When they write the history of bar code scanning....

....May 1982 in Chicago will stand out as a landmark time and place. Much was going on at hotel meetings, behind closed doors, as well as on the convention floors at McCormick Place.

The center ring was the monster _Food Marketing Institute (FMI) show_ occupying every square foot of the enormous hall, tying up traffic for miles around and bringing together visitors from every corner of the world. Food, equipment and services for the supermarkets were brilliantly displayed.

The side shows were the _Uniform Product Code Council Board of Directors'_ meeting (5/10/82) and the _International Article Numbering Association, EAN, General Assembly_ meeting (5/7/82). At both, significant decisions were reached which will impact the future of bar code scanning for many years.

What was born at these meetings has been in gestation for five years. And although FMI, UPCC and EAN are all retail-oriented, the real significance, we believe, goes beyond the effect these decisions will have on retail scanning applications. Machine-readable symbols on case codes (or despatch outers), and the emphasis on communications and automation, will change the nature of the bar code scanning industry.

It is probably too large for us to grasp so soon and all in one issue. We will cover FMI, UPCC and EAN separately below. We will be coming back to the consequences of Chicago for many months to come.

All of the major front-end....

....system suppliers were exhibiting at the _FMI Show_, of course, but you had to search for the slot scanners. That's not what they were featuring.

Now it's store management systems, communication packages, shelf management control, price integrity, meat merchandising systems, and all of the other operating functions that have become integrated with the fundamentals of bar code scanning. Automated supermarkets with front-end scanning will be adding backroom and deli counter scales with bar coded label printouts; price verification will be done with portable scanning units; backroom receiving will include carton scanning; Direct Store Delivery (DSD) control will require scanning by the route salesman. As anticipated, the UPC symbol has become ubiquitous and will be increasingly involved at every level of operation.

Among the more notable exhibits were the portable price verification systems and components by Azurdata, MSI, Micronics, Norand, Symbol Technologies and Telxon. For the most part, these systems comprise existing hardware, re-packaged and reprogrammed to check shelf prices in a variety of configurations. A new entry is Bass, Inc. (Box 2084, Dayton, OH 45429; 513/293-5732) demon-strating an FM wireless, hand-held terminal unit. This unit, combined with Telxon's hand-held terminal and bar code wand, establishes radio contact with the installed NCR host computer, and checks the current price file. The en-tire Bass package costs under $7,500.

The automated scales, with bar coded label printers, were featured by no fewer than 10 companies that we spotted: Electronic Scales International, Esselte Meto, Franklin Electric, K-Tron, National Controls (NCI), New Brunswich International (NBI), Sato, Tec/America, Toledo Scale, and Weldotron. This has become a most competitive area with prices coming down and performance going up almost daily.

For front-end scanning, add Tec/America (Tokyo Electronics) and Mitsubishi to the slot scanning systems being offered in the US. They are emerging aggres-sively with single lane and multiple lane configurations, including optional hand scanner attachments. Symbol Technologies and Metrologic have adapted their look-alike hand-held laser guns, and fixture mounted them ready for POS applications for the smaller retailers.

From an overall perspective, scanning was everywhere. Almost every type of equipment being offered to the retailers includes some element of bar coding. It has become a totally integrated element, basic for all approaches to auto-mation and increased productivity. And the feeling you get is that applica-tions of bar code scanning for the supermarkets and beyond is just hitting its stride.

The next generation....

....of bar code scanning, linking the retailer to the manufacturer, will be determined by the decisions of the UPCC Board of Directors at its Chicago meeting. As described in its official announcement, the Board "closed the re-maining gaps in the existing UPC system, so that it now allows for Uniform Product Identification and scanner reading at all stages of product distribu-tion in North America." The specific decisions reached:

1. The adoption of the 14-digit case code designed to achieve "full compati-bility between the UPC and EAN Code systems". (Compatibility may be strained however -- see EAN decisions below.) The 14-digit code, to be represented by the interleaved 2/5 symbology, will be used for shipping containers of fixed weight items. The code will include the 2-digit flag code which is a key element to providing essential compatibility with EAN. For the US and Canada the 2-digit flag code will be a zero followed by the number system character. The flag code will be followed by the 10-digit UPC code and the check digit. This adds up to 13 digits and, since interleaved 2/5 requires an even number of digits, an additional number (probably a zero) will be used as a filler in the first position. Under the existing guidelines, the case code can be identical with the UPC code on the consumer unit of sale. Thus for a grocery item with a UPC code of 0/12345/67890/5, the UPC case code and symbol will read 00012345678905.

2. The UPC Council also established a uniform system for identifying shipping containers of variable weight products such as fresh meat and produce. The recommended code structure for this type of product includes manufacturer and item identity codes, similar to those used for fixed-weight items, plus a segment for coding packed weight of the shipping container. The weight will be coded into four digits which, added to the 14-digit case code, will yield an 18-digit variable-weight code and symbol.

The UPC Council is revising the guidelines and preparing the new shipping container symbol specifications which will be distributed later this year. Copies can be obtained at a cost of $30/each by writing to the UPC Council after August 1, 1982. UPC Council, 7051 Corporate Way, Dayton, OH 45459; 513/435-3870.

Unfortunately, we will have to forget....

....about international uniformity of case codes and symbols. While the UPC Council was adopting the 14-digit interleaved 2/5 symbol, the EAN group seemed to be adopting everything in sight.

The EAN General Assembly was convened on May 7 in Chicago determined to make certain important decisions -- and they made them. It will take a while to sort out the impact of some of them, but it was important for them to move forward. As adopted in Chicago, the following guidelines will control the use of codes and symbols on despatch outers in all EAN member countries:

1. Interleaved 2/5 -- 14 digits, identical in all respects to the UPC version described above, was approved.

2. Interleaved 2/5 -- 16 digits was supported by France and was also approved. This will include a 2-digit additional code, referred to as the logistical variant. These 2 digits will designate the quantity contained in the shipping container. The logistical variant does not necessarily represent the numerical equivalent of the contents; i.e., 01 could mean 12 cans per case; 02, 24 cans; etc.

3. And finally, the EAN-13 and EAN-8 symbols, exactly as designed for the consumer unit of sale, will be acceptable. The primary sponsor of this approach was Germany, which felt it had to accommodate the Cash & Carry retailers who sell merchandise by the case and scan the outers at the stores' front-end.

4. The case code must be different from the EAN code on the consumer unit-of-sale package. This stipulation is different from the UPC guidelines.

5. Although each national EAN group may choose to select only one of the approved codes and symbols for its country, the General Assembly has stipulated that all established scanning systems must be able to read and decode all three versions at random. Scanning equipment makers, take note! The probable meaning is that any case code scanners purchased in EAN countries must read EAN-13, EAN-8, interleaved 2/5 (14) and interleaved 2/5 (16), and they must do this automatically and without operator intervention.

The EAN admitted two new members -- South Africa and Yugoslavia -- bringing its total to 18. From all indications this number is expected to increase very rapidly over the next few years, with many countries preparing to file for membership.

Comment

Those are the decisions that will guide the design and development of new equipment for printing and scanning bar codes on shipping containers. It is not the best of all worlds, but those who made the decisions believe that this industry can live with it and supply the tools needed to accomplish the desired ends.

It tends, however, to move even further away from UPC/EAN conformity. If case code scanners sold and installed in the US and Canada are not designed to read all versions -- and the UPC Council has taken no stand on this -- then we are back to the situation where US retailers and support industries will not be able to scan all imported merchandise.

We have added a new name....

....to our UPC Scanning Scoreboard with the entry of Tec/America into the US/ Canadian supermarket scanning scene. This is the first Japanese company to successfully offer front-end scanning equipment (using a Spectra Physics scanner). Mitsubishi will not be far behind. So, the first four months of 1982 shape up like this (based on data supplied by FMI):

	Jan. - April 1982		Total as of 4/30/82	
	#	%	#	%
NCR	200	32.3	2,065	37.5
IBM	92	14.9	1,348	24.5
Datachecker	178	28.8	1,296	23.5
DTS	93	15.0	442	8.0
Sweda	38	6.1	321	5.8
Berkel	5	.8	24	.4
Tec	13	2.1	13	.2
Total	619	100.0	5,509	100.0

The Army Symbology Conference....

....had to turn away over 50 applicants because they ran out of space. The 140 army officers and civilians who came to the Sheraton Pocono Inn (Stroudsburg, PA) on May 4-6 were briefed on a wide range of subjects related to the implementation of LOGMARS. The material included a full description of the LOGMARS program as it is being implemented by the Army, Air Force and Navy; requirements and program funding and reporting; and demonstrations by bar code scanning equipment manufacturers.

LOGMARS is receiving some very special government attention from levels as high as the Office of the Secretary of Defense because of its potential impact on productivity and cost savings. Program implementation will move ahead on a sporadic basis as each group establishes its priorities and requirements. Some seem to be jumping in too rapidly without sufficient preparation of contractors. Others just don't know enough about the program to get it off the ground.

All indications are that this will become a major factor in our industry as source marking spreads to the contractors supplying the 1.4 million line items

purchased by the Department of Defense. The system will overlap other indus-
tries and transportation networks and is bound to have a synergistic effect.
It's another step in the amazing proliferation of machine-readable bar code
symbols.

In a deluge of new products....

....Computer Identics has introduced a wide range of new scanners and readers.
The major focus is on the new SCANSTAR series, the company's new line of bar
code laser scanners for material handling, manufacturing and distribution ap-
plications.

- SCANSTAR 20 for manufacturing and in-process applications with through
  put rates of up to 250 products per minute. The company rates this
  product as the "lowest cost per item scanned of all laser scanners on
  the market". SCANSTAR 20 is priced at $4,400.

- SCANSTAR 50 is for material handling applications with scanning speeds
  of up to 1200 scans per second. This unit is described as the smallest,
  fastest, most versatile scanner in its class, includes an integrated
  decoder and power supply and is priced at $5,500.

- SCANSTAR 65 with scanning speeds up to 600 per second is priced at
  $9,644. This unit has a separate decoder which can double as an intelli-
  gent controller, with floppy discs and a variety of communications in-
  terface options. According to C/I, this model is designed for tough,
  sophisticated applications with demanding specifications.

- The Slot Reader, rated as an alternative to hand-held scanners, is de-
  signed for reading bar-coded job and traveler tickets, badges and docu-
  ments. These tickets and documents are hand carried through the slot
  past a visible red light source, similar to the Computer Identics Light-
  pen. The Slot Reader costs $303.

- The Wedge or Model FCP-W-5251 is a bar code reader that interfaces with
  IBM Systems 34 and 38 through the IBM 5251 CRT terminal. It is self-
  contained and installed between the keyboard and display of the 5251
  terminal. The unit includes a hand-held Lightpen reader and is priced
  at $1,490.

- Model FCP-22A is a compact bar code data collection terminal with full
  alpha-numeric keyboard, 32 character display and a hand-held Lightpen
  reader. This unit is priced at $1,670.

All prices shown above are for quantities of one, with sharp discounts for
distributor and OEM customers. Computer Identics, 31 Dartmouth Street,
Westwood, MA 02090; 617/329-1980.

Two new plug-in conversion boards....

....have been introduced by Analog Technology for use with the Texas Instrument
810-RO matrix impact printer. The conversion boards provide added performance
features to the 150 cps printer. The selectable hardware fonts include a bar
code character set which prints the LOGMARS 3/9 code.

The Analog Model 190, priced at $850, offers an alternate ROM set which adds OCR-A and B character fonts. The company will introduce its new Model 195 on June 28, at the COMDEX show (Atlantic City, NJ). This unit provides additional special forms, label and bar code generation features. The Model 195 costs $1,295 and the combined price with the TI 810 is $2,940. According to James Lawrence, Analog's President, "Potential users will find this system to be a very cost effective alternate to controller boards used with Printronix printers". Analog Technology, 15859 East Edna Place, Irwindale, CA 91706; 213/960-4004.

Photographic Sciences reported....

....a whopping loss of $372,341 for the quarter ended 3/31/82:

	($000)			
	3 months ended March 31		9 months ended March 31	
	1982	1981	1982	1981
Net Revenues	1,107	814	2,945	2,399
Net (Loss)	(372)	(73)	(724)	(284)

John Hickman, Chairman, and Jack Blackert, President, attribute the loss to "significant expenses associated with the development of bar code based symbology systems capability...expansion of production capacity and final write-offs of assets not expected to be realized in the near-term future." They promise new products ready for limited test marketing by June 30, 1982, for "stand-alone bar code based symbology systems". This system's approach represents a total departure by the company from its past product lines.

Bar code scanning will be well represented....

....at the first International Manufacturing Systems Conference '82. The objective of the conference is to provide educational and informative materials addressing international manufacturing methodologies, robotics, graphics, CAD/CAM, NC/CNC, and quality control. The conference program will include 150 educational seminars, 350 vendor booths and 80 vendor product presentations. The sponsors of the conference have indicated that they expect over 7,000 attendees and the program will include as many as eight simultaneous presentations.

Bar coding papers will be delivered by Ed Shadd of Symscan (who convinced the conference management to put bar coding on the agenda); David Collins of Computer Identics; the Automotive Industry Action Group (AIAG); and by George Goldberg, Publisher/Editor of SCAN Newsletter. This very ambitious conference will take place on July 11-15, 1982 at the Buffalo Convention Center in Buffalo, NY. IMSC Conference '82, 186 North Water Street, Rochester, NY 14604; 716/232-3950.

Another conference with similar objectives and also featuring bar code scanning, is the Industrial Productivity Conference sponsored by the Society of Manufacturing Engineers (SME). This is a traveling show with dates of June 15-17 in Cedar Rapids, IA, June 23-25 in Birmingham, AL, and October 6-8 in Long Beach, CA. Tom Sobczak will chair a seminar on Bar Coding Concepts in Manufacturing/ Assembly which will include a paper delivered by Craig Harmon of Q.E.D. Systems. For further information, contact your local chapter of the SME.