HOW TO ORGANIZE AND OPERATE QUALITY ASSURANCE OPERATIONS FOR SUPERMARKETS

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Discusses a series of approaches to quality assurance programs in supermarkets.

Before we begin to discuss the how-to's and alternatives of Quality Assurance Operations for supermarkets, I think we must first begin by recognizing that a Quality Assurance operation is only a "tool" to achieve marketing and operating functions. It is not an end in itself. Therefore, before we know how to organize we must define objectives.

Clearly, different chains will have different objectives--some may have no clearly thought out objectives in this area at all. I will not try to deal with all circumstances. What I will present is what I feel is the position of the thoughtful, conscientious, consumer-oriented and profit-oriented supermarket executive.

For different requirements, there are different solutions. Quality Assurance operations can be organized in different ways and function effectively--it depends upon the objectives and circumstances. What we will describe is an approach to identifying and fulfilling objectives and of the techniques and alternatives in accomplishing the technical functions.

Let me also interject at this early point that while a Technical Division for a supermarket is frequently called a Quality Assurance department, that is only one of its functions, and in the following presentation my view of Quality Assurance reflects that broader view.

We begin with the objectives; as I see it, there are 2 aspects:

1. Those objectives which are product oriented, and
2. Those objectives which are operations oriented.

Let us deal with product first.

When we talk about objective for product, we mean primarily the private label and unbranded product aspects of the business. Private label is a dynamic force in the market place. In many supermarkets it represents 30% of sales, and a greater proportion of profits. With this kind of volume it cannot be dealt with lightly. And it cannot be dealt with lightly for another reason. Let me quote from a recent speech by Virgil Wodicka, director of the Bureau of Foods of the Food and Drug Administration. "The responsibility for the safety and the quality of the food supply does not rest on the Food and Drug Administration, except in the sense of establishing the rules of the game. The executive responsibility lies with the food purveyor. The person whose name is on the label has the responsibility for its quality including safety. Accordingly, the Food and Drug Administration will in the future be paying more attention to the ways in which the purveyor satisfies himself that he is meeting his obligations. We should like to arrange our efforts so that the purveyor who has adequate quality control measures qualifies for a minimum of our attention so that we can then concentrate our efforts on those whose quality control is less effective." That is the clearest statement I know of what the supermarket operator is to expect. Simply you cannot lay off your responsibilities on your suppliers--it is your name on the product--you are responsible. And the FDA faced with a large surveillance problem will not spend much time on those people making conscientious efforts to control

their products--but for those who do not--well, you had better get ready.

To define the quality objective, or of a line of products is no different for a private label operation than it is for a manufacturer. Indeed, the chain private label group operates as a manufacturer, only without manufacturing facilities. That may sound silly but think about it a bit--he is performing all the functions related to a product except the specific manufacturing operation itself. Therefore, quality objectives are defined from a corporate policy indicating a general quality level objective and frequently in reference to competition. The private label product manager implements the policy in terms of the specific product, defining objectives and these are interpreted into terms generally understood by the manufacturer by the technical group--this is called a product specification. Packaging is also specified. This specification forms the basis of understanding between the distributor and manufacturer.

But we passed over this too quickly. What is involved with arriving at a product and describing it in a specification? That depends upon the product, of course--some are easy to achieve, others not so easy. They generally fall into the following groups, what I call: (1) Natural Products, and (2) Man-made Products.

With natural products (e.g., fruits and vegetables) the quality is basically determined by the agricultural products themselves, and are affected by acts of God as well as man. These products have rather common processing procedures, and over the years rather uniform standards, terminology, and manufacturing practices have developed for them. There is a ready basis for the development of specifications and an effective quality assurance plan (which I will refer to later).

On the other hand, for man-made products (basically formulated products, or those with high levels of processing, e.g., cake mixes, detergents) it is an entirely different matter. These items are highly unstandardized. Product objectives, testing procedures, even terminology are often undefined. Incidentally, unstandardized products represent over two-thirds of the products in a full line of a private label program. They offer greater profit opportunity for the retailer, and an easier chance for a supplier to vary quality within a procurement agreement. Here, a great deal of know-how is required since it is often necessary to establish terminology, test methods and definitions of objectives. This is essentially converting the unstandardized toward clearer specifications. Then control procedures can be established.

A specification is not a goal, it is a realistic minimum that a buyer will accept and still fulfill his marketing objective. It must be clear, and understandable and realistic, and agreed to by both seller and buyer. And it should have in it the critical factors and not be cluttered up with meaningless details that just make life for the manufacturer more difficult. Given that, the pattern for a control plan can be established.

But the specification in a sense is the culmination of one part of product activity and the beginning of another. It is the result of development work, and it is the initiation of the quality assurance.

Certainly there are some products that a supplier offers to a private label buyer which exactly fit his objectives, or about which a supplier has no flexibility and is acceptable. These items however, are a small minority. In most cases there is necessity of tying together the production capabilities of the supplier with the marketing objectives of the distributor. Changes are made in the product a supplier offers. Sometimes the initiation arises from a buyer, who asks a supplier to work towards the development and production of a product. In all cases, however, the technical division personnel work out the problems "to get the right product". And it is their responsibility to get it, not only at initiation of a program, but on a continuing basis. This development actually has many aspects, and it is hard to generalize. Changes required may be in packaging, or product characteristics. Often changes are encouraged by a cost consciousness assuring that a supplier takes advantage of many cost-savings opportunities to him. These include a knowledge of the cost efficiencies achievable in production. Often changes are

encouraged by a quality consciousness--where the quality level aimed for is different, and generally higher, than the supplier's general production. In some cases, development work stems from a knowledge of a supplier's production capabilities, and to develop new products which he might efficiently produce and supply.

There are a whole group of additional inputs which the technical group has prior to the introduction of a product. Generally, from their product knowledge, these are the people most knowledgeable to develop or review label copy from a legal and technical viewpoint. Ingredient statements, use instructions, recipes and technical claims for products. Conformance to the labeling laws and hazardous chemicals acts and a host of others. And now as we go towards the Information Panel--Nutritional Statements, and Percentage Ingredient labeling, we face a level of complexity better solved by technical personnel than marketing people--that is, in working out the details of the program. Similarly, programs of open coding are complex and require close working relationships between supplier and distributor. This leads to another area of activity which goes beyond the specific product itself, but reaches into the distributor's operation--and that related to handling efficiencies. However, since the technical group works with plant personnel it is most effective to have them work out these matters. Such things as different size case packaging, case markings, unitized packaging, etc., and many other factors affecting store productivity.

O.K., now we have the products, and the suppliers. Let us talk about the alternatives for Quality Assurance programs open to the management person under whom Quality Assurance Programs would fall.

1. The plan, if you want to call it that, is to Do Nothing. This, of course, is the lowest cost operation of all. It runs all risks, however, both from a quality viewpoint, but also from the economic view of what the distributor receives, as compared to what a chain is paying for. I don't believe any distributor operates a private label program doing absolutely nothing, but I am also sure that in many product areas, where the buyer is not very knowledgeable, this does occur, in fact.

2. The second plan is to Depend Upon The Supplier. Here the buyer does something. He comes to some understanding of the quality of the product he is buying. He may not have a written specification, but at least he thinks that he and the supplier understand each other. The next step he takes is to place all the burden of responsibility for the product on the supplier. Now there is some truth to this. And this viewpoint must be strongly involved in all programs no matter how much quality assurance effort is expended. The reason is that, inspection never builds quality into the product--it has to be put in at the time of manufacture--in the materials, in the processing techniques, in the workmanship and in the product controls. However, it is also clear, as I quoted Dr. Wodicka earlier, that you cannot wash your hands of the matter. The person whose name is on the package has the responsibility for the product. That is all there is to it. But besides this negative reason for establishing controls, the positive reason is that the seller's and buyer's objectives are often not the same--and one cannot transfer to the other such an important factor as product quality control--particularly because of all the marketing and economic ramifications of that decision. It is necessary for the distributor to evaluate for himself whether he receives what he is paying for.

3. A third, so called, plan is to Depend On Customer Complaints. This plan wins my mixed-up thinking award. It essentially states that problems do not exist since customers are not complaining. Oh yes, maybe one or two every week--but there are always cranks.

Well, what is the marketing approach of a private label program? It is to give value and quality in a product--so that the consumer will rebuy. The basic approach must be that there is a very low level of consumer dissatisfaction. Private label programs do not use advertising to convince a consumer about the merits of a product--they use shelf display and price to attract the customer, but the product itself must convince the consumer of the value of the product and label.

Customer complaints are only indicative in cases of disaster. Only a small percent-

age of customers ever complain. Those that don't like a product don't rebuy it. And consumers can only identify large differences in product quality. When customer complaints become obvious then a vast number of customers are dissatisfied--far more than the number of complaints in hand--and the damage is done. It is after-the-fact. The objective of a quality control program is to assure consumer satisfaction. I find it difficult to place a cost on this system. It is high and hidden. Lost profits due to customer dissatisfaction, high costs of customer complaint handling due to a feeling for frantic efforts to placate her, and the fact the bad product was not what you paid for.

4. The next plan is to occasionally draw samples and send them to an outside lab. This is the most frustrating plan of all, because of the self-deception involved. Sampling is at such a low level that it is meaningless. The buyer is not aware of this, feels he is doing something, doesn't know what to do, and this is better than nothing and something he can afford. The outside lab really has a ball on this one. He knows who he is dealing with--and so he will snow him with technology. The buyer develops an impressive shelf full of reports, many giving analyses that he has little understanding of (and frequently he may be too embarrassed to ask). The laboratory's costs do not look high, because even though they may be high per sample, they do so few samples that, in total, the program appears reasonable. All products may be looked at, but how frequently--once every six months, or year? And the lab man stays in his lab and the samples are brought to him--a convenient way of operating. The program is designed to the amount the chain is willing to spend--$8,000, $10,000, whatever you want. Generally, samples are drawn from the stores--ostensibly to evaluate what the consumer receives, but in effect--it is all after-the-fact. All that results is that shelf full of reports giving expensive false security to the buyer.

I am not saying that this system will not detect gross and continuing deception or malpractice. It will. And to that extent it has value. But as you all know something about statistical variation of products, not every sample is bad, in fact, you can draw quite a few good samples from a population which has too great a percentage of unacceptable product. And if you are drawing samples every six months, problems can go on for years. And the reverse is also true, you can also call something bad which is not bad at all. You must have adequate sampling, or you don't know what you are doing. I probably would have to place the cost of this plan at the highest of all. It has significant consumer dissatisfaction losses, it still allows for a large percentage of error or deception by the supplier, and it also has significant analytical costs. High costs, but not effective.

5. The next plan is the Do-It-Yourself plan--to hire your own Quality Control man, place him in your warehouse and have him draw samples and analyze them. Certainly this must be a step in the right direction. Let us analyze the difficulties of that approach. Let us say that we are dealing with a chain that is doing 20 million dollars of private label product through their warehouse--there are quite a few of them--and the program is big and important enough to warrant some effort. This 20 million dollars is frequently made up of 500 or more products. Some private label programs have 1,500 to 2,000 products. Those in the range of 200 items are relatively weak private label programs and I doubt whether there would be any sense of urgency to hire a quality control man. Let us say we are dealing with 500 products covering the full range of categories all groceries, chemicals, non-foods, refrigerated and frozen foods, dairy, meats, paper products, and major supplies. We wish to control it, so the first thing we want to do is hire a man. And there, of course, is the first problem. What shall we pay--well he can't get paid more than the buyer--let's get a fellow with some experience--but not too much. Let us pay him $12 to $15,000. And he will be responsible for quality control. We'll also set up a small lab for him in the warehouse. The problem of course is that this young man (1) does not have the experience to deal with 500 such varied products effectively; (2) does not have the experience or know-how to set up a system to work which will be effective; (3) he does not have any supervision which is capable of helping him solve his problems--or possibly even understanding them.

Now this young man, with all the enthusiams of the new challenge leaps into the new job and approaches it in a logical, workmanship conscientious way. Let us say he has experience in canned fruits and vegetables, which is still the largest group of products in young private label programs, where he has clear industry standards and testing methods he does not have to work out--he can deal pretty knowledgeably with 200-250 of the products. However, he does have some trouble with the dairy items, meats, chemicals, health and beauty aids, paper products and many grocery products like cake mixes, and so on.

He knows about sampling and so he decides to sample at a reasonable rate, let us say 1 sample per 100 cases of product. He quickly finds that a 20 million dollar program at an average cost of about $4 per case represents 5 million cases or 50,000 samples for him to look at in a year. But he really doesn't think about that too much, because he doesn't have time to think too much, he's so busy cutting samples. How many samples can he inspect?

He has to draw the sample, mark the information down, perform the analysis--sometimes this is very simple, and sometimes very long and involved, write down the results, advise the buyer of results, and if there are problems, take some corrective actions--drawing additional samples, contacting supplier, rejecting merchandise, inspecting product in stores--besides keeping up the lab equipment and supplies. And, of course, disaster problems which are thrown his way. I am going to be very generous, if he can average 4 samples an hour, he is a hell of a man. 2,000 hours in a year. He can do 8,000 samples. But as you recall, good sampling might have called for 50,000. Impossible. Therefore, he has either to leave off whole product groups, or do significantly lower sample levels, or ask for help. Generally, all 3 will be done. Now, this plan does come up with some good results--but nowhere equal to what it is purported to be. The young quality control man is not in a hurry to publicize he is doing an inadequate job. The buyer brags he is doing more than most other chains.

What does this cost? Let us assume you have a one-man operation at $15,000, plus about 20% for benefits and when we add travel, telephone, amortize a $20,000 lab set-up over 10 years, charge him for rent, some supervision time from above, and reasonable allocation of general overhead, we feel that they are spending about $40,000 for this function.

The problem is that this system is not efficient. It is somewhat effective, but not efficient in achieving the goal. Sure your man is working like crazy, but he still ends up being inefficient, because the strategy of the operation needs improving.

I know some supermarket chains that have never faced this efficiency question and where their man in the warehouse needed more help they got it and the lab grew and grew. The man who ran the lab did all kinds of traditional tests on products and the lab grew further. After awhile, they were absolutely sure they had a good quality control operation--it certainly was a big one. But size did not solve the basic inefficiency of the concept.

Before we go on to another alternative, let us discuss a different concept. I alluded to it earlier in my presentation when I said that Quality is never inspected into a product, quality must be put in at point of production, and it may also best be controlled at that point. Let us now change the concept from a "control" lab to a "control of a control" function. The major concept here is to get someone else to do most of the work, wherever possible, and to set up systems to provide assurance that those controls are continuously effective. In addition, a second major concept is one of flexibility--when we are dealing with 1,000 products and about 1,000 suppliers, no rigid system works for all situations. It is necessary to look at each product group and sometimes supplier to develop a system that works best for each.

This program begins work with the suppliers before any product agreement is reached. It is concerned not only with the product which is produced, but the supplier's capabilities to produce and control product on a continuing basis, in the quantities required. The program begins with a Vendor Certification program. Should a supplier be found who, for business reasons, it is

decided to work with, but who for technical reason is open to some question, a whole set of additional controls can be established to minimize risks. Next, is the Quality Assurance program--the first part of which are those controls performed by the supplier. The technical representative of the distributor works directly with the plant production and quality control personnel to be assured that adequate tests and controls are being performed internally, and that adequate records are retained. A communication system is also set up between plant personnel and the distributor's technical group.

I wish to point out something at this point. The distributor's technical representative has to know what he is doing--you cannot send a boy in on this kind of work. He must be knowledgeable of the industry he is dealing with, and of quality control methods fully. If he does not, what he sets up will not work, either because he didn't know enough and the plant personnel "pulled the wool over his eyes" and he missed the critical factors, or he is too rigid and unrealistic so that the systems set up are unworkable. This can prove to be a problem not only for the quality control, but for the procurement function as well. Clearly different types of systems are set up for seasonal pack agricultural products than for continuously produced formulated products. And it is different for perishable products than for non-perishables. There is a whole arsenal of methods to use, each in their proper place. Let us say the distributor's quality control man does a good job. The in-plant controls are set up. His next job is to see that those control programs continue to work properly. He does this in 2 ways. Through sampling and testing of product, usually in ways similar to the methods used in the plant--and through continuing communication of results with the plant quality control function. This communication is two-way. That is the theory of the operation.

In practice, the system develops a great deal of flexibility when you realize that what you are out after is to be effective and efficient--that is, establish economical controls. There is no point testing a supplier who has excellent quality control and where you never find poor product as frequently as one with poor controls and frequent problems. There is seldom reason for performing all tests on all samples. Critical factors certainly--but other tests with less frequency. And many other labor saving approaches.

All of this is part of what I consider a Control Plan--it is the tactical plan which implements the strategy--by each product, supplier, test, and course of action. This plan continually changes in the light of information.

I didn't want to leave out reference to the use of other inspection services besides the suppliers in-plant quality control --when government or other inspection services are involved, their results are also coordinated into the system.

Why do we take such a viewpoint? It certainly is not a simple approach. The reason is it is the most effective and most economical approach I know of. Dale Petersen talked about the cost of quality control. Clearly you cannot let the cost of administering and operating a quality control program eat up much of the efficiencies inherent in a private label program. How much cost can a private label program stand for all the aforementioned technical functions combined? Management will have to answer that question. I personally think that 1% of the cost of product procured is the top limit for a continuing program--and as far as I am concerned generous for the development of an effective program. If your quality assurance program has costs like that you should hire a consultant to look into the efficiency of your control systems. I believe that an effective program can be established for ¼ of 1% of the cost of product procured. You must understand I am talking averages. Certain product groups will cost far more than this and others far less--the product mix makes a difference. I am assuming a usual mix of private label products.

Now to the crux of the matter. How does that chain with 20 million dollars of private label volume establish a quality control function? One quarter of 1% of that is $50,000. That isn't much more than we were talking about before when they hire a fellow and put him in the warehouse. That is the point. I don't really think that this size

operation can do an effective job internally. The reason is that to have an effective, knowledgeable, full ranging staff, you need more than one good man. And you are not talking about $12,000 a year man--you must have people of much higher caliber. This raises 2 questions:

-- at what dollar level does the internal operation become workable?
-- what does the small operation do?

It is very difficult to say at what dollar volume an effective set-up can be made. For two reasons, first, most people don't have my high standards of what effective is--and so we are not comparing apples with apples and second, there is the range of ½ of 1% to 1% which a distributor might accept while his program gets growing. I think you have a pretty hard time setting up an effective quality control operation for less than $200,000 total. This therefore works out to anywhere from a 20 million to an 80 million dollar private label operation. No one at 20 million volume could live with that cost for very long. Therefore, I am saying that only the pretty big operations are capable of doing a good job--in practice, some are and some aren't performing to their capabilities.

What is the best alternative then for the smaller operator--and in fact, for the larger operator as well? I believe to use an outside technical service to perform those functions for them, who through combining the volume of numerous customers can achieve the efficiencies and breadth of expertise required. Is there such a service available? Up until a few months ago there was none in the country, to my knowledge, that operated along the lines I have described. Now there is one, the QUAD Corporation that I have organized, just for the reasons I have described, and we are now servicing the supermarket industry with Quality Assurance and Development services.

But I haven't completed the whole story yet. We only dealt with those product-oriented technical services. There are a whole host of operations-oriented technical services required as well. These primarily find their basis in 2 areas--those related to procedures for proper protection and handling of product, and those related to operations productivity. It is ridiculous to spend great care in obtaining excellent refrigerated products, only to abuse them with inadequate handling at warehouse and store. It is a gross waste of money. I don't think there is a store that we couldn't go into (where we haven't worked already) where we couldn't save at least 5 times, more often 10 times, the cost of the refrigeration improvements required, in the first year, in decreased direct product value loss. In the meats and produce departments--in fact, all perishables--the accepted level of loss--and of selling product which is too far "over-the-hill"--to consumers is far greater than it has to be. Why? Frankly because I think most supermarket operations suffer from a remarkable inconsistency. It comes from their marketing background. They would never say to a supplier--tell me how to sell the private label product--they will say that is my business--you supply, we'll sell it. But to an equipment supplier--they will never say, don't tell me how to operate the equipment--they depend on the supplier. When problems develop with the equipment the supplier is fast and excellent to supply technical service help. In a surprising number of cases, however, all this advice does is prove that it isn't the supplier's fault--but someone else's. The operator must have that same level of confidence in technical functions as well as with marketing functions to make his own way--with less dependence on suppliers. He may often hire outside technical consultants who are competent and objective to achieve his goals. With mounting pressures to increase productivity, this is a more and more important field for supermarket managers' efforts.

To summarize then, we have reviewed the technical needs of supermarkets in their private label procurement programs and very briefly in operations. The alternatives he has for performing quality assurance. The objectives and principals of operations of this department, and the problems the manager must face in doing a good job--and we have proposed solutions.

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