Volume I Number 5   January 1978

Welcome to 1978....

....and what promises to be a very significant year in the development of bar-code scanning installations and applications. Some of the more notable projections that will be covered in this, and later, issues:

Item: After 4 years of a careful relationship, supermarkets and UPC have passed the 200-store installation mark and may triple that count by the end of 1978.

Item: EAN -- Europe's version of UPC -- is just coming out of its administrative start-up phase, and a number of countries are scheduled to see front-end scanning stores installed this coming year.

Item: New hardware, to make UPC installations less expensive, should broaden the base of retailers who can realize the benefits of front-end automation.

Item: Commercial/industrial applications of bar-code scanning will move ahead rapidly with large system installations such as the U.S. Postal Service and Western Electric providing higher visibility.

Item: The U.S. Department of Defense will be passing significant milestones on the road to its enormously complex requirements for automated marking and reading of symbols.

Item: The use of a readable bar-code on shipping containers should have a set of standards and the various industry approvals needed to get started.

Item: There will be new hardware entries from both small and large manufacturing companies who recognize the coming potential of commercial/industrial applications of bar-code scanning.

As with all major emerging technologies, the first few years have been devoted to experimentation and evaluation. The lines now seem to be drawn for a very rapid expansion in the marketplace.

Stay with us!

Every industry can point to its "pioneers"....

....and, when reviewing the history of UPC, Tom Wilson of McKinsey and Co. must be considered one of the prime candidates for that title. McKinsey has been continuously retained by the grocery industry, since 1970, to perform a broad range of consulting services which have profoundly affected the course of UPC since its inception.

The initial McKinsey study in 1971 provided the statistical basis that was necessary to determine the type of system, code and symbol that would be used. From that time forward Tom Wilson, as McKinsey's representative, has worked closely with the Uniform Product Code Council (UPCC), the various STAC committees and Distribution Codes, Inc. (DCI) to keep the implementation program on a steady course. He has also been one of the major contact points for the various European Article Number organizations which have closely monitored the progress of UPC.

We reviewed much of this, as well as the current status of UPC, with Wilson at a recent meeting. The 12/31/77 cancellation of the DCI contract as UPC administrators had many people surprised and confused, and looking for sinister implications. Wilson states it was simply an economic decision. The UPCC contract with DCI for the past 5 years has cost from $250,000 to $600,000 per year at a time when the enormous workload to administer the code required an independent organization. Now that DCI is running out of things to do, with fewer manufacturer's numbers being issued and fewer technical questions to be answered, the UPCC felt the job could be handled by a much smaller in-house staff. Robert Mindlin, plus a probable staff of one, will now be employees of UPCC running a modest office in Dayton, Ohio.

As for the future of UPC, Wilson is very optimistic. By his estimates, there are 12 to 15 thousand stores in the U.S. -- with greater than $80,000 per week sales volume -- which he considers prime candidates for front-end scanners (at today's price levels for hardware). As a working number, he assumes 50% of these stores will actually install scanning. He also ventures the informed guess that from 200 stores at the end of 1977, the number will grow to 600 by the end of 1978, and that the rate of installation will be increasing annually thereafter. Many of these will be upgraded from current ECR equipment, but since 75% of the expense is still in the scanners and controllers, there will be many installations starting from scratch.

Interestingly, a recent analysis by Wilson indicates that there are probably 2,000 companies who supply supermarkets that have not yet obtained their UPC manufacturer's numbers. (The current count of registered companies is 5500). This includes 1500 grocery plus hundreds of general merchandise suppliers. The continuing Nielsen study shows 75% of the items are symbol-marked, but the study is selective in the categories surveyed and is not reflective of the total number of individual products in the stores. (By the way, Nielsen performed this study on their own and had supplied the information to the industry at no charge.)

The use of the Distribution Symbol on shipping containers was discussed. Wilson is very supportive of the Distribution Symbology Study Group and their efforts to establish a set of standards for printable, scannable symbols. He fully expects the grocery industry to adopt the Distribution Symbol -- the one sponsored by DCI over the past 2 years -- since it conforms to UPC coding and could be readily implemented by suppliers to supermarkets.

A fairly sensitive topic that was reviewed was the attitude of the supermarket operators to supplying product movement data to the manufacturers. Services such as Nielsen, SAMI and other research/auditing companies, have been permitted access to store shelves, in the past, in return for a nominal fee. (One major exception is Safeway, which never releases any of this type of information, and is not expected to in the future, UPC or no UPC.) UPC-generated data will be much more accurate and timely and under the complete control of the retailers. Will they make them freely available to the manufacturers, and their research agents, who will almost certainly be competing soon to get this data? Wilson believes the supermarket operators tacitly agreed to supply the data, at no profit, as part of the incentive promised to the manufacturers to enlist their early support in the entire program. In any case, he does not believe the potential dollar return would be sufficient to cause the supermarkets to get greedy.

There are currently 5 major equipment suppliers....

....of UPC scanning systems to the supermarkets. Based on the Food Market Institute's November 1977 listing of installations, the breakdown, by years, looks like this:

By Number of Stores

	1974	1975	1976	1977	Total
Datachecker	0	1	6	14	21
IBM	4	18	43	40	105
NCR	1	6	13	36	56
Sweda	1	0	0	5	6
Univac	0	2	2	3	7
TOTAL	6	27	64	98	195

Share of Market %

	1974	1975	1976	1977	Total
Datachecker	0.0%	3.7%	9.4%	14.3%	10.8%
IBM	66.7	66.7	67.2	40.8	53.6
NCR	16.6	22.2	20.3	36.7	28.7
Sweda	16.6	0.0	0.0	5.1	3.1
Univac	0.0	7.4	3.1	3.1	3.6
TOTAL	100.0	100.0	100.0	100.0	100.0

Although the numbers are still too small to establish real significance (and 1978 estimates are not available) the 1977 statistics indicate a head-to-head battle has already developed between IBM and NCR. NCR showed a substantial gain in market share, and National Semi-Conductor's Datachecker placed a respectable third, while the number of IBM installations actually decreased.

Some very sizeable orders have been announced, such as Giant Food with IBM and Red Owl with Datachecker, and all of this will bear watching during the coming year. There are even rumors that IBM is "sold out" for 1977. They have yet to expand production capability of all components and may be waiting for the sales trend here and in Europe to be confirmed over a longer period of time.

And here comes Data Terminal Systems....

....entering the battle -- but with a different point of view. DTS has in-stalled 50,000 of their electronic cash registers -- second only to NCR -- so they are no newcomers to this industry. DTS announced in November that it was entering the scanning market, and had placed an order for 5,000 scanner units. SCAN has learned that these units will be purchased from Spectra Physics, who are manufacturers and suppliers of scanners which they also supply on an OEM basis to other equipment manufacturers.

The DTS Model 540 SCAN-A-LONE is a fully self-sustaining unit for each check out lane and its computer has a capacity for 15,000 line items. The system assumes that one data file can service up to 4 lanes. Typically a 10-lane store will use 4 data files at a total cost of $90,000, considerably less than the $125,000 to $150,000 cost of other systems. DTS expects to increase the data file capacity to 30,000 line items within a year.

The key to the DTS market strategy is not just the lower cost for a large store, but the availability, on a modular basis, to the smaller stores. The system does not require an in-store host computer for it to function in a checkout mode, although the daily information from each checkstand must be fed to a central computer for consolidation of the data for other uses.

Herb Kutzman, Marketing Manager, advises that the first test installation of the Scan-A-Lone is scheduled for the Boston area during the second quarter of 1978. Marketing plans and sales projections are dependent on an evaluation of the performance of the first system, which will probably last at least till the end of the year.

Why this early announcement, therefore, if the equipment has not even been field-tested? DTS seems to be borrowing a leaf from tactics IBM has been accused of using in the computer field. Announce early to delay the purchase decisions of as many customers as possible! Kutzman believes that many of the purchases announced by the supermarkets are merely letters of intent. DTS hopes that the promise of a new, "dramatic and revolutionary" system, which is claimed to provide a savings of up to $50,000 over a 10-year period, may delay fulfillment of many procurements.

The Scan-A-Lone will be demonstrated at the NRMA convention at the N.Y. Hilton on January 8-11.

The European Article Numbering System....

....Ad Hoc Council has completed the major task of coordinating the efforts of the individual EAN member countries.

When UPC was started in the U.S. and Canada it was necessary to meld the needs and capabilities of 5 separate industry groups: supermarkets, manufacturers, scanner producers, printer/converters and film master suppliers. EAN's prob-lems were compounded by having to accommodate 12 member countries to a common code, symbol and specification. It was done early in 1977 and the following is an update on the best information we can obtain of how each of the countries is progressing at this early stage.

Austria and Belgium - Coding authorities have been established but there is

no sign of activity as yet.

Denmark - An early starter with one store - IRMA - equipped for scanning with
NCR equipment early in 1977. IRMA is 90% private label merchandise so
product marking was totally under the control of the retailer. Almost all
symbols were affixed with in-store labels. Denmark has established a
coding authority to issue manufacturer's numbers.

Finland & Norway - No coding authorities have been established as yet, but IBM
is rumored to have a committed customer in Finland.

France - The Gencod organization is well established, specification manuals have
been issued in French and some products are beginning to appear source-marked.
No store commitments to scanners have been announced as yet.

Germany - Probably the most advanced into the system. The coding suthority --
CCG -- has issued manufacturer's numbers to over 300 companies, specifica-
tions are available in German, educational seminars are being conducted and
at least 2 supermarket chains have committed to scanners. Doderer and BLD
have one IBM-equipped store each and 3 additional scheduled. About a dozen
of the leading manufacturers are source printing the EAN symbol on a repre-
sentative group of their products.

Great Britain - Following an informational meeting in Jan. 1977, Britain has
been exploring alternatives and trying to get some changes made in the
specifications. The official launching of ANA -- Britain's coding authority --
is scheduled for Jan. 26, 1978. Manufacturers' numbers will be issued there-
after. No commitment to scanners has been announced by any supermarket as yet.

Italy - Although there is no coding authority, and manufacturers have not yet
become involved, three IBM-equipped stores are in various stages of start-up.
PAM has two; COOP has one. All are planning in-store labelling of the
symbols in the early stages.

Netherlands - The first scanners in Europe were an IBM installation by Albert
Heijn. Heinj himself has headed up the EAN Ad Hoc Council and has strongly
influenced the development of the system. Two more Heijn stores are
scheduled soon -- one each by Sweda and IBM. Netherlands has a coding
authority, is conducting seminars and will issue the specifications in Dutch
soon.

Sweden - A coding authority is in place and at least one supermarket -- IKEA --
is scheduled for scanner operation shortly.

Switzerland - Spearheaded by Nestle, the Swiss coding authority has 60 members
and has started issuing manufacturers' numbers. Although no scanner instal-
lations are expected before 1979, manufacturers are being actively solicited
to begin source-marking their products as soon as possible.

Some other general items about EAN:

-- Most countries seem to be adopting a policy of charging manufacturers an
annual fee for their manufacturer's numbers, in addition to a nominal
initial charge. Special numbers with 2 trailing zeros, which can be used
with the 8-digit version, are charged a premium rate.

-- There are signs of a few companies trying to make Film Masters, but
with only limited success so far. There will be marketing efforts by
U.S. companies to sell Film Masters and verification equipment.

-- Nixdorff, the only European supplier of front-end scanning equipment,
has been moving slowly and has allowed the more aggressive IBM, NCR and
Sweda to get the jump on the market.

-- Spain and Portugal are considering applications to join EAN and increase
the number to 14.

Information Products Systems, Inc. introduces Print-A-Bar....

....a hardware package which will allow IBM 360/370 computer users to attach
low cost label printers to the IBM computers. The Houston company states that
the new printer controller, priced at $15,789, converts IBM's EBCDIC character
records to coded graphics for bar code printers. The bar codes currently sup-
ported are UPC, Plessey and Monarch Codabar. The equipment is capable of
printing 200 to 300 labels per minute.

The cancellation of their UPC contract....

....has forced Distribution Codes, Inc. to reduce their operation and redirect
their energies, but they plan to remain an active viable company.

Contrary to what many believe, DCI, wholly owned by the National Association of
Wholesalers, is a "for profit" corporation. It is charged with the administra-
tion of the Distribution Code for the various organizations of the NAW which
comprise 104 commodity groups. Although UPC was its largest and most visible
operation, the company will continue to function in a number of areas.

In a late December interview, Leo Beinhorn described the ongoing activities of
DCI as follows:

1. To issue manufacturers' numbers for the Distribution Code to various indus-
tries such as electrical, plumbing, electronics, heating & air conditioning
and office products. Although this Code represents a common numbering
system, these industries have not adopted any symbology as yet. As struc-
tured, the Distribution Code is fully compatible with UPC, EAN, DCI, HRI,
et al.

2. To perform consulting services to various government agencies and private
companies. DCI has just completed a study for the National Center for
Productivity & Quality of Working Life, and is working on one for the office
products industry.

3. To continue active involvement with codes and symbols in all NAW-related
industries other than for grocery, where its contract was cancelled.

4. To administer the Distribution Symbol, when and if it is adopted by any
industries. DCI wrote and issued the specifications for the D/S, but was
stopped from pursuing the Trademark or Patent protection it wanted. The
D/S is now in the public domain, but DCI expects to be the administrators
of the symbol in the future. They are now working with the Distribution

Symbology Study Group, whose work is crucial to the adoption of any code, such as the D/S, for shipping containers.

5. To interface with the Distribution Research & Education Foundation (DREF), another NAW organization. DCI will continue as secretary to DREF.

Although John Langan, Director of Systems Development, is leaving DCI, Beinhorn states the rest of the management team will remain intact. Code & Symbol magazine, a DCI publication that was never a roaring success, was discontinued in September 1977. The DCI Action Advisory, announced in August 1977, never really got off the ground.

> *COMMENT*
>
> *We have had our differences with DCI, during the past few years, over many issues. There were many arguable questions when UPC was first launched, and the handling of the Distribution Symbol left much to be desired.*
>
> *But the fact remains that for 5 years DCI has been the administrator of this radically new concept and has guided its implementation. And by almost any standard UPC is a success and will continue to grow.*
>
> *A significant part of the credit belongs to Distribution Codes, Inc.*

A most optimistic evaluation of UPC....

....was reflected in the special roundup edition of Progressive Grocer, December 1977. Citing consumer and union opposition as the 2 most important factors that have restricted the growth of scanning stores, one article indicates both can be overcome. The consumer must be made aware of the advantages of automated checkout before the opening of scanning stores in any area. Even more important, the Retail Clerks International has pledged not to "promote item price-marking legislation." These 2 factors are closely tied together since it is a not-very-well-kept-secret that it has been the unions which have supported most of the so-called consumer opposition.

Another article in the same issue characterizes UPC as "the most important research tool ever" and goes on to cite some of the results obtained by Tele-Research in their joint research project with Ralphs. Ralphs' President Patrick Collins estimates hard savings of $50,000 per year in a $160,000-a-week store, and says the soft benefits are potentially even greater.

An interim report from LOGMARS....

....the Department of Defense joint steering group for symbol marking and reading, indicates definite progress. They are working on a Master Plan which will break down the total effort into specific "milestones" through December 1979, at which time the final decisions for vendor source-marking on packages will have been made.

LOGMARS has narrowed down the symbols under consideration to four: OCR-A, UPC/DS, Code 39 and Codabar. The ultimate selections will most probably involve two or more symbologies depending on the specific applications and usage. LOG-MARS has established an active dialogue and exchange of information with the

Distribution Symbology Study Group, as well as NRMA and AIM, and the coopera-
tion among these groups should be beneficial to all. It will certainly reduce
any danger of system conflicts and avoid duplication of effort.

LOGMARS also announced that Raymond Luyet has been appointed the new Chairman,
succeeding N. J. DeMars, Sr. who is retiring.

New information for bar-code printing on corrugated....

....emerged from printing tests conducted by TAPPI. The details of these
findings were carried in the November 1977 Paperboard Packaging magazine which
ran a feature story on what they characterized as a "true discovery" and "a
major surprise."

The essence of these findings is that bars printed on corrugated run cleaner,
i.e. with less print gain, across the press than in press direction. These
results occurred using both rubber and photopolymer plates and are, of course,
contrary to what most printers would expect. The results are preliminary --
an "unproved observation" -- and the suggestion was made that further study be
done to substantiate them.

   COMMENT

   Since rubber plates are also widely used in flexo printing on plastic, it
   may be worthwhile for the Flexographic Technical Association to take note,
   and possibly explore these tests further for that part of the industry.

UP$ went from "On Packs" to "Cash UP$"....

....with somewhat better results. After bombing in California with the On Packs
program, UP$ launched Cash UP$ (SCAN Sep 77). This involved customers clipping
coupons from newspaper Sunday Supplement ads and mailing them in with the
corresponding UPC symbols from the package labels. The results seem mixed.
Although a respectable 2% clipped the coupons and started saving the UPC codes,
only 0.5% actually redeemed some portion of the ad.

UP$ sees some positive aspects to these promotions in terms of readership aware-
ness, brand switching and consumer research information, and is continuing its
efforts to market their services. They have a tremendous investment in the
hardware and software they installed to automatically process the coupon returns,
and they are looking for the handle of a successful service to utilize this
facility.

The Automatic Identification Manufacturer's annual meeting....

....was held in Puerto Rico in mid-November. The major piece of business passed,
that is of interest to the industry, is the strong support AIM will continue to
give to LOGMARS and to the Distribution Symbology Study Group. This and the
educational programs of AIM are important efforts to keep all elements of the
industry tied together.