TWW Keynote Speech, UPC 25th

The development and implementation of the UPC system has been widely hailed as one of the most successful standards-setting efforts ever undertaken. The fact that it was entirely voluntary and conducted solely by private industry makes the effort more remarkable. We are gathered here today to celebrate that success, but, more importantly perhaps, to attempt to explain why this particular endeavor succeeded. Most standards-setting efforts have not. If we can provide some helpful guidance to those who may be faced with similar endeavors in the future, it will serve as a fitting tribute to those who brought the UPC system to life.

Before you dismiss me as a pure theorist, let me put into the record experience on the subject of standards-setting.   In 1972, a year before the UPC Symbol standards were published, I assisted Jack Strubbe of Kroger in preparing a

presentation to a Pepsi-sponsored industry top management conference in which he theorized on reasons for the apparent early success of the UPC process compared to a dismal industry record on other standards-setting projects. I revisited the subject in the late 1980's at the request of Roger Miliken, who was attempting to move the apparel and textile industry ahead in the areas of logistical efficiency. The subsequent formation of the VICS committee, whose charter I drafted and on which I served, borrowed heavily from the UPC experience. Finally, I consulted with the European Airline Association in their efforts to automate the passenger ticketing process, was deeply involved in the Direct Product Profit standard, and, like most of you grocery industry "lifers," dealt with ECR and a number of other industry process reform attempts over the years. Thus, I can bring some hands on experience to this discussion.

Given time constraints, I will leave to others the task of establishing that the UPC system has been a success.

However, I would note that it has not been an across-the-board triumph. The excellent Price Waterhouse Coopers report, to be presented later this morning, points out our shortcomings to date in achieving the so-called soft savings benefits.   In fact, the original concept of a standard human readable product code, to be used at all levels in the distribution channel is far from realized, as many retailers still employ their own item numbers, with the UPCs use limited to point of sale and to EDI communication to vendors. But, the main thrust of UPC, to support front-end automation, has clearly succeeded.

This leads to the main question I wish to address this morning. How was it that an industry not known for its prowess in technology was able, in considerably less than ten years, to develop and implement such a massive change? Change which, to be successful, required hundreds of manufacturers to accurately print machine readable symbols on thousands of individual products, whose packaging spanned dozens of materials printed by a

number of very different processes? Change which required
thousands of retail outlets to install, operate and maintain
scanning equipment produced by multiple equipment
vendors?

To answer this question, I intend to propose three critical
requirements for any successful standards effort and then
lay out what I believe to be the dozen or so things the
grocery industry did in conjunction with the UPC project that
allowed these requirements to be met.

Broadly speaking, I believe there are three fundamental
prerequisites for a successful industry standards effort.
These are: 1. Skilled executive leadership, 2. A viable,
demonstrable underlying concept, and 3. Broad, continuing,
industry support.

1. Why skilled executive leadership? Because, developing
and implementing a voluntary industry standard is an
extraordinarily difficult task, demanding outstanding personal

leadership skills. In contrast to top corporate positions, the executive taking on a standards effort lacks the power base provided by corporate law, company bylaws and economic power. This places a premium on putting highly talented people into these positions. The reality is that too often availability rather than ability governs the selection process. The reasons this is true are fairly obvious: often, personal and corporate career priorities mitigate against fas-track executives taking on these roles. Also, there is often a degree of conflict and controversy in these efforts that leading other voluntary endeavors (charitable fund raising, for example) does not normally involve. Thus some, who are otherwise qualified, avoid this activity. In net, lining up the requisite high-level of leadership talent, while critical, is too often not accomplished.

2. The second prerequisite to success has to do with the underlying concept itself. Standards are clearly "means," not "ends." Yet the temptation for standards setters is to concentrate on the details of the standard rather than on the

basic feasibility of the concept. In my view, the majority of

failures in industry standards efforts stem from poor basic

concepts not flawed standards.   Problem identification, in

most cases, is done fairly accurately. However, there is

frequently an illogical leap from problem to solution, so that

after the effort to develop requisite standards is completed,

little implementation takes place. And, because many

individual industry members must execute the concept, its

viability, if not clearly self-evident, must be readily

demonstrable.

3. The final prerequisite to success is the capability to

develop broad, continuing industry acceptance and support.

Most of us assume that improved industry performance is a

widely-shared goal. In fact, in almost all cases there are

strong champions of the status quo. This championship may

arise from a simple lack of vision or fear of change, but it can

also be rooted in a belief that a major change in industry

practices will threaten the competitive position of individual

participants.   Thus, those advocating change must

recognize that substantial opposition will emerge and consequently assemble sufficient resources to overcome it. This often raises the practical problem of finding advocates who are committed enough to be willing to take up the fight with dissenters. Trade associations find this difficult, because their memberships often include both camps. In some cases, this role can be played by third parties who see potential economic rewards (e.g. equipment vendors), but they generally suffer from a lack of credibility when advocating "What's good for your industry." At the end of the day, the task of building and maintaining the necessary degree of industry support typically falls on the industry committee/taskforce itself.

It is also true that most major reforms, particularly those involving technology, take longer than initially forecast and frequently require reiteration and revision before finally succeeding. This puts additional pressure on industry advocates to hold the consensus together until the project has developed enough momentum to succeed on its own.

If those are the critical requirements, how did the UPC selection process measure up?

Although I intend to touch on at least a dozen elements of that effort, they can be grouped into the following major topics:

-The structure, mandate and composition of the ad hoc committee

-The methodologies employed to confirm the feasibility of the concept

-Anticipation of dissent and syndication of conclusions
And, finally, a difficult to explain
-Intangible

Ad Hoc Committee

In my view, much of the success of the UPC effort traces back to the Ad Hoc Committee. Because standards efforts routinely are managed by industry committees, the formation of the Grocery Industry Ad Hoc Committee on Universal Product Coding in the summer of 1970 hardly qualifies as a seminal event. So, what was different about this one?

First, it was composed solely of executives who were either the Chairman or President of their company. All ten, not just one or two. And, while balanced to include some smaller companies, major players such as General Foods, General Mills, Bristol Myers, H.J. Heinz, SuperValu, A&P and Kroger were represented. There was equal representation between manufacturers and retailers, five of each, and one retailer was nominated by each of the then five distributor associations. While perhaps politically correct, I believe those balances were far less crucial than the chairman/president qualification for membership. Their corporate titles provided the representatives a high degree of

protection from parochial interests, allowed them to operate without concern for justifying their actions to a superior back at the company, and served effective notice within and outside the industry that a very serious endeavor was underway.

Adding to the impact of the committee's structure and composition was an agreement to allow members to bring technical advisors from their companies, but to prohibit those advisors from representing the member. Again, the impact of this arrangement was to maintain the level of endeavor at the highest level of strategic, total industry focus.

Finally, as should be obvious given the companies involved and the level of representation, the Committee benefited from an extraordinary collection of executive talent. As one ocean-racing wag put it at the time, "With that crew, you guys could win the Bermuda Race with Kon-Tiki."

A number of benefits resulted from the ad hoc committee's composition. Attendance at meetings was nearly perfect: they made the time! Bill Kane, of A&P, did miss a meeting while barricaded in his Graybar Building offices by a group of protesters, but that was about it. Early in their deliberations, it became apparent that the members were working hard to see issues from the point-of-view of their trading partners. In fact, this focus became so pronounced that we were sure that a stranger attending a meeting and attempting to classify manufacturers and retailers by their comments, would be almost totally wrong in his classification. And, because the individual members were industry leaders as well, the committee had a built-in power base. For example, members Burt Gookin and Jim McFarland successively held the chairmanship of the Grocery Manufacturers Association from November 1971 through June 1976. When the going got rough, as it inevitably did, the ad hoc committee's political base provided needed strength to push the effort through.

A third defining factor was the committee's charter. While clearly a creature of the six trade associations which had created it, the committee was established with a totally-independent mandate. At its initial meeting, after Heinz CEO Burt Gookin was elected chair, the six trade association executives, (Clancy Adamy, Mike O'Connor, George Koch, Gerry Peck, Frank Register and Earl Madsen), all rose and left the room in a symbolic gesture of their putting the industry's efforts in the hands of this group.

I am unaware of any other voluntary industry standards movement with a comparable leadership committee arrangement. As to how this brilliant stroke was conceived, I am less certain. I suspect that Brad Butler, then P&G's Chairman, and the sponsor of two impromptu industry meetings held in Cincinnati in early 1970 to discuss the challenges posed by scanning, had a hand in it. Don Kendall, Pepsi's Chair and also GMA Chair in 1969-71, has shared with me his important involvement in organizing the

ad hoc group and certainly the six association executives were important participants.

In leaving this point, I would conclude that such a blue-ribbon committee made an enormous difference in the UPC project's success. I would also conclude that the real trick is in figuring out how to replicate that experience in an era of increased litigation, and one when projects often lack the inherent appeal of front-end automation.

<u>Validating the Concept</u>

The second major factor contributing to the success of the UPC effort was the methodologies employed to validate the concept of front-end automation based on machine-readable symbols placed on each product. It is my belief that the inclusion of these methodologies in the processes which the ad hoc committee established to govern its deliberations and conclusions was key. Not only to its making the correct decisions regarding the desirability of the industry pursuing the concept, but also to the building of an industry consensus to support the committee's recommendations. That consensus ultimately proved strong enough to overcome the obstacles which threatened to postpone or derail widespread implementation.

 An important initial step was agreement to the hypothesis that front-end scanning was not necessarily a viable concept. It may seem obvious to first justify the concept and then indentify the necessary standards. But time after time,

industry standards efforts fail to follow this route. What typically happens is advocates get caught up in an initial wave of optimism, accept potential benefits as realizable and move on to "getting the job done". In the case of the UPC, the committee members had an early, collective belief in the principle that net economic benefit to the industry had to be demonstrated before the concept could be accepted. In this regard, it was perhaps fortunate that costs and benefits were not generated at a single point in the distribution channel. That is, it was quickly seen that symbol marking, if it were to be economically accomplished, had to be done during the product manufacturing process. Conversely, while checkout automation was believed to be in the best interests of the entire industry, most of the initial benefits were likely to accrue on the retailer side. Thus, it was not enough for a potential scanner purchaser to calculate whether projected savings at retail justified the cost of the equipment (as is the case in most automation decisions). The upstream cost of making products scannable needed to be taken into account as well. And, while source marking costs were thought to be

modest, one of our earliest realities was that the product of any number above zero, when multiplied by 300 billion (the then item throughput of the industry) was significant. Thus, a collective, cross-industry comparison of costs and benefits was seen to be required in order to reach a conclusion on the economic viability of point-of-sale automation.

Once the ad hoc committee reached this conclusion, it moved to make sure the concept validation process was well executed.   The major requirements were time and money, as might be expected. However, accepting a 2x to 3x extension of the length of the feasibility stage with an accompanying exhaustion of initial association-provided funding was not an easy decision. There was strong industry pressure to move ahead with decisions on code and symbol composition rather than continuing with concept justification.

Another common failure in justifying the concepts underlying standards development projects is to spend most of the justification effort on the proposed new process, and little on

the current solution. Many times, existing performance parameters are developed from a quick collection of industry experience, with ready acceptance of what "everybody knows" and little, if any, confirming analysis.   This leads to a number of problems when it comes time to convince skeptics that the new solution is superior. "I don't know where you got those numbers", "our experience is different", and similar rejoinders are bound to emerge. To avoid these issues, the UPC effort included the development of a parametric model covering every aspect of product movement through warehouse and retail stages. It could be run on a conventional basis, with manual checkout, so that it was possible to tie any individual retailer's reported performance to a set of product handling coefficients which were nearly impossible to dispute. Similarly, an advanced case simulation could be run, with agreed-to changes in the relevant coefficients. What this allowed was the clearest possible layout of the supporting assumptions, leading to a conclusion that the improvements generated by automation were of a specific magnitude for a specific operator.   While

perhaps obvious today, the task of gaining agreement to and building the parametric model (well before the era of spreadsheet software) was far from easy at that time. I believe it was fundamental to the UPC effort's success.

In this regard, it may interest you to know that the observed range of front-end throughput across well regarded operators using manual checkstands was significantly greater than the mean difference in performance between scanning and conventional point of sale devices. <u>Anticipation of Dissent</u>

Another important process factor in the success of the UPC effort was a group of activities I have grouped under the title "anticipation of dissent." As I noted earlier, there is a tendency in industry reform efforts to assume that if an improvement concept is demonstrably worthwhile, support will naturally follow. A review of actual experiences suggests otherwise. What tends to occur is an initial outpouring of concurrence, which then fades as the realities of implementation are faced. If unrealistic timetables have

been published, resulting delays tend to fan the flames of dissent and concurrence begins to unravel. Statements starting with "Of course we still believe in scanning, but…" are made, followed by such charges as, "is the industry ready for it?", "can we afford it?", "don't most of the benefits accrue to 'them' (any constituency other than the audience's)?".

If you doubt the UPC effort faced these trials, let me assure you it did. A few were publicized; most were not. The infamous Business Week article in 1976 with its eye-catching headline, "The Scanner the Failed" provides a painful reminder of what the effort faced in the area of eroding support.

Who might oppose checkout automation? Start with union labor leaders, not surprisingly concerned about loss of membership. Look at existing mechanical cash register producers. Add in a few (thankfully, not many) store door delivery vendors, convinced that "When retailers find out

how slowly some of my items actually sell, I'll lose half my distribution." Find an industry member with an investment in an alternative technology. Or an association executive tired of having his nose rubbed into how successful the committee had been. It is generally easy to find champions of the status quo.

What allowed the UPC effort to succeed against this opposition was an extensive investment in identifying, analyzing and preparing to deal with major issues before they arose, combined with a major effort to build a broad and deep level of support across the industry. Let me elaborate on these points. In its efforts to anticipate and deal with dissent, the ad hoc committee:

1. Established a so-called "Washington Strategy" sub-committee under the leadership of Gavin McBain (Chairman, Bristol-Myers). They developed an issue list, conferred with association executives (grocery industry and

others, such as computer manufacturers) and initiated action programs as appropriate to be able to immediately deal with individual problems as they emerged. An example would be laser beam safety. Another would be disproportionate benefits to larger retailers. In the latter case, a project was initiated to study the potential effects of scanning in smaller stores. Live data was gathered from a dozen or so outlets with sales ranging from $10 thousand to $30 thousand per week. ($40 thousand per week was the average turnover in those days). Utilizing the parametric model mentioned earlier, costs and benefits were projected, and a report developed for use in discussions with NARGUS, NAWGA and CFDA leadership. Similar projects were initiated in the areas of packaging costs, consumer shelf price awareness and printing tolerances. These were costly undertakings, which a less committed committee might easily have skipped.

2. Undertook an initiative to unrestrictedly share its findings with the Retail Clerks Union. Presentations were made to each of three regional meetings of all of the union's locals, and the potential reduction in front-end labor hours was openly shared with them.

3. A Public Policy sub-committee, under Wegman's Chairman Bob Wegman, was put in place to carry on the efforts of the Washington Strategy group as the ad hoc committee passed the mantle to the Code Council board.

4. Prior to the public announcement (scheduled for May 1971) of the committee's initial findings and recommendations to the industry, individual presentations were made to each of some 30 industry member companies, covering both retailers and manufacturers. A pre-condition of the meeting was that the company's CEO be present (it was left to the CEO as to who else would be invited to attend). An agenda was

distributed, which included a list of questions to be asked of the CEO at the conclusion of the meeting. (Do you agree with the findings; are you comfortable with announcing them now, or should the committee do more study before announcement; if the cost of symbol marking turns out to be consistent with these projections, will your company implement source marking?)

In retrospect, some of these activities may seem like overkill. However, most of those who were closely involved with the UPC effort will tell you that the line between success and failure, or at least substantial delay and less than full realization of potential benefits, was very, very thin.

<u>Intangible</u>

Let me conclude by touching on an intangible which I believe contributed to making the UPC development and implementation effort a success.

It is that the concept had a nearly mystical element to it that repeatedly captured and challenged the intellectual capabilities of a series of extremely talented individuals, and caused them to become not just supporters but devoted disciples to seeing its potential realized.   Jack Strubbe, of Kroger, not only provided much of the behind-the-scenes fuel which powered the effort, but on at least two occasions of which I am personally aware, disregarded the strong advice of company superiors and took actions he felt were necessary for UPC's success. Albert Heijn of Ahold heard Burt Gookin's presentation at the May 1971 SMI conference, stepped forward and volunteered to assist in seeing that the European-based industry enjoyed the benefits of automation. For the next 15 years he devoted an enormous amount of time and effort, as well as his own reputation, to seeing his vision come true. Burt, Bob Wegman, Jim Cooke of

Penn Fruit, Bob Schaberle -- the chairman of the board of Nabisco,

Alan Haberman-- CEO of Finast -- and others, at one point or

another, backed actions which seemed to be at odds with their career

or company interests. And they did it in the interest of seeing this

thing come through. I have had nearly every member of the ad hoc

and supporting committees tell me upon their industry retirement that

they consider involvement with UPC the most satisfying single

accomplishment of their careers.

I have no idea how one would go about creating a similar attraction

for other projects, but I am convinced it had a lot to do with the

successes we are celebrating today.

That is it, then: one active participant's ideas on how a bunch of

catsup peddlers and meat cutters succeeded in enabling a set of

potentially advantageous technological advances to become an

indispensable element in worldwide commerce. To those of you who

participated, my congratulations; to those who may attempt similar

endeavors, my hopes that these remarks may make a terribly difficult

undertaking a little easier.