



newsletter

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The management
Newsletter for all
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with bar-code
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technologies.

SCANNING, CODING & AUTOMATION NEWSLETTER • 11 Middle Neck Road • Great Neck, N.Y. 11021 • (516) 487-6370

Volume XIV Number 7

March 1991

Some additional notes....

....about the auto ID-related products and services that were exhibited at the National Retail Industry Convention in January (SCAN Feb 91):

- Many of the higher-performance, more cost-effective bar code printers that were so evident at SCAN-TECH 90 are also being offered for the retail market. Units which represent the wide price/performance range include Monarch Marking's thermal transfer printer, running 4" wide stock at a throughput of up to 8" per second at \$3,000; and Avery Dennison's very flexible, programmable laser printer, with a 4" per second print speed on 15" wide label stock, priced at \$50,000.
- Although a relative Johnnie-come-lately to the 80-year-old retail convention, Symbol Technologies occupied the largest exhibit area of anyone at the show. The company's featured offering this year was the "Wireless Store," which Symbol anticipates will become a major product in its future sales to retailers. This concept incorporates point-of-sale scanner-registers and portable terminals into a total system that includes the Spread Spectrum communications network. Although management expects a major chain to field test the system during the first quarter of this year -- with some additional installations to follow, if all goes well -- it will be at least a year or more before significant shipments are made.

All in all, except for the countertop scanners described last month, not a particularly exciting or notable list of new offerings for the retail trade. However, it would be difficult to visualize any retailer opening a new store, or upgrading an old one, who did not include UPC scanning as part of the plan.

As for the most visible group of scanner-related products -- the POS countertop units we reviewed last month -- there would appear to be too many models and configurations for sale, and too much production capacity available, for the current market. We anticipate a shakeout over the next couple of years.

This apparent overabundance is the reason why the aggressive, successful distributors and VARs are being actively solicited by the manufacturers to carry and move more of their products. As one very knowledgeable industry-watcher told SCAN: "Those distributors who can bring incremental business to the manufacturer -- by adding new markets not covered by the manufacturer or by adding value in the form of optical/mechanical/electronic



ISSN 0273-3080

INCLUDING THE INTERNATIONAL EDITION

enhancements -- are very much in demand." The inevitable flip side of that situation is that prices are soft and attractive deals are being made to volume users, resulting in shorter margins for the manufacturers.

The following stories on Control Module and Anderson Consulting also had their origins at the National Retail Industry Convention, but they cover a much wider spectrum of applications. We continue to maintain the position that it is a mistake for any auto ID company to restrict its marketing efforts solely to retail or industrial. Systems which are designed for one market are readily adaptable for use in the other -- as these articles will illustrate.

The steady and successful growth....

....of Control Module has been marked, over the years, by innovative product development and the ability to search out unique niche markets. This privately-held company, headquartered in Connecticut, has been engaged in the design, manufacture and system integration of microprocessor-based bar code equipment. Applications include shop-floor data collection, work-in-process, inventory control, employee scheduling, and control access security systems.

[We have been impressed with the accomplishments of Jim Bianco, the company's founder/owner/president, since our first visit with him, almost 14 years ago, at his then newly acquired facilities (SCAN Nov 77). Bianco had purchased -- for \$100,0000 -- a surplus, 75-year-old, 3-story brick elementary schoolhouse from the town of Enfield, CT, and had converted it into a complex of offices, labs and manufacturing facilities. As his company expanded in the early 80s, he purchased another such school. Last year, the company consolidated its operations and moved into its own 44,000 square foot spanking new building.]

In January, we caught up with Jimmy Bianco -- son of the founder, and currently the company's Sales Manager -- at the National Retail Industry Convention in New York where Control Module was making its first-ever appearance. We questioned Bianco about the products he had to offer to the retail trade. "We have become involved in supplying slot-readers for retail backroom operations," he replied, "particularly for time-and-attendance and employee scheduling.

Control Module, which works with a few software companies that have specific application packages for employee systems, has completed installations at JC Penney, Safeway Stores, The Gap, A&P, May Company and others. "We expect to expand that market," Bianco predicts, "and we will do as much as \$8-\$10 million in sales for that application alone in 1991. We were just awarded an 800-store contract for Friendlys, which expects to save many thousands of dollars each month on employee scheduling efficiency improvements."

Control Module recently closed an \$8 million contract with Roadway Package Service (RPS), the large trucking company. This project is designed to speed up and improve the loading and stripping of trucks at the RPS loading docks. There are about 200 bar code terminals at each site, with one battery-operated unit serving two loading docks. These scanning terminals are customized to accommodate Roadway's system requirements and physical constraints.

But the Control Module achievement we like the best was the recent \$8 million award from the government of Mexico. This unique system is designed to control the distribution of the daily tortilla allotment to welfare recipients.

Currently, poor people in Mexico are issued coupons which are redeemable at local bakeries for one tortilla per day. The bakers, in turn, take the coupons to their local banks, where they are converted to cash. Unfortunately, these coupons have become a form of underground currency which can be traded -- at a sharp discount -- for other commodities, particularly drugs.

The new method, based on a system designed by Control Module and its Mexican VAR, is based on the issuance of bar-coded identification cards to all individuals on welfare. Each baker is equipped with a bar code slot-reader that is battery-operated (many of the bakeries do not have electricity). When showing up for an allotment of tortillas, the ID card is scanned and recorded to be certain that not more than 7 tortillas per week have been given out.

The reader/terminal is taken periodically to the bank. According to Bianco, "the information is then sucked out and the baker is paid for the tortillas he has distributed." [An alternate method is for a bank official to visit each bakery, download the information into a portable terminal, and leave a receipt for money owed.]

The initial plan in Mexico calls for the installation of 16,000 bar code terminals and the issuance of 4.2 million cards (also supplied by Control Module). The company is currently shipping terminals at the rate of 1,000 per week. And that's just the beginning. The next two programs will be for the automatic distribution control of dairy and meat products. (Bianco expects 4,000 additional slot readers to be needed for each of those commodities.)

One of the key features of the identification cards used in Mexico -- and also used for the commercial employee time-and-attendance systems -- is Secur-Code II, a coding method developed and patented by Control Module. Each ID card is encoded with a standard Code 39 identification number, a customer-selected password and the Secur-Code II -- which is derived from both. Control Module's literature describes the coding system this way:

"The Secur-Code II is a unique bar code symbol which is printed as a trailer to the bar code symbol it is to protect. The Secur-Code II is printed outside the quiet zone of the standard label; therefore the standard label may be read normally by existing readers. Bar code readers equipped with the Secur-Code II decoding capabilities will read both the standard symbol and Secur-Code II as one label. After the security decoder reads the entire symbol, it combines the data from the standard label, with its programmed security code, and tests the results to see if it matches the Secur-Code II data."

Although Control Module is a private company and doesn't release sales and earnings, Jimmy Bianco did indicate that 1990 sales were "in the \$20 million range and we expect to be up around \$40-\$50 million in a couple of years."

A few years ago, we placed Control Module among a group of smaller, privately-held companies in the auto ID industry which faced the daunting task of "breaking out of the annual sales range of \$10-\$25 million." Control Module seems to be on the verge of making that significant transition.

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It is often a long and difficult journey...

...from "great concept" to "successful implementation" -- even for innovative ideas which receive wide acceptance. Take Quick Response, for example.

Quick Response News (the Washington, DC-based biweekly newsletter that covers developments in Quick Response technology) defines QR as "trading partners linked through EDI." That simple definition hides a major upheaval in those industries which are moving into QR systems. [In some areas, QR goes under other names, including Just-In-Time, Kanban and Materials Management. The underlying principles and goals are the same.]

Glen DuBois, of Levi Strauss (one of the early QR pioneers) made the following comment in the October 2, 1989 issue of *Quick Response News*: "Because QR results in drastic changes in corporate culture, it demands more than simple approval from senior management...We are only now beginning to see full recognition of the breadth of impact and change that occurs in a company when they implement Quick Response."

DuBois went on to describe the four strategic areas that require these significant changes when implementing QR: "Business processes, information systems, organizational structure and human resources."

Of particular interest to our readers, who are involved in the auto ID aspects of Quick Response, the key elements that form the foundation for QR implementation are: EDI, UPC bar coding and shipping container marking. Obviously, the greater the penetration by QR, the wider the use of scanning by both the retail and manufacturing partners.

Anderson Consulting (a division of Arthur Anderson & Co.) has been involved in QR from its earliest days. Along with Kurt Salmon Associates, Anderson conducted the seminal studies of the cost-benefits of QR as they apply to the retailers. Last year, Anderson and Symbol Technologies entered into a strategic partnership to offer clients what they refer to as a "full range of Quick Response services." This initiative was designed to combine Symbol's products with Anderson's consulting and system integration capabilities.

We spoke with Larry Beckerman (whose title is "Manager") at Anderson's New York office, to determine the depth and speed of QR's penetration into the retail trade. Beckerman described Quick Response Assessment, a basic entry-level program offered by his company. QRA is an analysis undertaken by Anderson specialists to evaluate their clients' operations and to present their findings as to how QR works, what it will cost and how to get started. Depending on the size of the company, this service can take from a few weeks to a few months to complete (and the fee is determined accordingly).

Anderson has conducted more than 35 of these studies within the past 12 months. According to Beckerman: "Many companies are either moving -- or being pushed -- in the direction of QR, but there are still a lot of players that do not fully understand how to get there."

In explaining why implementation seems to be slower than expected, Beckerman describes obstacles similar to those mentioned by DuBois. "There isn't a good understanding of the problems," he noted, "particularly the organizational changes necessary for a company to implement Quick Response. This is especially true in the retail world. To say to a buyer that your job description is now

going to be changed from what you have been doing for the past 20 years -- that has a major impact."

Even though a number of major retailers have set up pilot programs, Beckerman says that "no one -- not even Wal-Mart, one of the major proponents of QR -- has committed to a full-blown rollout of the system."

A key indicator of how rapidly the QR programs are being implemented is the growth of the so-called UPC catalogs.

[These catalogs are the on-line listings of all UPC numbers. These listings are maintained by independent service companies as a central database to be accessed by the retailers as needed. The concept allows the subscribing vendors to update all subscribing retailers with just one data transmission to the catalog company. In turn, the retail subscribers can eliminate the costly chore of having to maintain their own UPC database. There are two companies offering their services as keepers of the UPC catalog: Quick Response Services (Greenbrae, CA) and GE Information Services (Rockville, MD).]

We were surprised to find that QRS (which is essentially a marketing organization for the database created and managed by IBM) was not an exhibitor at the National Retail Industry Convention in January, since that event would seem to be a major showcase for its services. GE was there, however. During a visit to their booth, we were told that, even after several years of operation, they now have only 80 subscribers: 10 retailers and 70 vendors. [We understand that QRS has a similar number of subscribers -- and that there may even be duplication between GE and QRS.] If the number of catalog subscribers can be viewed as a sign of the degree of success of QR, then these enrollments do not seem to be very strong.

According to Beckerman of Anderson Consulting, his company has no direct involvement with these catalogs, but he feels that they are critical to the implementation of Quick Response. "You cannot manage each store's hundreds of thousands of line items -- even millions in a large department store," he maintains, "without such a catalog." He attributes the fact that there are so few subscribers, in part, to the high initial cost in establishing the start-up files. "It's not something you can do overnight," he continues. "The catalog must be in place, and as more people move to Quick Response there will be a growth in the catalog business, without a doubt."

Currently, Anderson only undertakes consulting assignments as part of their QR partnership with Symbol, which, in turn, sells the hardware. SCAN has learned, however, that Anderson and Symbol are presently "in some negotiations" to see if they can arrange for Anderson to become a VAR for Symbol's products.

Once again, we rise....

....to criticize the ill-conceived, inaccurate, inconsistent, and illusory statistics compiled by AIM/US on the size of the auto ID industry.

The last time we wrote about AIM's "Market Growth Report" (SCAN July 89), we received comments from both David "Zap" Czaplicki and AIM's Executive Director, Bill Hakanson, who took us to task for not understanding this casual AIM

survey. It is only intended, they said, to "estimate the rate of growth" within the auto ID industry, and not to provide absolute figures.

[The survey started in 1986 when Zap was AIM's President. Since then, blank slips of paper have been passed out to all AIM members who attend the February, June and December organization meetings. They are asked to jot down -- anonymously -- the current and following years' sales estimates for their companies. These numbers are then totalled and compared to estimates from prior meetings.]

Two years ago (SCAN July 89), we pointed out that this method of collecting the data was statistically unreliable: the numbers of companies attending the meetings varied; duplicate sales were recorded by many AIM members (including component manufacturers, VARs, OEMs, systems integrators and distributors); and certain major industry applications -- notably retail -- were under-represented. Since the data was incorrect, we recommended that the survey should be discontinued.

Unfortunately, the temptation was too great. Last month, one of the automatic identification industry publications headlined its leading article: "USA Auto ID Industry Forecasting 23% Growth in 1991 -- Average Growth for 1990 About 23%...International Sales up 50%." The publication then estimated 1990 market size at \$3.3 billion and 1991 at \$4 billion. The source for these projections: The AIM member survey.

A review of how the data were derived and manipulated by the publication demonstrates the futility of the exercise: There were 93 companies at the December AIM meeting who reported 1990 sales of \$2.4 billion. Therefore, the average sales per company was computed as approximately \$25 million.

This next part becomes tricky, so watch carefully: The total industry, according to this analysis, consists of the 270 companies who exhibited at SCAN-TECH 90. The 177 companies (270 minus 93) that did not participate in the AIM survey are presumed to be smaller than the AIM members who did supply their data. Therefore, 25% of the \$25 million AIM-company average (\$6.25 million) was arbitrarily determined to be the 1990 revenue figure for each of these other SCAN-TECH exhibitors. Multiply 177 companies by \$6.25 million and you get \$1.1 billion. Add that to \$2.4 billion (the figure for the 93 AIM members) and...Voila! the total revenue for the industry turns out to be "approximately \$3.3 billion."

This number was then projected to 1991, at the 23% rate that the AIM members estimated their companies would grow, and we are thus looking at a \$4 billion auto ID industry this year.

COMMENT

Our quarrel is not with the publication that put these figures together [and which, therefore, we see no reason to name]. It is with the AIM organization that continues to release statistics which are not only meaningless, but are misleading and damaging.

ID Systems Magazine recently reported on a more definitive study, completed by Venture Development Corporation, which estimates total bar code shipments for 1990 (including point-of-sale) at \$2 billion. VDC estimates recent industry growth at 10% to 15%.

We do not defend the VDC study because we have not had the opportunity to examine their methodology or data. However, we are very much aware of the AIM "methodology" and its "data" and, once more, we petition the AIM Board of Directors:

1. Discontinue the survey. It makes the AIM organization and the industry look inept.
2. Use your ample resources to institute a well-designed survey, using "blind" questionnaires to get an accurate handle on the industry's size and growth. This poll should go beyond the AIM membership and should include technology groupings (bar code, RF, OGR, VR); product categories (scanners of all types, portable terminals, printers, software, supplies); and applications (manufacturing, retail POS, other retail, distribution, transportation, government).

We hope that the next time the AIM "survey" is attempted, a significant number of members will refuse to submit any data, and put an end to this sham. This industry is large enough and important enough to do this right!

The generation gap....

....has even become a problem as it relates to the printed quality of bar code symbols. Although this issue is particularly evident in UPC/EAN, it reflects directly on all other bar codes as well.

Back in the mid-1970s, when UPC/EAN was introduced, there was a major effort by the Uniform Code Council, and many other groups, to educate and train the product manufacturers, printers and retailers about how scanning works, and the importance of printing bar codes that meet specifications as to color, bar widths, and general quality standards. Seminars were held at almost all industry conventions, articles appeared in trade magazines, in-house training programs were instituted, and most companies had at least one staff person who was familiar with the UPC/EAN requirements.

As time passed, this generation of trained "experts" moved onto other jobs. They were replaced, in many instances, by individuals who were given the UPC/EAN responsibilities but had limited access to the training or information necessary to instill the quality component into their efforts. This lack of experience, coupled with the improvements in scanning efficiency, created an atmosphere in which it was taken for granted that anything that resembled a bar code could be successfully decoded.

As a result, during the past five years, liberties have been taken with the printed UPC symbol that have reduced scanning efficiency at point-of-sale:

- o Almost everyone, it seems, wants to print at the minimum 80% size -- or even smaller -- even where additional space is available.
- o Truncation has become a way of life. Manufacturers frequently complain: "They do it on Lifesavers and cigarettes -- why can't I shorten the height of the bars on my package?"

- The selection of a color scheme for the bars and spaces that may suit the graphic artist often bears little resemblance to the colors required to produce a scannable PCS (print contrast signal).
- Print quality -- particularly on hard-to-print surfaces using flexographic, hot stamping or screening methods -- is not meeting the bar/space width restrictions.
- Inappropriate symbol location, missing left or right quiet zones and incorrect item numbers are all contributing to growing inefficiencies.

The Uniform Code Council has recognized the need for additional training of the new generation of auto ID people and is continuing its series of seminars that crisscross the country throughout the year.

These efforts have not been enough to satisfy retailers, however, and in December 1990, Ralphs Grocery, the large Los Angeles-based supermarket chain, decided that more serious measures had to be taken. In a letter that went out to 800 of the retailer's primary suppliers, President Pat Collins laid it out in very explicit terms:

"Ralphs will spend about \$80 million this year on cashiers who check out our customers. In addition, Ralphs has provided those cashiers with the newest and best IBM 4680 scanner equipment that money can buy (\$21 million). Now we are in the process of developing new computer programs such as computer assisted ordering, space management, DEX/UCS receiving and coupon scanning, which are totally dependent on accurate item movement data...Unfortunately, many of today's products (almost one-third according to our finding) have UPC quality problems."

To demonstrate that Ralphs was serious in this effort to improve symbol quality, the company had retained the A.C. Nielsen Company to perform a quality study on 18,000 products in its stores. The eye-opening results were that one-third -- over 6,000 items -- had scanning problems. The major culprits were: truncation (33.7%); print quality (19.4%); package interference (16.9%); and location (13.6%).

Based on these findings, and in order to put teeth into its quality assurance program, Ralphs instituted a schedule of "appropriate charges" to recover the additional costs it will incur as a result of these non-scanning symbols. Effective January 14, 1991, an initial "warning letter" was to be sent to the offending manufacturer. After that, the first occurrence of a scanning problem will carry a minimum charge of \$500; each subsequent error will cost the manufacturer a minimum of \$1,000.

Will this same punitive approach work in other industries? That depends on the authority and resolve of the buyers and how important scanning programs have become to their operations. The important lesson, however, is that vigilance must be maintained over the quality of this important element in any scanning system. It also suggests that the new ANSI standard on Bar Code Print Quality may have arrived just in time (SCAN July 90).

SCAN NEWSLETTER LTD. • 11 Middle Neck Road, Great Neck, N.Y. 11021 • Phone: 516/487-6370 • FAX: 516/487-6449
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