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A major exhibition....

....such as the annual SCAN-TECH show, has varying impacts on those who attend, based on their underlying interests.

SCAN-TECH 91, sponsored by AIM and held at the Dallas Convention Center on November 4-6, elicited favorable comments from almost every exhibitor and visitor we spoke with. Basically, it was viewed as fulfilling their basic objectives:

- For the underlined users, who are the major focus and the only valid reason to expend this enormous effort, it presents new information that they can take back to their companies to better understand the technology, the products (especially new ones), and the companies that produce them.

- For the exhibitors, this is their best opportunity to check out the competition, see what the job market has to offer and, of course, to open up as many new customer contacts as possible.

- For the editors of a newsletter, the event offers all of the above opportunities while also providing a perspective on how fast the industry is moving and in what direction.

There is never enough time, in a three-day show, to visit all the exhibits, meet all of the people who have something significant to say, digest all of the product information and be able to form a completely coherent picture for our readers.

[This year, there were 296 exhibitors occupying 80,000 square feet, a show record. Total attendance at SCAN-TECH 91 was 11,000 vendor personnel and visitors -- slightly below last year, but considered good in light of the recession and the non-central geographic location; seminar attendance was 1,400, a record SCAN-TECH enrollment.]

As is our custom, we will leave the task of detailing all of these exhibits and products to the excellent magazines which serve this industry -- particularly *ID Systems* and *Automatic ID News*. We will concentrate, instead, on the major events and significant minutiae which we believe will shape the technology and the industry during the coming years. We will begin our report in this issue and continue with additional stories next month and beyond.

The question most often asked....

....when we return from a major industry event, such as SCAN-TECH, is: "What new products were offered?"

There were, of course, many new products that were introduced in Dallas this year, but the bulk of them were upgraded version of old models. These offerings are a little faster, smaller or cheaper, but they are not noteworthy breakthroughs or precursors of products of the future.

There are always some innovations that do bear watching, however. Sometimes these products are introduced with great fanfare; other times there are tentative advance showings -- by invitation only -- in hospitality suites.

Here are some that we noted:

- Intermec's new "Area Scanner" drew a great deal of attention. Developed for the US Postal Service for automated sortation and tracking of third-class mail ("flats"), area scanning is described by Intermec as "a new high-speed scanning technology that reads coded symbols by combining machine vision (not lasers) with advanced image processing computers."

  The new technology, based on specialized high-speed camera and image processing computer technology, allows users to read conventional linear or stacked bar codes and other matrix symbols at up to 500 feet per minute, regardless of their position or orientation. It is particularly well-suited to reading the Postnet symbol, with its tall and short bar code configuration. [Intermec has contracted to sell 2,000 of its Model 7105 area scanners to Martin Marietta, for use by the USPS, at a total cost of $24 million, with shipments scheduled over the next two-years.]

  Another key feature of Intermec's Area Scanner is its ability to read bar codes with aspect ratios (height of bar to length of symbol) of only 5%. These smaller sizes can result in significant savings in the cost of labels. The major weakness of the system is its very limited depth of focus, which is approximately one inch. This makes it appropriate for scanning flats, but not suitable for packages of various heights.

  Intermec's Model 7110, for industrial/commercial application, lists for $21,000. Initial shipments are expected early next year. Intermec has filed for patents and expects them to be issued in about a year.

- There were two new bar code verifiers which merit attention. Photographic Sciences quietly introduced (in their hotel suite) the Quick Check 200, the first single-unit, hand-held, full function verification device. The compact (7.2" x 1.8" x 1.2") lightweight (5.5 oz.) unit will be priced at $1,295. All of the functions are handled through a two-button control panel, which steps the user through all of the menu and command codes -- although it takes a little practice to sort out the procedures.

  The RJS entry is the only verifier, other than Symbol Technologies' Laserchek, using a laser gun as the light source. Priced at $2,495, the RJS device offers all of the point-and-shoot advantages of laser scanning, but does not include detailed printouts of bar/space dimensions or print contrast analyses.

- <u>Imtec</u> demonstrated its new label printer/applicator -- initially priced at $35,000 -- to automatically handle packages with heights that vary as much as 36 inches. Each package moves past a sensing device which registers the height of a carton to within .1 inches. The label applicator is mounted on the end of a vertical plunger which lowers into position to apply each label.

  The unit was developed for and funded by a major package delivery company. [President Jim Williams of Imtec would neither confirm nor deny our information that the unidentified company is United Parcel Service, which may be buying multiple units.] This label/applicator is of particular interest because its method of operation is based on bringing the label to the package, rather than the controversial US Postal Service design to lock the label applicator in place and raise and lower the package into position as needed (*SCAN* April 91).

- The successful performance of the "presentation" type of scanners in the retail area prompted <u>NCR</u> to take a booth at SCAN-TECH to test the waters of the industrial market. The designation "presentation" refers to the method in which the item is moved -- or presented -- toward the scanning window, rather than being slid past it. These tabletop scanners produce an aggressive, omni-directional scan pattern that will read the bar codes as they are placed in the live scanning area.

  James Baird, NCR's Senior Product Manager, sees applications in shop floor assembly areas where the hands-free feature allows the operator to track parts or full assemblies. The uniquely designed device is priced at approximately $1,200 and is small and lightweight, with a built-in handle so that the entire unit can be picked up and used as a hand-held scanner. NCR is looking for resellers.

And, among the "Do we really need another...?" group of products, we noted the following:

- <u>Control</u> <u>Module</u> showed a "near-invisible" bar code. It was created by using white ribbon stock in a thermal transfer printer to lay down white bars on white paper. The white-on-white bar code that emerges will provide bars and background with different specular reflectance which can be read with special scanners.

- Ted Williams of <u>Laserlight</u> <u>Systems</u> introduced his new Code 1 two-dimensional code. Code 1 is a matrix code -- as opposed to a bar code -- which is based on the absence or presence of a black "bit" at each address location on the matrix. Decoding requires a camera or other two-dimensional imaging device. There are other matrix codes that have been around for years, but the difference, according to Williams, is the ease with which Code 1 can be encoded and decoded.

- There were at least two new wands that were tentatively introduced. We learned, by chance, about the <u>Digital</u> <u>Equipment</u> pen scanner during a shared taxi ride in Dallas (DEC was not an exhibitor). DEC has designed their wand, with integrated decoder, to be compatible only with the DEC computers -- estimating that the installed base of their computer systems is large enough to support the product.

The other pen scanner -- to be manufactured in the UK -- is still partially under wraps, but is expected to come to market by year-end. This UK product has its decoder in a separate box and includes a replaceable screw-off ruby tip, which reduces maintenance costs.

Neither the DEC or British wands pretend to break new ground. We have included them in this product review because we find it interesting that there is perceived to be a large and ongoing market for pen scanners. They are fairly simple devices to design and build, and a modest market share can bring profitable results.

In sum, not a particularly banner year for new and exciting products. The concentration was more on new markets and channels of distribution which continue to offer significant opportunities for growth.

Among the notable quotes....

....we heard on the convention floor in Dallas, was the one made by Frank Goodfinger, Control Module's new Vice President of Industrial Sales, who said: "This is a resellers' show!"

He was referring to the fact that almost every manufacturer selling hardware, software or systems to the industrial market -- the primary focus of the SCAN-TECH shows -- is moving their products through resellers. Often, these resellers -- who were evident throughout the show in large numbers, both among the exhibitors and visitors -- call themselves dealers, distributors, VARs, system integrators or even OEMs. Some simply pass the product through to the end-users; most add some customized features which the customer requires.

Even Intermec, which prides itself on having built the largest industrial sales force in the industry -- having acquired all of the independent dealers that distributed its product -- now has 500 VARs selling its products to the end-users, President John Paxton told *SCAN*.

Spectra-Physics' President John O'Brien explains that his company has also been establishing a reseller network for the industrial market, even though it sells the majority of its retail products directly through its own sales force. "Most of the large retailers," O'Brien notes, "have their own systems staffs and can unbundle their procurements, buying components and putting them together to complete an operating system. For the industrial market, the VARs are best equipped to work with the end-users and add the customized software and features that are required."

These factors have given rise to a very large network of companies that stand between the auto ID manufacturers and the industrial end-users. Many provide the special system programming that is needed; most provide the personalized education and hand-holding that are required. There is every indication that this phenomenon will continue to grow. It places the vendor/manufacturers at least one step removed from their ultimate customers, but it provides a layer of service that few users can do without.

One additional related item: AIM instituted its experimental Regional Systems Expo in a test run in Minneapolis last June and over 1,000 people attended. The event was deemed a reasonable, first-try success and it may be expanded to many locations across the country (subject to AIM review and approval).
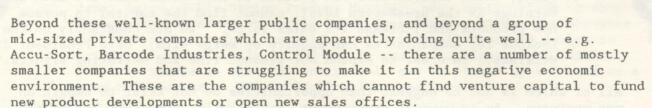
Although AIM sponsored the event, it was put together and managed by the local resellers in order to provide the bridge between the equipment and software manufacturers and industrial end-users.

To the surprise of absolutely no one....

....the struggling economy was a key topic of conversation on the exhibit floor, in the seminar lecture halls and at the evening hospitality suites.

The important point to note in this regard, however, is that the overall mood at SCAN-TECH 91 was definitely upbeat and not reflective of the generally poor condition of business throughout the world.

The first tier of companies -- the larger firms whose product lines are devoted solely to auto ID -- are all reporting positive results for 1991 and good prospects for next year. This group includes Symbol Technologies (whose sales are expected to be up 34% in 1991, climbing to $310 million); Intermec (whose president, John Paxton, indicated that his company is continuing to move ahead smartly at a 12 to 15% rate since being acquired by Litton); Telxon (which is expecting, according to President Ray Meyo, to reach $218 to $231 million in fiscal '92 [3/31/92], an 18 to 25% increase, and is targeting $1 billion in annual sales by the end of this century); and Zebra, the industry's newest public company (which is anticipating a sales jump from $47 million this year to $60 million in 1992).

Beyond these well-known larger public companies, and beyond a group of mid-sized private companies which are apparently doing quite well -- e.g. Accu-Sort, Barcode Industries, Control Module -- there are a number of mostly smaller companies that are struggling to make it in this negative economic environment. These are the companies which cannot find venture capital to fund new product developments or open new sales offices.

In order to meet these challenges of undercapitalization, many firms are increasingly turning to mergers, acquisitions, strategic alliances and exclusive reseller agreements. Here are just a few examples:

- Immediately prior to the show, Symbol Tech announced that they had acquired True Data (Santa Ana, CA), a manufacturer of intelligent data collection terminals with proprietary software for industrial/manufacturing applications. This takeover was a clear signal that Symbol will be addressing more of its efforts to the industrial market. Symbol's President Ray Martino told *SCAN*: "True Data was having financial difficulties, but had good products and the talent to understand how to network for industrial applications."

- BRT (Fountainville, PA), a small manufacturer (under $2 million annual sales) of high-performance, large scanning systems, entered into an exclusive distribution agreement with Intermec. BRT's President Benny Tafoya and VP Ed Andersson related their plight to *SCAN* during an interview at the convention. "BRT was very short of capital," Tafoya explained. "We could not raise any additional money and needed such an arrangement with Intermec to survive."

- Another example of a small, one-product company that was not making it in the marketplace was <u>Micro Video</u> (Campbell, CA). In mid-October, Micro Video was bought by Datalogic SpA (Bologna, Italy) and was merged with its US subsidiary, Datalogic, Inc. (Scotts Valley, CA). Micro Video designed and built the Omniscan, one of the first small, top-of-the-counter, point-of-sale scanners, which it introduced in 1989 (*SCAN* March 89, Feb 91). A major equity position in the company was held by Sensormatic (electronics surveillance systems) and the Omniscan was marketed by POSdata, a subsidiary of Sensormatic. (POSdata is expected to continue this arrangement.)

- Telxon, whose management still sees its primary efforts continuing in the retail market, entered into an agreement with <u>Computer Identics</u>. C/I will integrate Telxon's portable microcomputers into its systems for material handling and manufacturing applications. Telxon will thus test the receptivity of its products in this industry segment without making any investment in sales or marketing. C/I will obtain a proven group of products without undertaking expensive product development.

  In a separate deal, Telxon signed a strategic alliance with <u>AW Computer Systems</u> (Mount Laurel, NJ), a supplier of POS hardware and software systems, which gives Telxon exclusive marketing rights to AW's new data communications systems.

- <u>Imtec</u>, which expects year-end results to show sales that are down and earnings at the break-even level, cannot find the capital to pursue new products and increase its sales force. "We are constantly on the lookout for companies we can acquire or merge with," says President Jim Williams, "in order to expand our product line and marketing efforts."

All of which is not to suggest that opportunities do not exist to embark on new ventures. In an unusual arrangement, for example, Accu-Sort has helped organize a separate company, Accu-Time Systems (Ellington, CT) to focus on time-and-attendance applications. ATS will sell Accu-Sort equipment but will operate as an independent company to meet the requirements of the labor reporting market. Peter Di Maria, who was involved in this application area during his stint as Marketing Manager with Control Module, will serve as ATS' General Manager and VP Sales. According to Di Maria: "ATS was funded by two silent investors; Accu-Sort has no equity interest in the company, although we are closely tied in to their products."

COMMENT

What do we conclude from this small sampling of the auto ID companies? First, that the overall industry is displaying a healthy vitality. Although, admittedly, the major purchasers of auto ID equipment during recent years have been retailers, government agencies, transportation companies and, notably, the US Postal Service, the giant industrial market is now finally showing signs of awakening. The market that we have characterized as a mile wide and about an inch deep is responding more actively to the enormous benefits of automatic data capture.

But large contracts and overall statistics tend to obscure the drama taking place within the smaller companies. Their sales and profits are often too modest to fund expansion or new product development -- and new investment capital is not available these days to fill the gap.

> *Happily, strategic alliances and acquisitions help to preserve the talent and innovation that these small entrepreneurs provide. It is easy to fall back on the cliche that those who do not survive the corporate shake-outs that accompany each recession were not destined to succeed in any case. On the contrary, the industry needs to retain the energy and drive that typically seem to get lost in the larger company bureaucracies. It is important that the True Datas and Imtecs and BRTs and Accu-Times make it through these difficult times.*

We were taken by surprise....

....last month, when we learned, just before press time, that <u>Accu-Sort</u> had been awarded the complete $39 million contract by the <u>US</u> <u>Postal</u> <u>Service</u> for its Package Bar Code Sorter (PBCS) program.

As prime contractor, Accu-Sort will install the complete system in 21 Bulk Mail Centers (BMC) across the country. The PBCS system will automatically read pre-printed zip code labels on parcels, and will print and apply zip code labels to unlabeled parcels as they are processed at the BMCs.

We spoke with Accu-Sort's President, Al Wurz, on the floor of the SCAN-TECH 91 exhibit hall in Dallas, and asked why he had switched tactics in his efforts to win the contract. Up until last April, Wurz didn't really care who won the award since Accu-Sort's unit was the scanner of choice by the USPS engineers and Wurz had supposedly locked up subcontract deals with all the prime bidders, including ElectroCom, Martin Marietta and Westinghouse.

Circumstances changed last March, however, just prior to the closing date for the first bid solicitation, when LazerData filed a complaint which stated that specifying Accu-Sort's equipment was a "procurement violation by the USPS which inhibited competitive bids" (*SCAN* April 91). The USPS backed down, amended the Request for Procurement, and allowed "brand name or equal products" in the bid.

Meanwhile, BRT, the third scanner company which had participated in the early trials with the USPS, but which had chosen not to offer its equipment on the first contract go-around, emerged once more as an active player. According to Wurz, BRT teamed up with Westinghouse, which then planned to submit its new bid based on BRT equipment.

Wurz explained: "At this point, even though we still had a deal with ElectroCom and Martin Marietta, we weren't about to let the contract slip away from us after all the development work we had invested. So, we decided to bid for the 'whole ball of wax' on our own."

> [Wurz had an extra incentive because Benny Tafoya, founder and owner of BRT, is a former employee of Accu-Sort who had left to set up his own company to compete directly with Accu-Sort.]

Wurz' strategy paid off when Accu-Sort won the entire USPS award last month. Accu-Sort will contract with ElectroCom to build the label printer/applicators. In effect, the companies have switched roles: ElectroCom will now become a subcontractor to Accu-Sort.

Wurz expects that the contract will be a profitable one and will advantageously position his company to win future orders for similar high-speed scanners from the Post Office and other commercial businesses.

And finally....

...."The History of Automatic Identification" was graphically portrayed, at SCAN-TECH 91, in an 11" x 34" fold-out piece prepared by *ID Systems Magazine* in celebration of its tenth anniversary. The poster traces the industry's major events from 1949 to date, highlighting the turning points in bar coding, RF, OCR and voice recognition.

You'll find fascinating illustrations of "firsts" in equipment, symbologies, technology and applications. There is the longest bar code (on the Palomar Observatory), the smallest (on bees), the widest (on a sailboat), and the densest (on 2-D symbologies).

The material is not organized in a straight-line, so tracking events can be a challenge -- but the experience will undoubtedly be a pleasurable one to anyone who is part of the auto ID industry.

If you weren't able to pick up your copy at SCAN-TECH, write or call ID Systems, 174 Concord Street, Peterborough, NH 03458; 603/924-9631.

In the coming months....

....we will continue our coverage of the events and subsequent fallout of both the SCAN-TECH 91 convention in Dallas and SCAN-TECH/Europe held in Dusseldorf in mid-October.

Here is a sampling of some of the special articles to come:

- **Printing technology**. Thermal transfer came on the scene about five years ago and has become the dominant method of printing bar codes. What will the next generation of printers look like? Will thermal transfer be replaced? Who will be the key players?

- **Industry education**. We will take a look at some very important educational initiatives that will involve joint efforts between industry and certain universities.

- **Spread Spectrum RF**. What are the new developments in spread spectrum requirements that may affect the equipment on the market? Will the new systems make the existing ones obsolete?

- **Research studies**. We will examine the results of the symbology study completed by Ohio University and the updated Clarendon European market research study.

Stay with us.

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