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The recent significant strides....

....taken by the automotive industry to embrace bar coding and related technologies is evident from the ambitious Auto-Tech 89 conference program (Sept 19-21 at Cobo Hall in Detroit).

The conference will include sessions on automatic identification, CAD/CAM and EDI. The technical papers will be delivered by representatives from the major auto companies, their component suppliers and the vendors of auto ID hardware, software, supplies and systems. The keynote speech will be delivered by Donald Atwood, US Deputy Secretary of Defense and former Vice Chairman of the Board of General Motors. Attendance is expected to top all previous conferences.

It may be worthwhile to take a minute to review the history of bar coding as it has developed in the automotive industry -- to see if any lessons can be learned. Driven by the loss of market share to foreign suppliers -- particularly the Japanese -- the industry formed the Automotive Industry Action Group in 1981. The intent was to study ways to improve operating efficiencies by employing such methods as Just-in-Time, CAD/CAM and bar coding.

Unlike other American businesses, the automotive sector is unique in that it is an industry that has been almost totally driven from the top -- by the Big Three car companies. In the case of automatic identification, GM, Ford and Chrysler decided to set up the AIAG and enlisted the cooperation of their thousands of suppliers. This situation was comparable to the US Government project, a few years earlier, when the 20,000 Department of Defense contractors were "persuaded" to become participants in the LOGMARS program. (Contrast this with the UPC experience, where representatives of the broad base of users -- the 30,000 supermarket retailers -- provided the driving force behind the implementation of front-end automation.)

The AIAG was reasonably well-organized, staffed and funded. Full-time middle management specialists were assigned for one to two year stints to serve as heads of the technical committees. Standards were written -- some of which turned out to be innovative and very effective (e.g. multiple bar coded labels and data identifiers). Ambitious educational programs and exhibits were held to educate all echelons of the auto makers and their vendors.

The one deficiency that made implementation painfully slow, however, was the lack of a commitment by the top management of the Big Three to install the

systems and to require cooperation by their vendors. Whereas the LOGMARS program had the full support of the Office of the Secretary of Defense and was therefore able to demand compliance from all contractors and defense establishments, the AIAG seemed to be stuck at the starting gate, lacking the full commitment of the GM, Chrysler and Ford management to get out of the blocks.

During the past few years, there have been strong indications that things have become unstuck and that the automotive industry is moving ahead more purposefully. This progress has not only been evidenced by increased systems sales to the auto makers, but also by the larger attendance and upbeat attitude at last year's Auto-Tech and by the ambitious program and expectations of the managers of this year's conference.

COMMENT

Is there a lesson to be learned from the automotive industry? We believe there is!

We have always maintained that major industry changes occur only when there is a total commitment and involvement by top management. The Ad Hoc Uniform Code Council consisted of the Presidents and Chairmen of the major supermarkets and food manufacturers, who saw the need and made automation a priority. In 1986, when Roger Milliken called a meeting of the heads of the leading mass merchandise and department store retailers -- along with the CEO's of the major apparel and textile manufacturers -- to address the industry's inefficiencies, VICS and Quick Response and UPC and EDI came soon after. And when the Presidents of the major drug wholesalers called a meeting earlier this year of the pharmaceutical manufacturers and told them to place the UPC symbol on all of their packages within nine months, things began to move quickly.

The list goes on. The point is that the trade associations and standards committees serve an important function, but their work will be dead-ended without commitments from top management of the user companies. As a prime example, we recommend that the HIBCC expand its membership to specifically include the Chairmen of those major health providers who have successfully implemented auto ID. These executives could then invite their peers from other large hospitals to come and hear the message and make their own commitments. Possibly this will enable the health industry, which seems to be stalled in its own starting gate, to move forward more rapidly (SCAN July 89).

For immediate details about Auto-Tech 89: AIAG, 26200 Lahsar Road, Southfield, MI 48034; 313/358-3570.

Although scanning may not be a risky business....

....<u>Welch Allyn</u> has introduced bar coding into the lottery industry. The company has teamed up with the <u>Massachusetts State Lottery Commission</u> to include bar codes on that Commonwealth's Instant Game tickets.

Instant Game generates annual revenues in excess of $600 million for the State. The new system will require the sales agents to scan/verify the bar-coded winning tickets. According to the Commission: "This will eliminate the

possibility of ever erroneously paying a prize on a non-winning ticket."

The sponsors believe that the use of bar codes has many other advantages besides providing a high degree of integrity to the system: it will reduce handling time at the retail locations; it will permit on-line validation of Instant Game winning tickets at any of the 5,500 betting terminal locations; it will eliminate clerical errors; and it will improve agent control. The Commission expects to save a significant amount of money just by eliminating the bagging of tickets which, under the current system, are shipped back to headquarters for verification.

According to Chet Benoit -- Sales/Marketing Manager of Welch Allyn's Data Collection Division -- one of the key features of the system is that the individual scanning terminals at each retail location are on-line to the Lottery Commission's host computer. After a ticket-buyer scratches off the coating and uncovers what he believes to be a winning number, the ticket is handed back to the retailer who scans the preprinted bar code.

> The information is transmitted to the host computer, which will respond with a confirming: "You are a winner of $XX"; or a message which says, in effect: "Sorry, Charlie, try again"; or even: "This winning ticket has already been cashed in -- don't fool with our scanner/computer."

Deliveries of the terminals and readers are to begin at once and the system will be up and running this Fall. After extensive field testing, it was decided to use badge-type slot readers rather than wands or lasers. According to Benoit, the system's benefits should prove attractive to the other 37 states (plus the District of Columbia and Puerto Rico) that now have lotteries, and he expects this to grow into a significant application market.

Welch Allyn, Jordan Road, Box 187, Skaneateles Falls, NY 13153; 315/685-8945.

It may still be somewhat early....

....to evaluate the ultimate results of the Symbol/MSI merger, but some new information is now available which may shed some light on the emerging patterns.

Symbol has decided to float 3,250,000 additional shares of its common stock, principally to pay off the bank loans which helped to finance the purchase of MSI last November. (The underwriting offering was completed on August 1 at $23.625 per share.) In its preliminary "red herring" prospectus, issued in July, the company disclosed that the offering was expected to yield about $70 million, $60 million of which will go to the bank. (The MSI acquisition actually cost $157 million in cash, but Symbol needed only $60 million from the bank to supplement its cash reserves at that time.)

Some interesting facts can be gleaned from that prospectus, and also from the midyear (6/30/89) financials of the combined operations that Symbol issued soon after. The company reported that its 6 months' sales reached $114.2 million, almost two-and-one-half times last year's $46.7 million. Overall net earnings for that period, however, increased only about 7% to 30 cents/share. [Keep in mind that the 1989 results are for the Symbol/MSI combined operations, while the 1988 figures are for Symbol only.]

In comparing this year's first quarter with the same period last year, we also thought it was significant that the "cost of revenues" had gone up 10%, emphasizing the very wide disparity in gross margins between the Symbol and MSI operations. Overhead almost tripled, with engineering costs increasing from $1.7 million to $4.4 million; and selling, general and administrative expenses rose from $5.1 million to $14.4 million. (Some of these increases may be attributable to the special costs being incurred to merge the two operations -- much of which is still underway.)

[A careful reading of the prospectus -- plus statements attributed to Symbol's management -- indicates that the $67.5 million increase in the 6-months' revenues reflects an approximate 46% jump in the sale of Symbol's traditional products (hand-held laser scanners) while sales of MSI's product line (portable data collection systems) remained flat at $46 million. On July 27, one financial analyst, who follows the stock closely, reports: "(Symbol's) management now expects that MSI's sales should begin to grow during the September quarter with a notable improvement expected in the fourth quarter (and)....the real benefits of the merger probably will occur in 1990."]

On another front, the trial phase of Symbol's patent infringement suit against Opticon has been completed (*SCAN* May 89). Both parties will be submitting post-trial briefs by the end of August, after which they will await the Court's decision.

There was concern....

....in some quarters as to whether the disappointing results at ID Expo in Los Angeles, this past May, presaged a declining interest in auto ID conferences and shows (*SCAN* June 89). "Frankly, I was worried," reports Bill Hakanson, Executive Director of AIM, "as to whether this would reflect on attendance at SCAN-TECH 89. But when we analyzed the reasons, we realized that their problems had nothing to do with us. The level of interest in SCAN-TECH has never been higher and we expect to exceed our initial forecasts."

Hakanson tended to agree with the editorial in last month's *Auto ID News*. Publisher Doug Edgell speculated in his column that a lack of solid promotion and poor site selection were probably "the real reasons for the poor showing in LA." He concluded that the LA results do not portend any problem for SCAN-TECH this October in San Jose, and that ID Expo will fully recover for next year in Chicago. Edgell went on to fervently appeal to the exhibitors and attendees "not to lose faith in the premise of a second show."

As for SCAN-TECH 89, there is every indication that AIM will be engineering a successful event in their usual very professional manner. From the opening keynote speech (by TV financial personality, Louis Rukeyser, at 8:00 a.m. on Tuesday, October 17, immediately following the presentation of the AIM/*SCAN* Percival Award) through to the final International Congress on Thursday, the scheduled program promises to be very high calibre.

[The International Congress, new this year, sounds like a solid concept. This will be a 4-hour session moderated by David "ZAP" Czaplicki (Intermec), who reports: "There will be top level executive speakers from Europe, Japan, Asia, USA and the Comecon countries to discuss the

explosive growth and opportunities for auto ID in the international marketplace."]

According to Hakanson, AIM is planning for more than 10,000 visitors, 230 exhibitor booths and 41 seminar sessions. There will be daily field trips to 5 Silicon Valley electronics manufacturing facilities featuring auto ID applications in operation (Businessland, Schweber Electronics, Caere, Conner Peripherals and Measurex.) A special group of seminars will focus specifically on the uses of auto ID as they relate to industrial engineering, and to the automotive, electrical, health, telecommunications, retail and aerospace/defense industries.

SCAN-TECH has moved well beyond bar coding as its sole focus. Reflecting its broadened constituency, SCAN-TECH now showcases and presents educational forums featuring a full array of auto ID technologies including RF, EDI, OCR, mag stripe, voice and vision systems, and systems integration services.

AIM/USA, 1326 Freeport Road, Pittsburgh, PA 15238; 800/338-0206.

The possible replacement....

....of _cents-off_ _coupons_ as a retail marketing tool comes, paradoxically, just at a time when automated coupon redemption at the checkout counter is finally beginning to take hold.

In the consumer product business, couponing has grown to be one of the favorite methods for promoting new products and encouraging brand-switching. The number of coupons distributed each year has more than doubled during the past 7 years to over 200 billion, of which about 3 to 4% are redeemed, amounting to more than $2.5 billion in rebates.

But this merchandising method, which has stuffed our Sunday papers and mailboxes with hundreds of coupons weekly, has always been plagued by fraud. Study after study has shown that the grocery manufacturers lose over $250 million annually as a result of misredemptions (_SCAN_ Dec 88). In addition, the Stone Age methods employed for hand sorting and counting these individual slips of "funny money" have added enormous cost and encouraged fraudulent operations, starting with the retail clerks and travelling all the way up to the phony international redemption centers.

Help seemed to be on the way with the advent of bar codes. As far back as 1973, when UPC was first conceived and implemented, it was recognized that printing the bar code on the coupons, for automatic scanning at check-out, would be the solution to the fraud, misredemption and administration problems. It wasn't until the last couple of years, however, that manufacturers began including the UPC symbol on the coupons; and, finally, during the past 12 months, there seemed to be some movement by retailers to add the necessary software to their systems to control coupon redemption at the checkout counter. According to _Progressive Grocer Magazine's_ Annual Report of the Grocery Industry-1989, about 10% of all supermarkets are now scanning coupons.

> [Let us not ignore the fact that the retailers "earn" over $500 million each year in fees that are paid to them by the manufacturers for handling and processing the consumers' coupons. Many of these supermarket

operators are not rushing to embrace any new systems that will deprive them of this source of petty cash.]

A related system has been recently introduced which does more than just scan the coupon. Developed by Advanced Promotion Technology (Deerfield Beach, FL) and under test at a Kroger supermarket, this system, dubbed the "coupon eater," not only scans and validates the coupons when redeemed by the consumer, but it destroys them as well while it stores the data for later transmission to the manufacturer for rebate to the retailer.

Another totally new approach to the coupon problem has now been developed which, if successful, may completely eliminate the paper coupon. This new system will track consumer purchases, store them in the retailers' scanning-computers, and then issue rewards in the form of cash rebates against future purchases.

Designed and offered by Citicorp POS Information Services (Stamford, CT), the system is simplicity itself and works like this: consumers who elect to participate will be issued a bar-coded ID card which is presented to the check-out clerk at each visit to the supermarkets; as the shoppers' purchases are scanned, certain branded products (from those companies who have signed up to participate) are recorded and accumulated in the store's data bank on a continuing basis; when the total purchases of a targeted product reach the predetermined rebate level, a cash credit is mailed to the consumer to be redeemed at that supermarket.

It is a clever system. It enlists the cooperation and participation of the retailers, because only purchases made at the store that issues this special ID card will be included, and the consumer must return to that store to redeem the rebate. And, most important to both the retailers and manufacturers, the system provides immediate, detailed product information tied to the profile of the consumer. (Each card holder has given the store specific information as to family size, income, etc.)

The Citicorp program, called "Reward America," is scheduled to begin October 1 and is currently in test in some major chains, including Vons, Dominicks, Jewel Food, Publix and Pathmark. Although there have been some rumblings about invasion of privacy issues -- and about the way this data adds to the pool of private information available about both individuals and the general public -- there has not yet been any organized consumer objection to the system.

One of the ultimate tests of the success of this new technique will be to track whether the consumers prefer the old-fashioned instant gratification (when redeeming coupons at the time of purchase), versus this more restrictive method that introduces delayed accountability (and requires the trust and belief by the customer that the store will maintain honest and accurate records).

The successful implementation....

....of point-of-sale UPC/EAN systems has not been matched by progress with the Shipping Container Symbols for outer cartons (called Despatch Unit Coding by the European community).

In the US, it took four years, starting in 1977, for the Distribution Symbology Study Group to decide to use Interleaved 2/5 (ITF) as the recommended symbology to print on corrugated board. It took another few years for the Uniform Code Council to specify the 14-digit SCS code and symbol that became the standard for the US and Canada.

In Europe, the UPC/SCS, which became known as ITF-14, was adopted essentially unchanged by the UK and France. However, almost all of the European EAN members also included the basic EAN-13 code and symbol as an acceptable alternate for despatch units.

One notable exception was Germany, which specified that only EAN-13 was to be used through all levels of packaging -- from the individual consumer package right up to the skid of 50 cartons.

Into this already confusing and non-uniform situation, the Germans have now informally floated a new and somewhat radical proposal. A discussion group, sponsored by the CCG (Germany's EAN affiliate), has proposed that all previous shipping container symbologies should be dropped in favor of Code 128. In its report, printed in the CCG publication *Coorganization* (June 89), the group states: "The ITF code has no advantages other than the fact that it is already in use."

The concluding statement, issued by the discussion group, appeals for a complete reevaluation of the coding and marking of despatch units. The CCG group writes: "The participants in the discussion request that those responsible for the EAN in all countries rethink the complete coding of transportation units and to replace the unreliable ITF symbology with EAN-128 so that the identification of all units which are not immediately definable as consumer units can be made in either the EAN symbology or EAN-128 symbology."

COMMENT

The only thing really wrong with the UPC/SCS (EAN/ITF-14), we contend, is that it has not been widely implemented. Our own view is that this lack of commitment has had nothing to do with the reliability or efficacy of the code and symbol itself. The real problem seems to be a lack of enthusiasm by the retailers and others in the distribution network to install back-door and warehouse automation. While these systems remain in limbo, there will always be those who want to "rethink" and tinker with the decisions already made. Those revisionist efforts would be better exerted toward enlightening corporate management to the advantages of discarding the clipboards and keyboards in favor of bar code scanning.

The CCG discussion group may have opened up another can of worms. The European Community is dedicated to "harmonizing" all standards among their 12 nations before 1992. There seems little likelihood that a radical change such as this could be adopted by all of these national groups in so short a period of time, and this proposal, if pursued, may simply compound the problem.

[We will be discussing the implications of standardization in our September issue, with our second article on EC 92 and how it will affect the automatic identification industry.]

<u>The volatile issue</u>....

....of <u>item</u> <u>pricing</u> in supermarkets has been causing concern in Europe just as it has in the US (*SCAN* July 89). Consumer objections have a different focus in Europe, however.

In Germany and England, where the dispute was prominently featured in the consumer press and became a cause celebre, recent objections centered around the discrepancies observed in the stores between the shelf-marked prices and the corresponding item prices in the scanner/computer data files. In the UK, there have even been a spate of court cases (given national press coverage), which resulted in retailers being heavily fined for selling goods at prices higher than those marked on the shelf-edge labels.

The EAN affiliates -- CCG in Germany and ANA in the UK -- decided to meet these public criticisms head-on. Their first move was to publicize a set of guidelines for the retailers to follow in order to avoid the pricing discrepancies. The EAN groups have also taken their case directly to the consumers in a vigorous justification of the economic and convenience benefits of automated checkouts.

The ultimate CCG message was that free market competition would work much better than any legislation and would increase the benefits to the consumer. The CCG launched its spirited defense in a detailed 8-point statement which presented its case to the public as follows:

> Scanning lowers consumer prices; it was not the EAN system that caused the pricing discrepancies (as had been quoted in the press), but it was human errors on the part of store management -- which did not follow procedures; don't blame the cashiers -- they were just following instructions; the retailers are not doing any of this deliberately, since the store owners wouldn't be stupid enough to risk the criticism and negative publicity; it's not the fault of the hardware; scanning errors, in fact, are much lower than those found in manual systems; and finally, the consumer and government criticisms were of a general nature and not numerically verifiable.

In the UK, the ANA is emphasizing guidelines that call for a senior manager in the store to be made accountable for price changes. In addition, the instructions specify that price changes from a central headquarters computer should not be put into effect until positively acknowledged by the store.

There are no final words from either country as to whether these counter-publicity campaigns are working. It seems to us, however, that these methods may be a better approach than the ones taken here in the States where none of the trade associations have made any public moves at all.