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<u>To gain additional perspective</u>....

....on SCAN-TECH 90, and what it portends for the years ahead, we used this
past month to reflect on the following ideas about the major industry trends to
watch in the near future:

1. After living together, on a trial basis for the past few years, bar coding
    and RF-communications have decided to get married. These two technologies
    were helped in their decision by the advent of the spread-spectrum type
    of RF systems: no more wires; no need for on-site FCC licensing or
    supervision; minimum problems with radio interference; relatively low-cost
    hardware; and simple installation into existing facilities.

    Although most of the current news is being made by the "wireless stores"
    (which have opened up vast opportunities in retail operations), the
    possibilities for manufacturing, warehousing and distribution applications
    are equally exciting. The leading auto ID companies -- Intermec,
    Symbol/MSI and Telxon -- are already out there offering such systems, and
    we predict that they will be fairly commonplace by next year's SCAN-TECH
    in Dallas.

2. More and more bar-coded information will be packed into smaller and smaller
    "real estate" as the various technologies improve. This development
    will come about as a result of a number of factors: printers which can
    hold tolerances on narrower bars; scanners which will read and decode
    reduced-size symbols at greater distances; two-dimensional symbologies to
    provide enough on-label information to uncouple systems from dependency on
    host computers; software to piece together total information from bits and
    pieces of successful scans.

3. This is no longer a market-driven industry. Automatic identification was
    created, to a large extent, to meet the demands of its customers -- who
    were way out in front of the technology. Retailers, government agencies
    and automobile manufacturers actually adopted auto ID before the components
    were available to implement the system. Those heady days are gone.

    The next stage for new development will probably evolve as a partnership
    between the vendors and users. They will team up to recognize where the
    needs exist and to create the components and the systems to meet those
    needs. Some of this progress will come out of the users groups, which are

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becoming so popular; in the laboratories, R&D scientists and technicians will have to maintain closer ties with their markets; sales and marketing staffs will require greater professional and technical skills to translate customer needs into available products.

4. Meanwhile, as these new developments emerge, it will be the bread-and-butter business that will pay the bills. Although government and point-of-sale retail applications appear to be approaching a level of market maturity, other _proven_ applications have barely scratched the surface and could provide substantial growth through the next decade.

    Consider the possibilities in manufacturing (work-in-process, personnel, tool control, shipping/receiving, material management), route accounting, order fulfillment, school security, publisher's return-processing, transportation and many other established applications that are already up and running on a successful and profitable basis.

Which brings us to the final point of this essay. A lead article on the front page of _The New York Times_ last week (October 29, 1990) described the widespread employee lay-offs taking place throughout American industry in _anticipation_ of "hard times." The article cited an "outburst of corporate preventive medicine" in reaction to actual or anticipated reductions in sales and earnings. (On the other hand, some economists suggest that such retrenchments could increase the odds of a steep recession -- for example, Stephen Roach of Morgan Stanley & Company maintains: "Preemptive lay-offs can be self-fulfilling.")

But the paragraph which really caught our eye was the comment from Martin N. Bailey, a senior fellow and productivity expert at the Brookings Institution, who stated: "Recessions have become a good opportunity to improve productivity, often by dropping people and putting in automated equipment." Just such concerns about productivity have been cited in lay-off announcements this month by Nordstrom, GE, Saks Fifth Avenue and Burger King, among others.

That productivity opportunity, it seems to us, represents a real challenge to the automatic identification industry. In the final analysis, most of what auto ID does can also be done manually, albeit slower, with less accuracy and with much more effort. That's what defines productivity, and vendors should be actively selling the virtues of this technology in this tough economic climate.

In its reply....

....to the Spectra-Physics suit filed on September 27, 1990 (_SCAN_ Oct 90), Symbol Technologies, as expected, characterized the action as "without merit" and sought dismissal.

This battle now also includes a public exchange of charges that seems more intent on influencing the marketplace than the courts. Along with its move for dismissal, Symbol issued a public rebuttal to the Spectra suit. In that announcement, Symbol described how it sued Spectra in 1985, as a result of which "Spectra-Physics was enjoined from infringing Symbol's hand-held laser scanner patents by a Federal Court in California." At that same time, Spectra was granted a "limited patent license" by Symbol. The public statement went on to say that Opticon subsequently infringed on those same patents (as determined by a New York Court in 1990). And now, Spectra has acquired a license from

Opticon to manufacture the Opticon hand-held laser reader under the limited license it obtained from Symbol.

Symbol's Chairman, Jerome Swartz, characterizes Spectra's action this way: "Spectra-Physics is apparently concerned that its Opticon-designed scanner is not covered by its limited license with Symbol, and their action appears to seek a declaration that it is covered."

COMMENT

Cutting through the jargon and legalese, it seems to us that it all boils down to this:

Given that....

1. *Spectra does have a valid "limited license" to manufacture hand-held laser scanners under Symbol's patents; and....*

2. *Opticon's hand-held unit did violate those same Symbol patents which a Federal Court ruled to be valid and enforceable;*

Then...

3. *Why is Spectra concerned enough to sue its licensor (Symbol) without reviewing the matter with them first, and....*

4. *Why did Spectra throw in the part about "unfair competition", "customer intimidation" and "restraint of trade" which are most difficult to prove under the best of circumstances?*

Who said that this is a litigious society?

He may have been somewhat disappointed ....

....when Symbol/MSI received the go-ahead from K mart to install their Spectrum One "wireless store" system (*SCAN* Oct 90), but Telxon President Ray Meyo does not feel that his company is out of the running. "Admittedly, Symbol is the front runner right now," Meyo told *SCAN*, "but, by no means, have we given up our efforts to compete for this important account."

Meyo also clarified one item in last month's report on these pages. He stated that Telxon's total sales of equipment to K mart (for in-store operations) has been only $250,000 over the past four years -- even though Telxon has been actively pursuing the giant retailer's business during that period of time.

> [This was in response to our statement, last month, that Telxon "has been one of K mart's major suppliers of portable terminals." The primary vendor of the hand-held units has actually been Norand, which has sold portables to K mart for all of their stores.]

Meyo also reported that Telxon just completed its 14th annual Users' Meeting (in Las Vegas). There were 400 attendees -- from 300 user companies and VARs -- who came from 26 countries. According to Meyo, the companies in this group "represent an impressive $450 billion in annual sales." Telxon used this meeting to premiere its "new technology for the 1990's."

With all the talk....

.....about the two-dimensional symbologies (a/k/a "stacked" or mega-density codes), it is still too early to pick a winner among the many offerings.

At SCAN-TECH 90 last month, we stopped to chat at the Softstrip booth. (Once known as Cauzin, the company changed its name to Softstrip to be more closely identified with its product.) Although not actually a bar code, the Softstrip development was probably the first 2-D, high-density "data carrier" -- and probably remains the highest-density code available today. But the Softstrip code still doesn't seem to be generating too much interest and we wondered why, and whether anything could be learned from this company's experience.

There seem to be three major obstacles to the item's success :

- Softstrip is a proprietary product and many users tend to be scared off by systems that are locked into one vendor.

- The Softstrip symbol can only be read using a Softstrip reader. Although fairly inexpensive (from about $200 to $400 each), these units only read Softstrip and not any other bar codes in a mixed environment.

- The company does not offer any other products and does not have a customer base in this industry, and is thus viewed as pushing in from the outside.

There are six other recognized 2-D symbologies. Code 49, the first true stacked bar code, was invented by David Allais and introduced by Intermec three years ago.

Code 16K, shown a year later at SCAN-TECH 88, was developed by Laserlight's Ted Williams as a simpler, more versatile symbol that was specifically intended to replace Code 49.

Codablock, by ICS of Germany, stacks Code 39 bar codes (with unique row identifiers at the beginning and end of each line) and can be printed and scanned using standard off-the-shelf hardware.

PDF 417 (PDF = Portable Data File) from Symbol Technologies, is the most recent entry into the high-density bar code sweepstakes. Symbol's claims for its version include more information into less space than Codes 49 or 16K, but not as much as other high-density products of the dot matrix type. (These latter codes include I.D. Matrix and Veritec.)

The problem just now is that all seven of these excellent products represent capabilities in search of a market. Although there is talk about a large potential in such applications as health care, electronics and special government projects, there are few success stories, so far, to point the way.

The betting, among some industry-watchers we've spoken with, is that Symbol's PDF 417 will emerge as the front-runner from among this group. This forecast does not necessarily infer that this symbology is the "best" (whatever that may mean in terms of actual use). It is simply a conclusion that is based on the prestige, clout and market-reach of its sponsor, and the prediction that these realities may ultimately make PDF 417 the symbol of choice.

These two-dimensional symbologies represent a significant industry leap forward opening up possible new types of systems and applications that will employ their enhanced data content. Their acceptance will take additional time and both marketing and engineering smarts to develop successfully.

"Ossified and uncompetitive"....

....was the way *The Wall Street Journal* characterized the economies of Czechoslovakia, Hungary and Poland a few months ago (June 5, 1990).

In discussing the continued dependency on the USSR, by these newly-liberated Eastern Bloc countries, reporter Karen Elliott House described the difficulties they are encountering in their efforts to break away. The Soviets, she reports, are still willing to barter their raw materials for "frequently shoddy goods made by unmotivated workers in antiquated factories." Or, as Peter Bod, economic advisor to Hungary's new Prime Minister was quoted as saying: "We trade our stray dog for their blind cat."

What, then, prompts these governments to rush toward automatic identification which, after all, is not an obvious priority for a nation seeking the shortest route to capitalism from the current difficult state of their economies?

> [Note: As a benchmark -- and to place some of Eastern Europe's goals
> in perspective -- under Mrs. Thatcher, the UK has privatised 10% of its
> state-owned enterprises in 10 years. The Eastern Bloc countries consider
> that they have to change 50% to 70% in 5 years.]

These thoughts came to mind when we visited Poland on September 24-25 to participate in SCAN-POLAND, the first-ever auto ID show in that country. SCAN-POLAND was hosted by CKK (Centrum Kodow Krestkowych), the Polish EAN coding authority, and was held at the CKK headquarters on the outskirts of Poznan, a city midway between Warsaw and Berlin. Almost 200 delegates attended the conference, representing universities, research bodies, computing centers (not yet software houses) and various industries, including food processing, chemicals, packaging, electronics, automotive, photographic and wholesale.

Nine companies, including some which are joint ventures with Polish businesses, exhibited their wares: Apog Poland/Polnet Technologies, BCS Bar Code Systems Ltd., Data Scan PL, Opticon Sensor Europe, Recognita, Sato Europe, Symbol/MSI, Tormic R&D, and Telxon.

When Poland joined the EAN system in March 1990, it was primarily to provide a coding authority for those companies exporting consumer products to the West. So far, however, fewer than 100 EAN manufacturer numbers have been assigned. Attendance at SCAN-POLAND demonstrated an interest in applications of scanning technology beyond EAN, but there seems to be little current opportunity for their immediate use.

Poland is a poor country. In 1987, its per capita GDP (roughly equivalent to the US Gross National Product - GNP) was $1,413. It appears -- at least in Poznan -- less prosperous than Hungary [based on our impressions at SCAN-HUNGARY (*SCAN* June 90)] with fewer luxury cars, cheaper hotels, lower prices and less choice in the stores. The smallest coin is the ten-Zloty with approximately 10,000 Zloties to the US dollar. A hot dog costs 22 cents, a medium-sized Samsung television is $460.

Due to its proximity to Berlin, Poznan has a thriving "sidewalk" market. (This trade is not referred to as a "black market" because all the selling is presumably legitimate, even though it presents unfair competition to the established retailers.) The street vendors travel to Berlin, stock up, and then return to Poland to sell their wares at a substantial mark-up.

Given this somewhat bleak picture of a struggling economy, Poland, surprisingly, seems to have money to spend on auto ID technology, mainly for bar coding. Much of the initial funding will come from grants from the European Community, which, we are given to understand, will be allocating funds to the Eastern European nations to help modernize their production plants.

Our final impressions were that the Polish people face a difficult dilemma. Should they be exploring auto ID and investing in it when there may be other projects with more immediate returns? If the investments are wisely made, the answer may very well turn out to be "yes," since the technology may actually help Poland to accelerate to a more efficient economy.

Poland has a population of nearly 40 million -- the largest Comecon country outside the Soviet Union. In the long term, that level of population can support a significant expenditure in auto ID equipment and systems. The Western European, American and Japanese vendors, however, must approach the market sensibly. They need to plant seeds now -- and be prepared to wait.

One of the hallmarks ....

....of those individuals who have received the annual *Scan Newsletter* Awards in the past, has been their ability to combine success within the organizations that pay their salaries with significant unpaid contributions of their time to the entire industry. This year's recipient of the Scan European Industry Achievement Award is an outstanding example of that level of performance.

John Cribb was the first employee of UK-based Telxon Ltd. He started the company, according to his corporate biography, in April 1982, by working out of his home (using the dining room table as his office). A few months later, he moved to new offices and, within two years, his division was profitable -- as it has remained ever since. Today Cribb is Senior Vice President-International Operations, of the parent Telxon Corporation, with responsibilities for worldwide operations (except for North America and Australia).

Along the way, however, John Cribb has left an indelible mark on the industry's trade organization. He is the only individual to have held the top positions at three levels of AIM: as Chairman of AIM/UK (two years); as Chairman of AIM/Europe (one year); and currently, as Chairman of AIM-International.

John Cribb has played an integral role in the growth of the AIM organizations, which now total over 600 companies worldwide. He has helped that organization to achieve the stature which has unified the industry. He joins the roster of the distinguished recipients of this award which includes Albert Heijn, Paul Berge, Mark Marriott, Brent Jones and Peter Glattfelder.

This *Scan Newsletter* special award will be presented at SCAN-TECH Europe in Frankfurt on November 9. John Cribb is a most worthy selection for 1990.

In a significant move....

....designed to improve the attraction of its automatic identification conference, the sponsors of ID Expo have decided to lock into the Chicago area for the immediate future. Starting with its May 14-16, 1991 event, the show will be located for three consecutive years -- through 1993 -- at the O'Hare Exposition Center.

ID Expo is sponsored by *ID Systems* magazine and managed by the Expocon Management Associates. For the coming year (the show's sixth outing) Expocon has planned to increase its promotion activities to bring in more exhibitors and visitors.

The concept of fixing a show's venue in one location has been repeatedly studied by AIM for its annual SCAN-TECH convention. The idea has always been rejected because, according to AIM's Executive Director, Bill Hakanson: "We feel that education is our primary objective and we can reach more people, over a period of time in the regional markets, if we continue to move the show around."

> [In 1991, SCAN-TECH will return to Dallas -- where it all began in 1982 -- for its 10th convention. This will be followed by Anaheim ('92), St. Louis ('93) and Chicago's McCormick Place ('94). That schedule means that SCAN-TECH will have played 13 performances in 11 different cities -- with repeat presentations only in Dallas and Chicago.]

It's a tough call as to which of the two strategies is better for show managers, exhibitors and attendees. Analyses of visitors generally indicate that those who invest the time and expense to participate in the 3-day seminar programs will travel cross-country to be there. On the other hand, fully half of the "show-only" attendees come from within a 150-mile radius.

AIM's theory, according to Hakanson, is that the show-only people are "more casual and geographically dependent" and have to be sought out. "It is from among these individuals, however," he maintains, "that we find those who become committed to the technology and sign up for the seminars a year or two later."

Expocon's demographics point to the heavy concentration of American industry -- auto ID's primary market -- within easy commute of the Chicago hub. They do not believe that repeat performances will saturate that region during the next three years; rather, they expect that ID Expo will be larger, more stimulating and more productive than ever before.

There is no question but that both SCAN-TECH and ID Expo will continue to grow more successfully each year. At the 1990 show last Spring, Expocon reported that 96% of the exhibitors renewed their commitment for next year "on the spot." Similarly, last month, at SCAN-TECH's drawing for 1991 exhibit space, the front-end commitment almost equalled the total area taken up by the Atlanta show -- with 12 months of promotion still ahead.

COMMENT

> *Although we are inclined to prefer the AIM approach of spreading the word as far and wide as possible, we are not among the exhibitors at these*

*shows who make the substantial investments intending to reach as many
potential customers as possible.*

*Maybe, inadvertently, the industry has backed into the best solution
of all. Since a large portion of the exhibitors work both shows, the
combination, each year, of once in Chicago and once out in the regions may
wind up providing the industry with the best of both worlds.*

What a great partnership!

Education about auto ID....

....can take many forms as was illustrated, this past month, in a full-page ad
that ran in *The New York Times* and *Wall Street Journal* (at least twice in each
paper). Under a very prominent UPC bar code symbol, the headline read:

"Who made the world think along these lines?"

The answer was "<u>P</u>olytechnic <u>U</u>niversity <u>P</u>eople." The ads featured a photo
of <u>Jerome Swartz</u>, Chairman of Symbol Technologies, who was singled out as an
example of a successful and distinguished Polytech alumnus. (The copy was
a bit effusive -- attributing to Swartz the "insights and ability to 'read
between the lines' [which] led to the computer technology that now has the
world thinking along the universal lines of bar coding.") Nevertheless,
the promotion provided good publicity for bar coding while highlighting the
importance of a technological education.

Swartz has been helping to recruit new students for the University, which
offers undergraduate and postgraduate courses in engineering, arts and sciences
and business management at its three campuses in the New York City metropolitan
area.

We continue to be impressed....

....with the quality of the editorial content of <u>EDI</u> <u>Forum</u>, the *Journal of
Electronic Data Interchange* (*SCAN* May 90).

The 1990 issue just arrived and it sustains its mission of presenting an
analytic perspective of EDI activities and providing a source of information
on EDI for business managers. This publication also serves as a forum for
discussion about EDI's future and alerts users to the global opportunities for
this technology.

The 150-page edition contains about 25 "thought pieces" grouped into chapters
headed: ● The State of EDI ● The State of EFT and EDI ● EDI User
Perspectives ● The History of EDI ● EDI Standards ● EDI Vendor Viewpoints
● EDI Global Insights ● EDI Book Reviews.

Our congratulations once more to publisher Daniel Ferguson and editor Ned Hill.
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