

UPC '72

The Executive Summary Of Timely Information About The Universal Product Code

Issue II — October 10, 1972

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GROCERY INDUSTRY UNIVERSAL PRODUCT CODE

I would like to use this second issue of our industry newsletter to bring you up to date on the progress made since last January by the Ad Hoc Committee on Universal Product Coding (UPC). This committee - of which I am chairman - was formed in mid-1970 to deal with the challenge of achieving productivity savings industry-wide through the use of a standardized code numbering system, or UPC, and automated checkout devices.* Its members, as you can see from the masthead at the left, are executives representing the entire span of the grocery industry - manufacturing, retailing, and wholesaling.

** For those of you who did not see our first newsletter, the UPC is a system for assigning an identification number to every grocery product sold by grocery distributors throughout the United States. The code selected has 10 digits: the first 5 are assigned by a central agency to identify the manufacturer, and the second 5 are assigned by the manufacturer to identify each item in his line. This code will be translated into a standard symbol that can be preprinted on each consumer package by the manufacturer and read by some type of automated checkout machine (if proven economically feasible, this year).*

* Chairman.

In our first year and a half, most of the committee's efforts were devoted to gaining a consensus on the value and feasibility of a UPC, deciding on the composition of the code, setting up an organization to manage the code, and devising an approach for selecting a standard symbol. Building on the success of their efforts, the past 8 months have brought us much closer to implementation. We have the active support of all companies who know of our work, including Canadian companies; store tests are under way to verify the potential savings; and many companies have already taken the first step of converting their records and forms to the code numbering system.

Before I go on to describe some of the highlights of the activities of the individual subcommittees responsible for these results, I want to extend the committee's thanks to Messrs. Bill Kane, Dean Potts, Gordon Ellis, Gavin McBain, and Art Larkin, all of whom served on the Ad Hoc Committee from mid-1970 to the end of 1971. Because of the heavy time demands of active participation, we have to accept the fact that our membership will continue to change, and we are very grateful for the substantial contributions made by these gentlemen. In line with this policy, as you may already know, the committee has gained several new members: Messrs. Alan Haberman of First National Stores, who has recently become their chief executive officer; Ray Wolfe of the Oshawa group in Canada; Bert Thomas of Winn-Dixie; John Suerth of Gerber; and Bob Wegman of Wegman's.

WIDESPREAD SUPPORT FOR THE UPC CONCEPT

During the past year, the members of the Ad Hoc Committee and our consultants, McKinsey & Company, Inc., have taken the UPC story all over the country. We've met in individual sessions and small groups with the top management of over 300 grocery manufacturing and distributor companies and reached several thousand more through trade meetings. At this point, I'm happy to report that every company we've contacted has indicated its support of the Committee's recommendations on implementing the UPC.

Perhaps the best evidence of support for the UPC is the success of our fund raising effort.

Bob Wegman, the chairman of the Fund Raising Subcommittee, reports that we now have 95 percent of our \$1 million budget either pledged or already in the bank. Approximately three-quarters of these funds have come from distributors. The consistently high level of their support is especially gratifying: nearly all of the country's top 20 chains have contributed at a rate of \$20 per million dollars of annual sales.

CODE IMPLEMENTATION BEGINNING

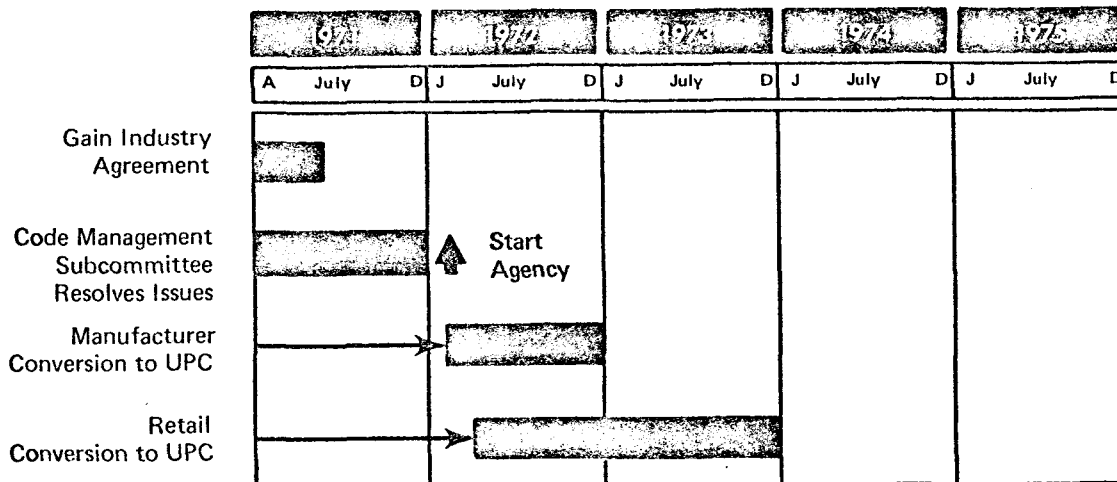
Given the widespread support for the UPC and the advantages of converting to the code numbering system before automated scanning systems are introduced, the Ad Hoc Committee initiated implementation of the UPC in early 1971 by forming the Code Management Subcommittee.

The progress being made toward implementation, in accordance with our timetable shown opposite, is largely the result of the efforts of Bob Stringer's Code Management Subcommittee. Bob and the other members of the committee - Bob Koenig from Super Valu, Jack Strubbe from Kroger, and Tom Nelson from General Mills - have been hard at work for over a year to set up a structure and guidelines for using the 10-digit numbering system. By early 1972, they had created the Uniform Grocery Product Code Council (UGPCC) to supervise the entire effort and act as the contracting party for Distribution Number Bank, Inc. (DNB), who will actually manage the code.

During late 1971 and early 1972, the subcommittee worked with a task force of grocery manufacturers and distributors to develop the guidelines for using the code - e.g., how to decide when a new item number is required, where to use the number on all the paper that travels between manufacturers and distributors. This task force, led by Mrs. Olinda Simon from Nabisco, did an outstanding job of putting together a working draft.

DNB, under the leadership of UGPCC, carried out a major membership drive. Mailings were sent to thousands of grocery companies. At this point, most of our major companies have joined UGPCC. Furthermore, many grocery manufacturers are currently

TARGET TIMETABLE - CODE PORTION



working out their code number problems, changing their shipping cartons to include the UPC number, and modifying invoice and other forms to use the code. And retail companies have already begun to ask for UPC numbers, since they will have a big job incorporating the UPC into authorized procurement lists, purchase orders, and accounts payable procedures, not to mention the task of computer systems conversion they face.

If you were not among the initial group who received applications, call or write to DNB at 1725 K Street NW, Washington, D.C. As a member of UGPCC, you will receive a manufacturer identification number and a copy of the implementation guidelines. Also, members have continuing access to DNB's updating service and an inquiry service to answer any questions that come up as you adjust to using the numbering system.

There are some obvious advantages to joining UGPCC and beginning your conversion early. Manufacturers will have a chance to work out their administrative problems before most distributors

begin to ask for source symbol marked products. Also, as you identify problem areas, you can recommend changes to the industry guidelines as they are refined. The same is true for distributors. In addition, since for a distributor the decision to adopt the UPC numbering system is really separate from the decision to automate your check stands, you can start getting some of the economic benefits of the UPC even if you are reserving judgment on the big automation question.

A QUICK REVIEW OF THE ECONOMICS

The basic reason for the strong support the UPC is getting and its early implementation is, of course, the tremendous savings potential offered by the UPC and subsequent automation. In our first newsletter, I summarized the results of a macroanalysis of the total industry impact of implementing the UPC. This summary, which was based on extensive analyses performed by McKinsey personnel working closely with many manufacturers and distributors, is repeated on the next page.

CODE-SCAN WITH UNIVERSAL PRODUCT CODE			
	QUANTIFIABLE	SOFT	TOTAL
1975 \$ Millions			
Grocery Retailers/Wholesalers	\$488	\$173	
Grocery Manufacturers	0	6	
Gross Savings	\$488	25%/\$ 45	\$533
Grocery Retailers/Wholesalers	\$332	\$ 86	
Grocery Manufacturers	30	0	
Code Management Function	0.3	0	
Gross Costs	\$362	25%/\$ 22	\$384
	Difference Between Savings and Costs		\$149

7,800 Stores Participating
75% Source Symbol Marking - 10-Digit Code

As you can see, we have classified both the savings and the costs as quantifiable, or "hard," and "soft." Hard savings and costs include, for example, checker productivity, price marking and repricing, and misring and mismarking. Soft savings and costs would include direct store delivery control, space allocation, shrink reduction, inventory reduction, coupon misredemption reduction, and reduction of out of stocks. All identifiable costs and savings were annualized and included. After considering many possible scenarios for the mid-1970s, we concluded that total industry savings would exceed incremental costs by more than \$100 million a year before taxes.

For a typical \$40,000 per week store in about 1975, we believe net hard savings of 1 percent to 1.5 percent of sales are possible.

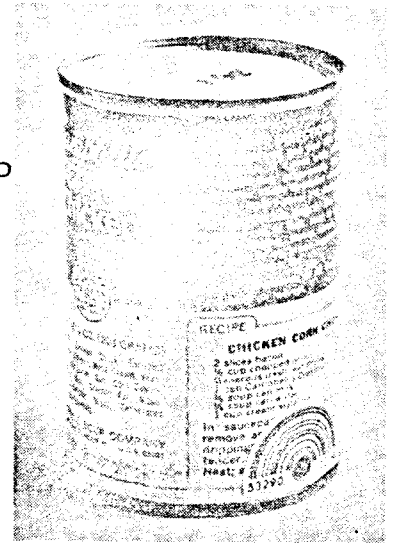
These estimates, which are based on laboratory tests, exclude the soft savings associated with the precise collection of sales data by item. For example, we have excluded the theoretical savings from better shelf allocation or shrink identification by item - all possible when a distributor knows precisely what was sold on an item-for-item basis. These kinds of savings have exceeded quantifiable savings in other parts of our business and in other industries where automation is used effectively. Perhaps we can expect the same results here, but we feel it necessary to significantly discount this type of savings.

Although the initial investment requirements for front-end automation are quite high - ranging from \$75,000 to \$120,000 for a \$40,000 per week

store, the net savings before taxes appear to significantly increase a typical store's current profitability. In other words, the UPC, when supported by agreement on a standard symbol, offers a store the opportunity to nearly double its profits. But it is important to note that these savings can only be achieved if a large percentage of the products sold are marked with the UPC symbol by the manufacturer as in the example shown below.

A SOURCE MARKED PRODUCT

(Example of One Symbol - Decision on Symbol Due 3/31/73)



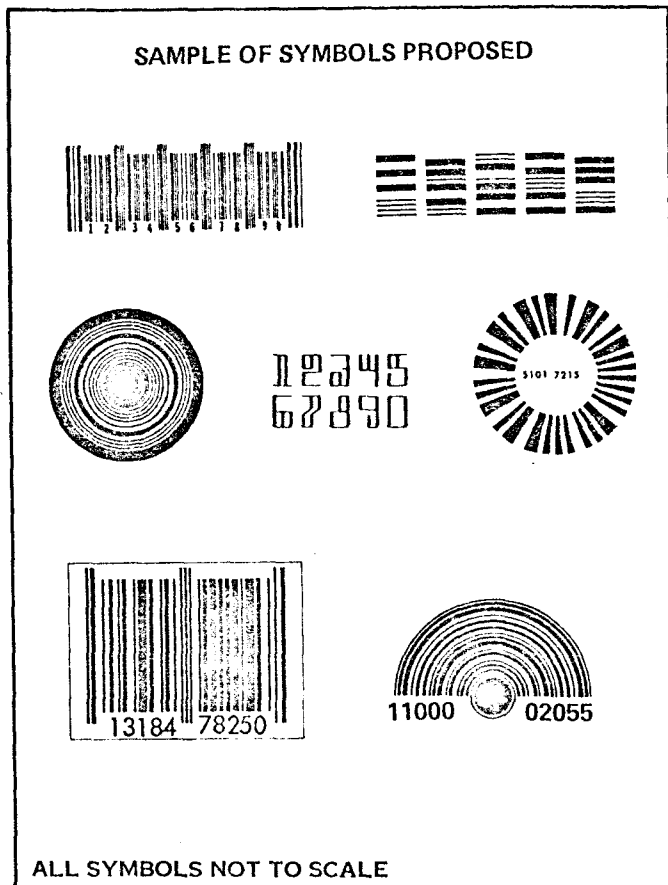
If only 25 percent of our model store's products were marked by the manufacturer, the cost to the store of marking the remaining products would practically wipe out the potential savings, and, thus, the economic motivation to proceed.

Going one step further, if most products are marked at their source, it is essential that they be marked with a standard symbol. This is because most of the automated check stands under development are designed to scan only one symbol. The alternative would be for manufacturers to apply multiple symbols to each consumer package or maintain separate inventories for different distributors, depending on the number of incompatible scan systems in use. This could raise the already substantial cost of source symbol marking (\$30 million in the industry analysis presented earlier) to the point where it exceeded potential industry savings, which would make it impossible for manufacturers to source symbol mark.

THE CHALLENGE: HOW TO SELECT A STANDARD SYMBOL

Thus, the key to maximizing the savings for our industry is the agreement on and use of a standard symbol. This has been an important part of our work in the last few months. Most of the credit for keeping this effort moving goes to Al Haberman's Symbol Standardization Subcommittee. The regular members of Al's committee are Eric Waldbaum of the Greenbelt Consumer Cooperative, Bob Tripp from Winn-Dixie, Barry Franz of Procter & Gamble, John Hayes from H.J. Heinz, Steve Linn from General Foods, and Bill Galt from Del Monte.

Basically, this committee's mission is to verify the estimated industry costs and savings associated with fully operative automated systems at the store level and symbol marking by manufacturers, and to determine which of the various symbols offered by equipment companies, or other possible symbols, would be the best for our industry. The committee spent the last half of 1971 developing guidelines for equipment companies interested in proposing symbols, encouraging as many equipment companies as



possible to get involved, and evolving a test approach that is acceptable to the Ad Hoc Committee and all interested companies.

To assist in evaluating competing symbols, the Symbol Subcommittee invited representatives of all retail organizations planning to participate in the test program to serve as consulting members. At present, the subcommittee has five consulting members: Bernie Brinkman from Kroger, Don Stowbridge from Stop & Shop, Randy Price from Certified of California, Al Falhaber from Acme, and Ken Stapp from El Rancho.

After considerable review, debate, and revision, the subcommittee proposed and got agreement on a Modified Symbol Evaluation Process early this year. This process, which is entirely voluntary, has four main components: a source symbol marking feasibility study, store tests, laboratory tests, and a provision for a white paper proposal. The final date set by the subcommittee to make a decision on the standard symbol and where to apply it on the consumer package is March 30, 1973.

The PIDAS Study

Before moving ahead with any part of the evaluation process, the Symbol Subcommittee had to help ensure that our symbol guideline dealing with minimizing the impact on manufacturers of source symbol marking would be met. As you may recall, the objective of that guideline was to ensure that all symbols proposed for adoption can actually be printed on or applied to existing packages using existing printing methods. To get an idea of the complexity of this problem, just consider the number of different products sold in supermarkets, the number of printing processes currently in use, the number of different materials being printed on, and the number of different coatings and overwraps being applied over the printing.

The subcommittee responded by planning a massive investigation of industry print quality that called for collecting and testing six labels, including all printing processes, substrates, etc., from each of hundreds of different grocery products. McKinsey & Company began work on this task early last May. They had the help of the Graphic Arts Technical Foundation and the use of a special computer-based print analyzer - the Pictorial Information Dissector and Analyzer System (PIDAS) - provided as a service to our industry by the IBM Corporation. All the PIDAS measurements were completed by early June, and the re-

sults were presented first to all interested equipment designers and then to grocery manufacturers and their packaging suppliers in a series of open meetings held this past summer. In addition, the complete report of the PIDAS study was produced to document the results for equipment companies designing symbols for evaluation.

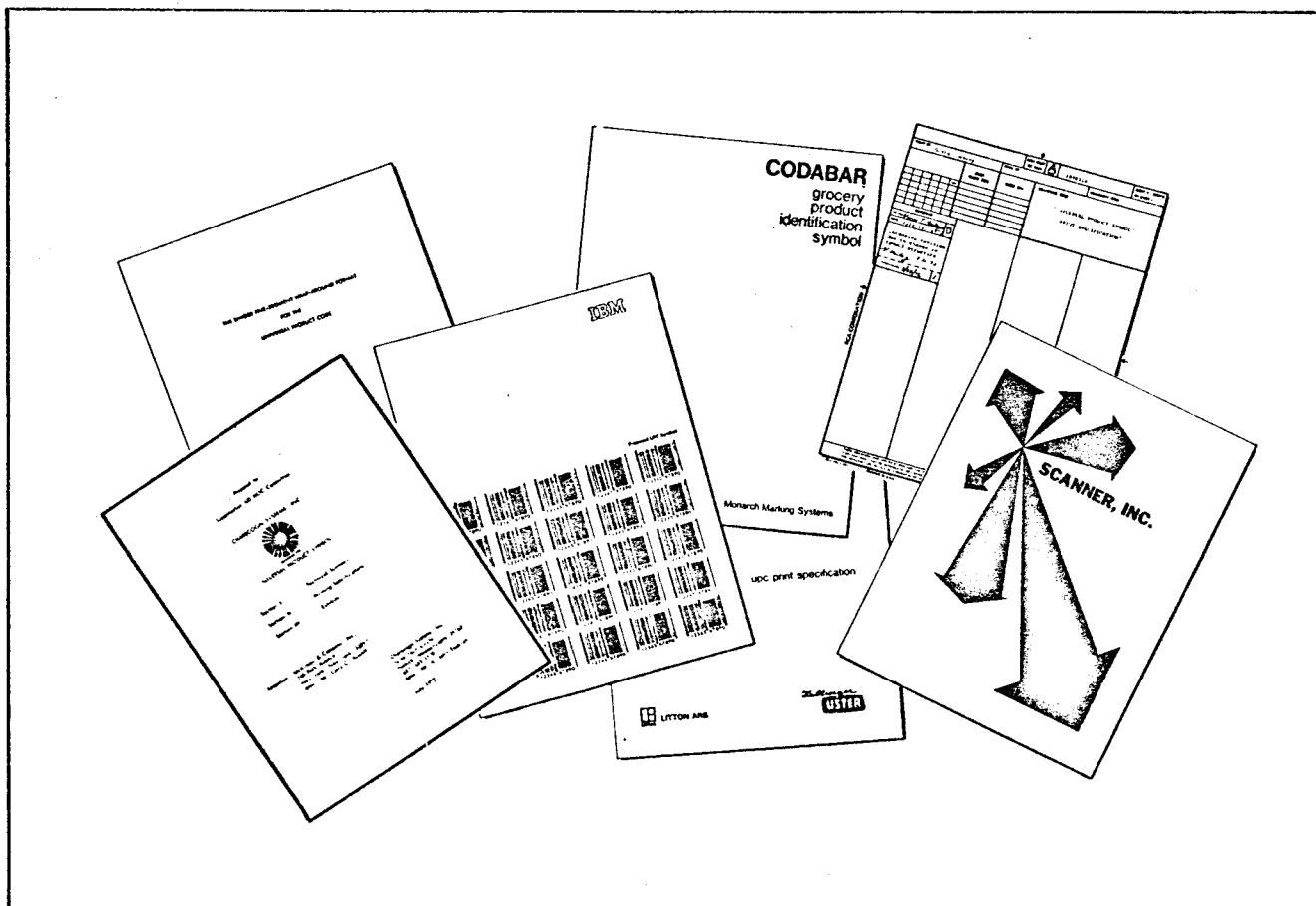
Source Symbol
Marking Feasibility Study

The basic objective of the source symbol marking feasibility study is to provide the Symbol Subcommittee with a reasonable estimate of the cost to manufacturers of marking alternative symbols on the widest possible variety of consumer packages. To participate in this test, each company proposing a symbol provides the committee with a complete printing specification for their symbol. These specifications are then passed on to all participating grocery manufacturers, who will estimate the cost of marking a number of their products according to each specification. In making their estimates, the manufacturers will be able to call on the competing equipment companies for any technical assistance they

need - e.g., to determine what is actually meant by a specified dimensional tolerance.

The first steps in this study have already been taken. Seven equipment companies have delivered their specifications to the Symbol Subcommittee, and several months ago I wrote to hundreds of grocery manufacturing companies inviting them to participate. We have received an outstanding response to this invitation. Over 100 companies have agreed to participate, and some industry segments have even formed task forces to study their particular problems - e.g., the soft drink industry under the auspices of the National Soft Drink Association.

The first part of a 2-part survey has been mailed to each company participating in the study. This questionnaire essentially asks the manufacturer for a list of his products, including volume and package type, so that McKinsey can help decide which products should be used in making the symbol marking cost estimates. The deadline for returning the Part 1 form was August 30. (A late reply will not disqualify a company, but will put it on a tight schedule.) Part 2 has been mailed out to participants and



must be returned no later than November 30 so that work can begin on projecting a total industry cost for each of the competing symbols.

Although this study is well under way, any company that wishes to participate should contact Larry Russell at the New York Office of McKinsey & Company, Inc. (212-687-3600) before October 30.

Store Tests

Each equipment company proposing a symbol is being encouraged to test its symbol in a store that is fairly typical of the type of grocery store that is likely to install an automated check out system - i. e., predominantly a food distributor with a sales pattern that approximates industry averages. The basic procedure is for the equipment company to find a distributor willing to run the test and begin by collecting base case data on hard costs over a period of 3 to 4 weeks - e. g., check out man-hours per dollars checked and number of customers. Then a complete store-level system is installed - including automated check stands, computers, and symbol printers for variable weight items, such as meat and produce, and any other items that must be marked in the store - and the measurements are repeated over a period of at least 2 months. During these tests, symbols are manually applied to nearly every product in the store. This is a very costly substitute for source marked products.

ZELLWEGER CHECKSTAND



In addition to providing data on customer acceptance and comparative performance of competing symbols, the results of these tests will help answer a variety of operational questions, such as: How does productivity change when the symbol is applied to the side of packages rather than their natural bottom? What is the incremental cost of symbol marking at the store level

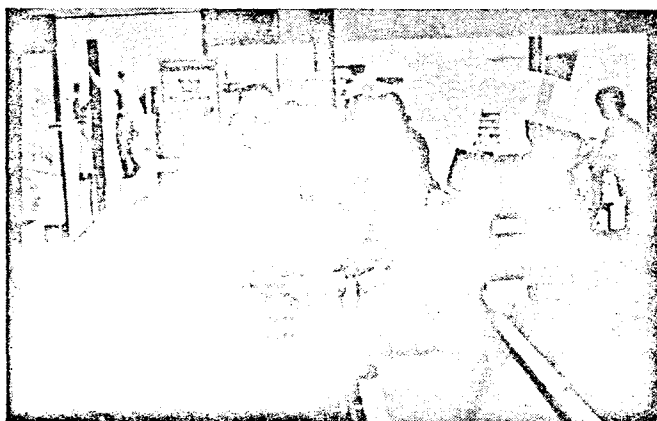
for different percentages of the packages?

The Symbol Subcommittee issued a detailed manual laying out the ground rules for conducting store tests last May. (That document is available from McKinsey if you are planning a test.) To date, one store test has been completed - Migros Stores, a Swiss cooperative, successfully finished testing a symbol and system designed by Zellweger at the end of August. Kroger currently has a test under way with RCA, Safeway has begun a test, and Acme will shortly begin testing a Litton symbol. Several other companies are also planning to conduct tests during the next few months.

Laboratory Tests

One of the major changes in the symbol selection process suggested by several equipment companies and accepted by our Symbol Standardization Subcommittee was the inclusion of a laboratory test program. This has proved to be a wise decision, since some equipment companies are simply not in a position to store-test their proposed symbol this year. Thus, the subcommittee effectively expanded the alternatives it will have to choose from by accommodating a laboratory test program. In addition, while the store tests are, of necessity, being carried out under a variety of conditions, the laboratory test program will make it possible to compare the solutions

RCA CHECKSTAND



offered by equipment manufacturers in a controlled environment. In fact, laboratory tests are really the only way to adequately compare one symbol with another.

Battelle Memorial Institute has been selected to design and conduct the laboratory tests. This firm is internationally recognized as a leader in

the relevant fields of technology. They have completed the test design and are now preparing to run the individual tests. At this time, it appears that IBM, Pitney Bowes-Alpex, RCA, Litton/Zellweger, and Singer Corporation will conduct tests.

All testing will be completed by early 1973 in order to allow enough time for McKinsey & Company, with the help of Battelle, to evaluate the results and feed them into the decision-making process. Therefore, any other equipment manufacturers that are interested in participating should contact McKinsey as soon as possible.

MEETING DATES

While most companies rely on either their trade organizations or DNB (Mr. W. Flint or Mr. D. Martin at 202-833-1134) for up-to-date information on the UPC project, so much is happening this year that I want to list here some recent events and planned meetings.

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| 1. UGPCC contract with DNB | 1/1/72 |
| 2. First company to join UGPCC (Swift & Company) | 5/31/72 |
| 3. Successful completion of first store test program by Zellweger in Migros store in Switzerland | 8/26/72 |
| 4. Completion date for Part I of feasibility study | 8/30/72 |
| 5. SMI Conference on computer systems changes necessary | 9/28-9/29/72 |
| 6. Symbol Committee meeting (afternoon session - 3:30 to 5:00 p. m. - open to the public - 80+ attended) | 10/5/72 |
| 7. Question-and-answer session for grocery manufacturers participating in the symbol marking cost feasibility study - 300-400 attended | 10/6/72 |
| 8. Ad Hoc Committee meeting | 10/10/72 |

- | | |
|---|----------------|
| 9. GMA Administrative Systems Committee meeting | 10/19-10/20/72 |
| 10. NAFC annual meeting with UPC update | 10/22-10/25/72 |
| 11. GMA Distribution Committee meeting | 11/2-11/3/72 |
| 12. Annual meeting of UGPCC | 11/9/72 |
| 13. Completion of the source symbol marking feasibility study | 11/30/72 |
| 14. Symbol Committee meeting | 12/4/72 |
| 15. Ad Hoc Committee meeting | 12/11/72 |
| 16. Completion of the laboratory test program | 2/28/73 |
| 17. Recommendation on a standard symbol | 3/30/73 |

NEXT STEPS

In our first newsletter, I laid out a list of steps to help companies begin planning their transition to the UPC. The suggestions that follow are intended to supplement that earlier list. In putting them down, I've tried to incorporate the ideas and comments we've been getting from the UGPCC distributors and manufacturers who have already begun to convert their operations to the UPC.

For Distributors

1. Separate your decision on adopting the UPC number system from your decision on buying automated check-out equipment.
 - Join the UGPCC. (Companies who have contributed \$20 per million dollars of sales to our fund raising effort are entitled to charter membership.)
 - Begin now to develop a corporate strategy vis-à-vis both the code numbering system and subsequent front-end automation.

- Ensure that your corporate strategy is clearly communicated to all key people in your organization - e.g., operations vice presidents, controllers, systems managers, procurement managers - so that they can respond to actions being taken by manufacturers.
- Instruct your systems managers to develop a plan for converting to the UPC numbering system (e.g., what to do about reorder systems, accounts payable, warehousing, and procurement; how to handle the greater specificity of direct delivery products, deal packs, and shipping pack variations - each requiring a separate UPC number).
- Instruct your procurement office to request UPC numbers from suppliers, then to use those numbers on authorized products list, purchase orders, and receiving reports, and design new forms where required.
- Develop a reorientation program for people in all parts of the organization, including procurement, accounting, warehousing, and operations.
- Play an active role in modifying the UPC code guidelines by communicating any problems you encounter and suggested solutions to DNB.

2. Develop the capability to make quantitative, fact-based comparisons of the new equipment offered to you.

- Start by studying the SMI evaluation manual to gain an understanding of the economic implications of the fundamentally different systems that will be offered to you over the next few years - e.g., electronic cash registers, price scan systems, price-look-up systems, and variations of these approaches.

- Ensure that each alternative being considered is subjected to a thorough and objective analysis, since just as in any rapidly changing market, competitors will offer apparently "too-good-to-be-true" deals designed to develop you into a major customer.

3. Start your long-range planning efforts.

- Begin to plan how to use the improved data to take full advantage of the potential "soft" savings, which will probably be even greater than the attractive productivity savings already projected.
- Develop personnel plans for dealing with the impact of front-end automation on the jobs of grocery clerks, check-out clerks, and perhaps produce and meat personnel - e.g., how many store managers can run a mini-computer or precisely control 7,000 to 10,000 item code numbers against the appropriate price. Longer term labor relations planning also makes sense.
- Start doing financial planning to ensure that you have the flexibility to enter into purchase or lease contracts should it prove appropriate to proceed. (This will be especially important if rapid implementation is indicated, since the cost of the new equipment is substantial.)

For Grocery Manufacturers

1. Begin implementing the code numbering system to avoid having to convert simultaneously to the use of the code number and source symbol marking in 1973.

- Join UGPCC to obtain your guidelines and manufacturer identification number.

- Begin changes to invoices, shipping cartons, debt and credit memorandums, and other documents going between you and your customers that normally identify products on an item-for-item basis. (Note that considerable savings can be achieved through careful conversion in this area.)
- Consider the accounts receivable implications for your company to find ways to minimize the complexity of the instructions that will be required for your sales force, who must be able to communicate the specific billing instructions by UPC number to individual buyers.
- As soon as the symbol decision is made, identify problem packages within your line with respect to each symbol proposed and, where possible, try practice runs in accordance with the print specification. For example, some products printed with a silk-screen process or flexographic process may not be adequately controlled to meet the symbol printing specification.
- Meet with key customers and other grocery manufacturers to ensure that your plans for using the code numbering system are consistent with the UPC guidelines and expectations of your customers, and to learn about the administrative solutions developed by other companies.

2. Participate in the source symbol marking feasibility study to identify the cost and problems associated with source marking each of the competing symbols on representative products in your line.

- Contact McKinsey & Company to obtain the specifications and survey forms necessary for participation. Since all studies must be completed by November 30, 1972, you should take this step right away.
 - Notify your container suppliers and label suppliers that you will need help from them in identifying the cost of source symbol marking for various products. This is essential because it will be difficult for some of your suppliers to accommodate some of the symbol specifications already proposed as industry standards.
3. Plan your source symbol marking strategy.
- Consider deferring plate changes until the Symbol Standardization Subcommittee makes its recommendation to the industry (no later than March 30, 1973). This would put you in a position to incorporate a symbol decision without a special plate change, thus minimizing the cost impact.
 - Review label designs to decide where the symbol would be printed and how other information could be rearranged to minimize the aesthetic and cost impact of a source-marked symbol and perhaps provide a marketing advantage.

FOR ADDITIONAL
INFORMATION

For those of you who want more information on the UPC, documents dealing with most aspects should be available through your trade organization. You may also call or write to DNB at 1725 K Street, N. W., Washington D. C., (202) 833-1134. We are anxious to ensure good communication on this effort so that the full potential of industry-wide benefits can be achieved.

Sincerely,

R. Burt Gookin

R. Burt Gookin
Chairman, Ad Hoc Committee
President, H. J. Heinz Company