpoint, a leading developer and manufacturer of Electronic Article Surveillance (EAS) systems, bases its product lines on the concept of Electronic Signatures. These signatures are unique radio signals or electronic identifiers, which can be recognized electronically at a "checkpoint" by the company's detection systems. Such a complete system, based on passive resonant RF technology, is comprised of a transmitter, receiver and alarm.

[Other companies in the EAS system business -- notably Sensormatic and Knogo -- are based on magnetic tag and sensor technology and not RF.]

The traditional plastic EAS tags are deactivated by manually removing them from the article being protected. This removal is usually done by the retail checkout cashier. Although Checkpoint manufactures a similar line of plastic removable tags -- primarily for the apparel market -- the company holds a

unique position in the EAS market as the largest manufacturer of inexpensive, small, flexible, disposable tags and labels (which can be as small as 1 1/4" x 1 1/2"). These tags and labels incorporate built-in miniature electronic circuitry which performs the RF transmitter function of the system.

When UPC bar codes are printed on tags and labels, the Checkpoint EAS system combines product information with protection. The use of laser scanners, to simultaneously read the bar code and deactivate the tag, is the key feature that integrates the two auto ID technologies -- bar code scanning and RF -- and enables the checkout procedure to become a one-step process.

Checkpoint has entered into three special strategic business arrangements, with what it calls its "Checklink Partners," to provide the auto ID portions of the EAS system: Soabar Products Group, Symbol Technologies and Spectra Physics. The partnerships work like this:

- Using equipment developed by Soabar, tags and labels containing Checkpoint EAS circuits are imprinted with bar code information. Soabar has worked with Checkpoint to help make the tags and labels compatible with its printers. Through this agreement, Checkpoint and Soabar will jointly market custom EAS tags and labels.
- The successful operation of any EAS system depends on the deactivation of the tag, at the time of sale, so that it does not set off the alarm. Up to now, tags had to be physically removed from the item, or deactivated in a separate step performed by the packer/cashier. Working with Symbol Technologies and Spectra Physics, Checkpoint has developed point-of-sale scanners which deactivate their RF tags in one step as the bar codes are read by either Symbol's hand-held or Spectra's fixed-position laser scanners.

Comment

A few years ago, there was much industry speculation about competing auto ID technologies, and how the battle for market share would develop among them. We believe that this competition may have largely disappeared, or actually never really existed. Each auto ID method -- bar code, OCR, RF, VR, mag stripe -- seems to be naturally carving out its own market niche. The Checkpoint experience further suggests that many applications and markets may lend themselves to cooperating and complementary efforts among two or more such auto ID processes.

Checkpoint Systems, 550 Grove Road, Box 188, Thorofare, NJ 08086; 609/848-1800.

Since she relinquished....

....her job as Publisher of ID Systems Magazine (Helmets Publishing Company), Laura Hanson has been quite busy as Product Development Director.

- One of her first projects was to team up ID Systems with David Collins (Data Capture Institute), to arrange 6 one-day bar code seminars that will be touring the country through early April. Equipment will be available for hands-on demonstrations and there will be three break-out sessions. Topics include the basics of symbologies, printing and scanning, and then proceed to application studies in manufacturing,

retail, health care, service and security. The first seminar (Hartford on January 18) attracted about 40 attendees. Future sessions are scheduled for Cherry Hill, NJ (March 1); Atlanta, GA (March 2); Palo Alto, CA (March 22); Chicago, IL (April 4); and Detroit, MI (April 5).

- o On a much broader scale, ID Systems announced "The Bar Code Market -- the International Conference for Bar Code Technology Marketers," (March 8-9, 1989 at the Hyatt/Orlando Florida). This program will include overviews of the US, European and Japanese bar code markets; comprehensive assessments of the major industry segments using bar codes; and insights into the emerging markets.

Helmets Publishing, Box 874, Peterborough, NH 03458-0874; 603/924-9631.

The alumni association....

....of Computer Identics has just recruited a new member. Charles (Chuck) Mara, who was with C/I for 16 years, has left the company to join Atech Systems, Inc. (formerly known as Swedot), a division of Atech AB of Sweden. Mara joins Ed Andersson, President of Atech/US -- headquartered in Irvine, CA -- who, not incidentally, was VP Communications for C/I until a few years ago. Mara will be based in the company's new Waltham, MA offices. As VP Sales, he will be concentrating on the development of a distribution network to service those industries from which the company is looking for new markets.

[The training and experience at Computer Identics must be quite good, considering the track record achieved by recent alumni. In addition to Mara and Andersson: ● David Collins, ex-President/CEO, left to form Data Capture Institute (SCAN Nov 87). ● John Hill, ex-VP/Marketing, is now a VP at Tompkins Associates (SCAN Nov 88). ● Ted Williams, Frank Goodfinger and Rick Connole took the Computer Identics Systems Division and went off on their own as Laserlight Systems (SCAN July 88). ● Ed Sullivan, Scott Arnold and Don Way traded their marketing positions at C/I to form their own distributor organization, Concord Technologies (SCAN Jan 87).]

Chuck Mara has not only gained respect for the excellent papers he has delivered at the SCAN-TECH and other industry forums -- but also because he's one of the most knowledgeable and nicest guys in the bar code scanning business. We wish him every good fortune.

Atech Systems, 2 University Office Park, 51 Sawyer Road, Waltham, MA 02154; 617/893-8200.

We wouldn't want anyone....

....to miss the first-ever Quick Response 89 Seminar and Show just because we posted the wrong date in our January, 1989 issue. Quick Response will be held in Dallas on March 21-22. Expectations have increased rapidly, as interest in this show has grown, and the sponsors are now anticipating over 650 to register for the seminars and to visit the 65 exhibitor booths.
AIM, 1326 Freeport Road, Pittsburgh, PA 15238; 412/963-8588.

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: 44-285-3011 • Telex: 437269 SHARET G • FAX: 44-285-68859