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Speculation has been rampant....

....for many years as to when one of the superpower, Fortune 100 companies would make a serious move to enter the non-retail arena of automatic identification.

The back room chit-chat has noted the healthy 25% to 35% growth rate reported for the auto ID industry; that it has direct operating connections with the computer and material handling technologies; that there are numerous trading partner relationships with larger companies; and that optimistic projections for growth and profitability continue into the next century.

Many company names were bandied about in these theoretical takeover scenarios, but we can't recall any serious discussions which included Intermec as the acquiree or Litton Industries as the acquiror. Intermec was proceeding toward its goal of becoming a fully integrated worldwide organization specializing in bar coding systems; Litton's recent actions did not reflect any enthusiasm in the direction of expanding its auto ID involvement.

The announcement on April 18, therefore, that the Boards of Directors of both companies had agreed for Litton to purchase all of Intermec's outstanding stock for $24 (cash) per share seemed to have surprised everyone. No one had recognized any signals that Intermec was for sale; many could not understand what they perceived as the low price.

The documents describing the negotiations leading to the acquisition are very revealing. Informal discussions between the two companies began in late 1988. At an early stage of these meetings (in February 1989), a significant agreement was signed which precluded Litton from launching any takeover bid without Intermec's consent. In other words, if anything were to happen, it would have to be on a friendly basis with both parties in accord.

It wasn't until February 22, 1991, however, that the first serious discussions were held, culminating on March 29 with an offer from Litton to buy Intermec for $23 per share. Just 11 days later, on April 9, a unanimous Intermec Board of Directors countered with an asking price of $24, and within three days the deal was completed at that figure. [There are approximately 9.1 million shares of stock outstanding, bringing the total purchase price to about $220 million.]

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INCLUDING THE INTERNATIONAL EDITION

In October 1990, at Litton's request, Intermec had prepared a 5-year analysis of projected financial results, described as the company's "most likely" scenario for sales and earnings (figures in $ millions):

FISCAL YEAR	SALES	*OPERATING INCOME
1991	$200	$19.0
1992	230	29.2
1993	287	48.2
1994	360	67.7
1995	450	89.7

(*Note: Net Income data is not available.)

Litton's frank assessment of these estimates, at that time, were that they were "optimistic...even under ideal circumstances." In January 1991, Intermec revised the FY 1991 and 1992 forecasts significantly downward, which seemed to bear out Litton's skepticism. The new estimates were that FY 1991 sales would be $191 million with $7.2 million in net earnings ($.90 per share); and for 1992, $213 million in sales, $19.3 million in operating income and $10.8 million in net income ($1.30 per share).

Even more significantly, whereas the Intermec October 1990 analyses had projected a 25% annual growth rate over the next five years, Intermec stated in March 1991, that a 10-15% annual revenue growth rate "would be more reasonable" over the next several years. Other technical factors were cited in the March revision which could affect the projected sales growth.

Intermec will become part of Litton's Industrial Automation Systems (IAS) group. IAS is a supplier of systems for integrated, high-volume manufacturing, material handling, and information and control.

It is not yet clear how Intermec will function under the IAS umbrella. One division of the IAS group, Integrated Automation, which was acquired by Litton in 1987, could have been an interesting link-up with Intermec's product line and system capability. Working on large systems integration contracts, Integrated Automation provided consulting services for factory and warehouse automation -- right up Intermec's alley.

The only problem is that Integrated Automation's systems consulting operations were terminated by Litton in January 1991 -- due to sharply dwindling sales, and internal conflicts with other products and services offered by the IAS group. This move was taken just as the Intermec acquisition negotiations were coming to a head.

COMMENT

Does the acquisition of Intermec portend more moves by larger companies into non-retail auto ID? There are certainly lots of tempting candidates around, including at least half a dozen companies with good market position, healthy current sales and earnings, and attractive future prospects. The Intermec-Litton deal will be watched to see whether the original company will prosper as a result of the expanded financial resources and other benefits from its new parent.

Meanwhile, the question remains as to why Intermec was purchased at such a seemingly low price after less-than-aggressive negotiations on its part. Many industry-watchers -- including some financial analysts -- have expressed surprise that what is supposedly a growth company, in an acknowledged growth industry, would have been sold at what amounts to just 18 times the current year's projected earnings.

The other question that arises, going beyond this particular buyout, is whether auto ID will retain its distinct identity. If acquisitions are made by large companies, and auto ID operations are folded into corporate groups with missions beyond bar coding and RF, there may be a blurring of this industry's boundaries.

It's deja vu....

....all over again, as Symbol Technologies moves its patents into position and fires another salvo. This time the target is Spectra Physics (Eugene, OR). Symbol has sued Spectra, specifying that four of its patents are being infringed by Spectra's Model SP300 hand-held laser scanner and seeking to "enjoin Spectra from selling products which violate Symbol's patents and to obtain monetary damages."

The litigation between these two companies has become very involved and very messy. Some background: Under a contract signed in 1985, Spectra Physics was the first company licensed by Symbol to manufacture and sell its hand-held laser scanners. Prior to this agreement, Spectra had been manufacturing laser guns for Intermec and MSI Data. But Spectra had backed down from supplying this product after Symbol had sued them, in 1984, for patent violations.

In 1986, Spectra sold the Symbol license to Computer Identics, which sat on it for a few years, never producing any significant number of laser guns. In early 1989, Spectra brought the license back for about a million dollars -- the same price it had originally received from Computer Identics (*SCAN* Mar 89).

Then, late last year, Spectra -- now owned by Sweden-based Pharos -- announced a brand-new line of hand-held laser guns. Only these scanners weren't based on Symbol's product design, but had been developed by Opticon. Spectra was well aware that Symbol had just soundly defeated Opticon in a court battle over patent infringement of these very same scanners. But since Spectra had a Symbol license, it felt it could proceed with impunity.

And then, not content to seemingly rub Symbol's nose into it, Spectra followed up this move with a suit charging Symbol with unfair competition, intimidation of customers and other corporate misdemeanors (*SCAN* Oct 90).

While all of these legal moves are going forward, no one is talking for the record. But there is lots of speculation whirling about:

- What motivated Spectra to battle Symbol in the courts rather than in the marketplace? Was it a desire to offer a real alternative to the Symbol product line rather than a "me-too" version? Or reduced product cost? Or did they feel driven to challenge Symbol's hegemony in this product area?

- Will these legal shenanigans make potential customers reluctant to commit to Spectra's laser guns? After all, Symbol's unbroken string of legal successes in defending its patents is well known, and no one wants to run the risk of purchasing equipment that may not be supported a year from now.

- Will a much larger, more formidable opponent like Spectra present a greater challenge to Symbol than its previous skirmishes with smaller companies like Opticon, Metrologic or Photo Sciences? (We've omitted NCR because they never seemed serious about pursuing this market anyway.)

- Do these legal actions give Symbol the right to abrogate its license agreement with Spectra? Or, putting it another way, if Symbol wins the suits, does that leave Spectra out of the hand-held laser scanner market once more?

While all of this maneuvering makes for interesting reporting, we are beginning to believe that the relatively small automatic identification industry has had more than its share of litigation. Here's an intriguing statistic someone might want to research: compare the legal costs of all US businesses, as a percentage of the gross national product, to the percentage of legal costs to total sales among the auto ID companies.

The ink was hardly dry....

....on the patent cross-licensing agreement between Symbol Technologies and Photographic Sciences (*SCAN* April 91) before PSC moved aggressively into the retail marketplace with their hand-held laser scanners.

In early May, PSC entered into a non-exclusive, worldwide agreement with POSdata to sell PSC's series 5300 laser guns to retailers. POSdata (Gig Harbor, WA) is a major VAR of scanning systems to the retail trade. The company, a wholly owned subsidiary of Sensormatic Electronics, specializes in POS bar code scanners and peripherals, including scanner/scales, mini-slots and CCDs. Previously, POSdata had successfully carried the Metrologic line of laser guns until Metrologic ran into Symbol's patent infringement buzz-saw and withdrew this product group from the market (*SCAN* July 90).

President Bill Crane of POSdata postulates that customers become nervous about committing to a product when litigation hangs over the market. "The Symbol-PSC agreement gives us the protection we did not have with the Metrologic products," he explains, "even including their newly designed models" (*SCAN* Feb 91). Crane added: "The same problem exists with Spectra Physics because of their current litigation with Symbol."

POSdata decided to carry PSC's laser guns, rather than Symbol's, because Crane felt there was no "channel of distribution conflict" (which he describes as Symbol being "all over that market selling around you"). Conversely, it should be noted that this agreement represents PSC's first serious entry into the retail market.

Crane estimates that his company had sold 5,000 to 10,000 Metrologic laser guns during the first 12 months that he carried that line a few years ago (including a major contract with K mart). He forecasts that POSdata can sell as many as

5,000 of the PSC units during the next 12 months -- which may make his firm PSC's largest customer. Crane says that he is already exploring new markets for this product on the Pacific rim as well as other foreign regions.

According to POSdata Product Manager Charlie Moore, the units will be marketed under the POSiscan 1000 label and will be shown initially at the Food Marketing Institute show in Chicago on May 5-8.

POSdata, PO Box 1305, Gig Harbor, WA 98335; 800/852-3282.

We were quite critical....

....of the AIM-sponsored symbology study completed by the State University of New York at Stony Brook in 1987 (*SCAN* Oct 87; Nov 87; May 88). We disagreed with the proposed methodology, the actual test performance and, most vehemently, with the manipulation of the test results.

Recently, therefore, we have been following with a great deal of interest the new symbology study undertaken by Ohio University. Once again, the test has been commissioned by AIM and supervised by its Technical Symbology Committee (TSC). The project -- titled "Code 16K and Code 49 Data Integrity Test -- has been assigned to OU's Center for Automatic Identification at the College of Engineering and Technology under the direction of Dr. James Fales.

Because of the potential uses of Codes 16K and 49 in the health care environment -- these two-dimensional, high density bar codes were designed with health care applications in mind -- the Health Industry Business Communication Council (HIBCC) is a contributor and an interested participant in the study (which has a projected budget of about $32,000). The stated goal of the test is "to collect data that could lead to conclusions regarding the reliability of Code 16K and Code 49 bar code symbologies for applications in a health care environment."

The actual test calls for the completion of 5 million scans of bar code symbols averaging 15 characters each -- or a total of 75 million decoded characters. In addition to 16K and 49, Codes 39, 128 and UPC-A were added to provide the alternative symbols in the auto discrimination portion of the test.

From our reading of the test design, and discussions with the participants, it appears that a great deal of effort has been invested in this study in order to control all of the variables and to provide the highest degree of reliability.

For example:

- There are five symbologies; 1,000 printed symbols of each symbology; 1,000 read attempts of each printed symbol.
- The custom-designed testing apparatus was built with four reading stations and a device which "robotically" loads the special carrier sheets onto the unit.
- The symbols are scanned with four hand-held laser diode scanners (rotating-polygon mirror design) which are fixtured in place. Each scanner reads each symbol 250 times.

- The vacuum-formed carrier sheets, to which the symbols are adhered, are designed to represent four different configurations of surfaces found in the health care environment; i.e. packages, test tubes, child wrist bands, adult wrist bands.

- Each carrier sheet, in addition to having a test symbol, is also uniquely identified with its own bar-coded serial number so that each of the 5 million scans is "100% traceable to a single label."

- The actual symbols are printed on a variety of substrates using various printing methods, including offset, dot matrix, laser, direct thermal and thermal transfer.

- The decode algorithms for the five symbologies are supplied by the TSC, based on AIM reference decode algorithms. [Ed. Note: This is the only non-controlled variable among the five symbologies. We questioned this as a factor that could possibly influence the final results, but the answer was, in effect, that there is no alternative and "we have to work with the best that's available."]

The preliminary tests of the operating procedures and devices are now under way and the completed study is targeted to be released before SCAN-TECH 91 (November 5-7).

Interestingly, if the test's methodology, equipment and results prove successful, there are two additional benefits to be gained from this program. First, although Codes 39, 128 and UPC-A were not the focus of the study, the accompanying tests on these three symbologies will be as complete as those on 16K and 49. Since previous tests on these symbols have never been fully accredited nor accepted, these results could be very meaningful -- and we hope they will be included in the final report.

Second, the testing apparatus and the management group involved will remain in place at Ohio University under the supervision of Dr. Fales. This facility offers an attractive benchmark testing site for scanners, printers, labels and other hardware, software and materials that could be commissioned by private companies.

The public disclosure of the OU test design, along with the release of some limited progress reports on the actual study, provide the openness that was sometimes lacking in the 1987 undertaking. We hope this policy continues to the successful conclusion of the entire project.

The annual meeting....

....of the EAN General Assembly was held in Melbourne on April 18-19, at which time Roland Fahlin of Sweden was elected President of EAN and J.A.N. Van Dijk of The Netherlands became Vice-President. Although the decisions reached seem to be mostly administrative, there are important new developments that will bear watching.

> [Newly admitted to EAN membership were Bulgaria, The Peoples Republic of ("Mainland") China, and a consortium of six Central American countries represented by the Instituto Centroamericano de Codification Commercial

(ICCC). The ICCC was issued a single EAN number which covers Guatemala (designated to administer the central organization), El Salvador, Honduras, Nicaragua, Costa Rica and Panama.

The first two new admissions, it seems to us, represent the continuing move by capitalism to push communism to the wall. Or, borrowing from a financial magazine's well-worn slogan: "EAN -- The Capitalist Tool."]

The new developments that portend important future changes were a revised EAN mission statement and organizational structure:

- Although the new mission statement was drafted and agreed to by the General Assembly, there were no details released as to the ensuing discussions and its full future meaning and intent. The statement reads, in part, that the EAN organization "is to take a leading role in establishing a global multi-industry system of identification and communication for products and services."

  The operative phrases to watch in the coming months will be "global multi-industry" (which suggests that the General Assembly sees its mission as going well beyond retail applications); and "products and services" (which draws in a new sphere of influence outside the previous concern with tangible items only).

- The major change in the organizational structure of the EAN Association is the creation of a Management Board empowered to make administrative and technical decisions. This smaller, more select group will act for the more cumbersome General Assembly where every member -- large and small -- has had an equal vote.

We view these moves as streamlining the EAN organization, positioning it to make decisions more rapidly in a much broader area of interest. We expect that EAN will be promoted more and more as the one true open system, irrespective of the type of industry or product.

After a 10-year battle....

....through the Japanese patent office, Symbol Technologies was finally issued a basic patent for its hand-held laser scanners. The original application, filed in 1981, had been actively opposed by a number of Japanese companies, including: Opto Electronics (parent of US-based Opticon, the company that Symbol won its patent infringement suit against last year); and Tohken (manufacturer of laser scanners).

This new patent protection would seem to strengthen the position of Olympus Symbol, the joint venture company recently formed by Symbol and Olympus Optical (Tokyo) to market Symbol's bar code products in Japan (*SCAN* April 90).

Although there is an apparent....

....plethora of publications related to EDI, two new magazines have been launched on this subject. The most recent one is Doug and Gabrielle Edgell's new bi-monthly, *Data Interchange* (under the Edgell Enterprises banner).

Edited by Georgia Colecchio -- who also edits *RIS News* for the Edgells -- the March-April 1991 premiere issue has just arrived. Subtitled "The Forum for EDI Business Partnering," the publication targets "corporate, financial, marketing, MIS, or operations decision makers involved or interested in EDI and other messaging techniques." The first issue contains articles on EDI applications with additional features on current news and new products.

Data Interchange is a slick, well-written and professional magazine that reflects the experience and know-how of its publishers and editors. We suspect, however, that advertising revenues may be tough to obtain for a publication whose subject, according to Doug Edgell himself, is more a "philosophy of doing business" than a nuts and bolts industry with clearly defined vendors. (*Data Interchange* is a controlled circulation magazine sent free to qualified subscribers; it has an initial distribution of 10,000 copies.) *Data Interchange*, 21 Hilltop Circle, Brookside, NJ 07926; 201/543-4762.

The other new magazine is *EDI World*, a monthly launched last October by Richard D'Alessandro -- who also publishes *P & IM Review*. According to Editor Ray Feldman: "We are concentrating on the practical -- not technical -- aspects of electronic data interchange." Unfortunately, like *Data Interchange*, the well-produced *EDI World* is experiencing similar difficulties in obtaining advertising support. The February issue contains less than half a dozen vendor advertisers. *EDI World*, 2021 Coolidge St., Hollywood, FL 33020; 305/925-5900.

It's going to be tough for such publications to broaden their EDI qualified-reader base to meaningful numbers and to convince advertisers to invest their promotional dollars. On the other hand, EDI is viewed as an expanding technology that crosses almost all industry lines. At this early stage of EDI's development, the steep learning curve calls for more education and information.

We wish both publishers success in their ventures.

During the next few months....

....ANSI Standard MH10.8 -- "Bar Code Symbols on Unit Loads and Transport Packages" -- will be going through its final review. If you have anything to contribute, note the following dates:

June 6-7:	Committee meets in Tysons Corner, VA to "review document from cover to cover."
Sept. 3:	Final comments are due.
Sept. 25-26 :	Meeting in Atlanta to "prepare...document for SBC-8 ballot."

To attend meetings, or to record your comments on this very important specification, contact Chairman Gary Ahlquist (716/477-1370); or Vice-Chairman Allan Gilligan (908/870-7023).

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