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SUSTAIN

TRAINING: QA/QC AND MARKETING
WORKSHOP & SITE VISITS

NOVEMBER 6 - 13, 1993

UGANDA

S haring
U nited
S tates
T echnology to
A id in the
I mprovement of
N utrition

A U.S. Private Food Industry initiative
in collaboration with the U.S. Agency for International Development
through a Cooperative Agreement with the National Cooperative Business Association

Upgrading the Food Processing Industries in Developing Countries.

Why SUSTAIN?

SUSTAIN represents a successful collaborative effort between the U.S. food industry and the Agency for International Development (A.I.D.) to upgrade food processing in developing countries. It provides an excellent model for similar private-public sector joint ventures in health, agriculture and other areas of concern to developing countries.

Food processing is a major contributor to development. It serves multiple roles. Food processing can increase the available food supply by extending the life of perishable food products. It can improve the nutritional quality of the diet by making nutritious foods available the year round. It can lead to the growth of related enterprises in transportation, storage, distribution and marketing. And, it can produce much needed foreign exchange by creating value added products both for export and for internal substitution of imported processed foods.

The U.S. food industry has embraced the concept that freely sharing its expertise and knowledge is of mutual benefit to recipient and donor - to the recipient by improving current operations - to the donor by contributing to a healthier global future.

How SUSTAIN Works

A.I.D. missions and trade associations in developing countries publicize SUSTAIN's goals and activities. Executives of U.S. food companies with technical expertise and overall knowledge of the food industry serve as the SUSTAIN Steering Committee, providing guidance and overseeing activities.

Food related companies in developing countries submit their requests to SUSTAIN through the A.I.D. mission or a designated organization in their country. SUSTAIN screens all incoming requests and if necessary asks for additional information. Appropriate U.S. companies are then invited to respond.

Some problems can be readily resolved by providing information. Others require that consultants be sent. When a consultant is sent, the usual assignment is for one to three weeks. Upon completion of the assignment, the consultant prepares a report describing findings and making recommendations. Depending on need, some consultants may return for follow-up visits to ensure that recommendations have been appropriately implemented.

SUSTAIN Helps

Requests are diverse. Help may be needed to solve processing problems, to identify equipment needs and sources of new and used equipment, to train personnel in the use of new equipment and new technologies, to find new uses for indigenous commodities, to establish or improve quality assurance procedures, to control insects and rodents in food processing plants and to improve plant layouts and materials handling.

In the past, U.S. food companies, large and small, have provided technical assistance in the form of information, consultants and training to food processors in Africa, Asia, Latin American and the Caribbean.

SUSTAIN PROGRAM

WORKSHOP AND TECHNICAL ASSISTANCE: INTRODUCTORY QUALITY CONTROL/QUALITY ASSURANCE AND MARKETING

Uganda

November 6 - 14, 1993

by

SUSTAIN Volunteers:

Dr. John Nelson, Vice President-Science & Technology, McCormick & Company

Dr. John Troller, Section Head (retired), Procter & Gamble

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I. INTRODUCTION

During the SUSTAIN March 1993 assessment mission to Uganda, SUSTAIN volunteer, Dr. John Nelson (Vice President-Science and Technology, McCormick & Company) in conjunction with the Uganda Manufacturers Association (UMA) identified needs for technical assistance and training for food processors, government, and university personnel. Two of the areas identified were quality assurance/quality control and marketing. Improvements in the quality, safety, and nutritional value of locally produced foods would help alleviate nutritional deficiencies and health related problems and promote consumption of safe, nutritious foods by the local population. Improvements in the quality of locally produced food products and training in market research and development would also help expand market opportunities for these products on local, regional, and international markets. This should lead to increased sales and economic growth, which in turn alleviates poverty.

Dr. John Nelson and Dr. John Troller (Section Head, retired, Procter & Gamble) traveled to Uganda on November 6 - 14, 1993 to deliver workshop presentations on quality control/quality assurance and marketing and to conduct site visits to local organizations and food processors. The itinerary is attached in Appendix III. The organization of the workshop and site visits was a collaborative effort between SUSTAIN and UMA. Over 90 food professionals participated in the workshops. The participant list is attached in Appendix IV.

II. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

Our observations of Ugandan food products and the conditions under which they are produced and sold led us to conclude that the quality of nearly every product needs significant improvement in order to be competitive internationally. Currently, the food industry is in its infancy. Processed products are very basic and unsophisticated and routinely are marketed in small retail establishments. Because of the absence of refrigeration, perishable foods such as meat and dairy products are purchased by the housewife each day, a time-consuming task that must necessarily divert her from other tasks. The lack of quality is one of the principal impediments to the consumption of safer and easier to obtain and prepare processed foods.

B. Recommendations

1. It was obvious from opinions expressed during the Quality Assurance Workshop that quality was the responsibility of the Ugandan Bureau of Standards. We explained that in "Western countries" quality factors affecting safety or nutrition were usually considered to lie within the purview of the government. Non-safety quality was determined by the industry itself and the consumers willingness to accept its products. To illustrate this point, a concentrated effort to improve quality within a specific model industry could be undertaken. SUSTAIN might assist by establishing criteria for this selection. SUSTAIN could provide volunteers to establish safety and quality control programs--from raw materials supply through processing to packaging and shelf stability. A quality standard/HACCP manual could be written and appropriate means of quality could be identified by SUSTAIN volunteers.

2. Ugandan food manufacturers should consider producing value-added products for export. One way to do this is through the contract manufacture of specific products for international corporations for sale within the region. SUSTAIN could facilitate this by helping to set up quality assurance programs in specific industries, as well as providing other technical assistance. Where potential opportunities for contract manufacturing (or other business opportunities) arise, SUSTAIN volunteers are often in an unique position to be able to facilitate communications between these LDC companies and U.S. food companies.

   Emphasis on value added products would utilize Uganda's excellent agricultural position, its relative political stability, and its desire to produce quality products to attract entrepreneurs. Thus, foreign technology is

obtained along with cash flow and employment with very little investment exposure. Strong quality programs in specific industries would help attract interest from foreign food companies.

3. Workshop participants seemed surprised that their counterparts in related industries were encountering the same problems that they were and that there might be ways that they could work together to improve the quality of their products. To facilitate this, we recommend that UMA sponsor an annual food science conference devoted to quality, packaging, etc. at which university students could present papers and where food industry personnel could exchange information. UMA has proven that it can organize endeavors of this type and would be the logical group to work on this or the Food Science Dept. of Makerere University might attempt this since their students will benefit from the exposure such a conference would provide. A Pan-African food science conference could also be organized. SUSTAIN could assist by providing speakers that could participate in seminars on specific topics of interest to Uganda's food industry.

   Also, there currently are no Institute of Food Technologists (IFT) affiliate organizations in Africa. SUSTAIN should take the lead in encouraging and facilitating a Ugandan organization of this type. The value of an association with IFT could be a great help in improving the prestige of the Ugandan food industry.

4. The cost of marketing seems to be prohibitive. Market data does not exist. Communication means are lacking--roads, telephones, and ineffective advertising (there is very poor advertising on television). They need professional services. Packaging is poor. The chain of distribution from manufacturers to retailers is not reaching the villages, and there are no marketing strategies in most industries. To promote the products, retailers need sales training.

C. Next Steps For 1994

<u>Late Spring/Early Summer</u>

Three Day Workshop

Day 1 -- HACCP shortcourse for food processors and Bureau of Standards

Day 2 -- Development of generalized HACCP and quality standards for fish processors (limited to 30 participants from industry and Bureau of Standards)

Day 3 -- Development of generalized HACCP and quality standards for fruit and vegetable processors (limited to 30 participants from industry and Bureau of Standards)

This trip will also include the opportunity for future activity planning with government officials and USAID/Kampala. Suggested topics are:

- Developing "organic" (pesticide and herbicide free) produce production in Uganda
- Used and donated food processing equipment identification and development of an efficient transfer system to Uganda
- Developing food standards and food safety standards as part of a cohesive regulatory system.

<u>Fall/Early Winter (timed to UMA Trade Fair)</u>

Three Day Workshop

Day 1 -- Practical marketing shortcourse (including market research and sensory evaluation)

Day 2 -- Review marketing and sales presentations at UMA International Trade Show (including practical sensory evaluation of products)

Day 3 -- Discuss experiences of Day 2 and

Morning Session -- Develop Pro Forma marketing plans for industry segments (fish, fruits and vegetables, etc.)

Afternoon Session -- Utilize Export Policy Analysis and Development Unit (EPADU), Uganda Export Promotion Council (UEPC), and U. S. Department of Agriculture (USDA) to present market analyses for industry segments

III. WORKSHOP

The format of the workshop included presentations by key officials from various organizations in Uganda, lectures by Drs. John Troller and John Nelson, a question-and-answer period, group breakout sessions for discussions, and report back to the plenary session. Since the more than 90 attendees were of diverse backgrounds and represented a multitude of food processing industry segments, they were divided into four discussion groups dealing with the following food segments:

- Group 1 - Dairy, meat, and fish
- Group 2 - Fruit and vegetables
- Group 3 - Cereals and edible oils
- Group 4 - Sugar, honey, and spices

Workshop materials prepared by Drs. John Troller and John Nelson are attached (Appendix V).

The Chairman of first workshop session was Dr. Kasirye-Alemu, Director of the Uganda National Bureau of Standards. She introduced Mr. Francis Kasiryre, the permanent secretary to the Ministry of Trade and Industry. He made a presentation which was prepared by the Deputy Minister and included a good review of the food situation in sub-Saharan Africa and the problem in Uganda of serious balance of payments due to overdependence on coffee prices. Coffee represented 65% of the budget and income in 1993 was virtually nil. He indicated there was a need to improve the trading environment through training and by supporting institutions. He also discussed the personnel and the need to be aware of environmental contaminants. His position was that food products require stringent quality control and that there is a real opportunity for Uganda. He stressed the importance of the National Bureau of Standards and formulation and promotion of standards as well as quality.

John Nelson presented an overview of SUSTAIN, and John Troller commented in general about the need for quality control and quality assurance in the food industries.

Dr. Alemu then made a presentation on the Uganda National Bureau of Standards, which was established in 1989 based on the act of 1983. She described the activities of the Bureau of Standards under seven headings, namely, finance and administration, metrology, testing and residues, standards and formulations, quality assurance, communications, and computer management. The Bureau cooperates with the Africa Regional Organization for Standards. To date, they have completed 31 food standards.

Following workshop presentations by Drs. John Troller and John Nelson, the participants were divided into four discussion groups dealing with different segments of the food industry. The following points were discussed in these groups:

Group 1: Dairy, Meat, and Fish

This group expressed great concern that there is not strict quality control from farm through processing for milk. Small-scale farmers create problems because of unsanitary conditions, lack of coolers, and lack of electricity.

There is a feeling that consumers have a wrong perception of milk. The national dairy people really do not have a marketing department. In addition, distribution is limited to cities and costs are high. A suggestion was made to have the City of Kampala provide market space for Ugandan products.

The meat processors are concerned that there are non-uniform raw materials and the lack of a good variety and quality of spices. The poor abattoir and transport for meat were noted, as well as concern about the availability of good packaging material for finished product with the opportunity to have good graphics on the packaging.

In the meat industry, the cost of production of sausages is very high due to the lack of the economy of scale. Packaging is a very difficult procurement problem and reaching the market is difficult.

The low bacterial requirements on fish dictate that high-quality water be used. There was a feeling that standards for water should be proposed.

There is no local market for fish fillets, so export to the EEC and Australia seems to be the only way to go. There is a need to emphasize quality control in the fishing industry.

Group 2: Fruits and Vegetables

In regard to tomato products, there are problems with settling of solids and the feeling that the varieties grown do not have the deep red color needed for the tomato products. Better seeds for better varieties seem to be an issue. Particularly, the variety for catsup manufacture is not the correct one.

Regarding juices, settling of cloud during storage seemed a necessity, but there was a feeling that this is a natural happening and that consumers need to be educated.

There was interest in small-scale juice extractors and in making wine from fruit, but there was clear lack of availability of fermenters.

Participants mentioned the need for solar dryer construction materials and information on the availability of preservatives.

The comment was made that since canning costs are prohibitive, it is difficult to preserve mushrooms. All the fruit and vegetable manufacturers were concerned about adequate packaging materials and the high cost of importing packaging materials.

It is a buyer's market. Consumers have varied standards. Individual marketers must find out what buyers want and they need consistent quality identity.

Comments were made about Masaka fruit processors. The product is not being displayed and they need to improve their identity.

Bottles are used improperly in the packaging of fruit products. For example, Coca-Cola bottles are used for non-Coca-Cola products. There seems to be a desperate need for a glass manufacturing facility to reduce the cost of glass containers. There is very stiff competition and young Ugandan industries need protection.

Funds for research are needed. There are city markets, but how are manufacturers going to exploit rural markets? There was a feeling that most products lack the proper presentation (good labels, etc.).

Group 3: Cereals and Edible Oils

This group expressed concern about rice milling. There is a problem with the rubber rolls breaking up and resulting in pieces in the finished product.

The comment was made that for maize milling, the material should be as white as possible.

A statement was made that 85% of the wheat for use in bakeries is imported. Possibly this could change to more home-grown varieties. (See also section on Hot Loaf Bakery visit.)

Comments were made about beer bottle quality and how badly bottles are treated after consumption.

Some concern was expressed over coffee roasters and the need to specify standards for roasters and standards for coffee beans. Contamination of beans with husks is a particular problem.

Due to the unavailability of spare parts, there is a desire to have some agency, such as UMA, establish a pool of spare parts.

There was general agreement that it is difficult to procure good raw materials. There should be work done to lower the taxes on imported chemicals.

The group felt that quality control is not held in high enough esteem by the general managers. Quality control managers should be brought into plant management communications.

The farmers use polyethylene bags for a lot of grains, and the moisture content is high. The use of gunny sacks would allow water evaporation at a greater level.

For edible oils, the plastic bottle production is erratic.

For processing facilities, the cost and availability of electricity are real problems.

There is a lack of ability to train the staff of various processors.

The net weight on bags is not enforced, and there is erroneous information.

It was stated that cereal buyers should set their own standards.

The flour grown in the western part of the country does not produce good baking flour, and they need to import better varieties of seed.

Group 4: Honey, Sugar, and Spices

There is a great variability in sugar and honey. Honey is tested only for viscosity. There is concern over the color of locally produced sugar, and they suggested establishing a central testing unit for service to the food industry. They echoed the plea that quality control managers should have more say in the operation of processing facilities.

There are too many people in the business. There is a lack of consumer awareness due to the lack of knowledge of these products. Production is low and prices are high, which make a poor market.

Pesticides

Some discussions were held throughout our visit concerning the growing use of pesticides in Uganda. During the tour of the International Trade Fair, Drs. Nelson and Troller noticed at least one vendor displaying agricultural pesticides and herbicides. They discussed this the next day with Keith Sherper, who sympathized with their concern regarding the use of these chemicals. Drs. Nelson and Troller indicated that the UMA might wish to emphasize the beneficial aspects of marketing products from pesticide-free zones. Mr. Sherper agreed that it would be very desirable to keep chemicals out of Ugandan food. This subject came up at least one more time during the trip and again during the debriefing with Holly Wise (USAID).

IV. SITE VISITS

Food World Industries

Food World Industries, established in 1986 or 1987, produces sausage, salami, smoked fish, ham, bacon, and a sausage similar to bologna. They also sell fresh frozen meat cuts, including pork chops. It started as a very small cottage industry and has grown but still remains fairly small.

Mr. Kenneth Wadewa, manager of the plant in Kampala, explained their product line and provided a plant tour where he introduced Mr. John Angolio, who is the production manager.

The plant has a retail shop in front with the manager's office a short distance behind, and the manufacturing facility toward the back of the lot. The equipment in the plant includes a small silent cutter, the stuffer, a grinder, and a controlled smoke/cook house, which is about 20 cubic ft. In addition, there is an old-fashioned smoke house across the driveway. Their storage cold room capability is quite limited although adequate for the small size of the business. They are eager to expand and inquired about the possibility of getting a bigger cutter, more capacity for the cooker/smoker.

They have a fairly broad line of products. In their retail shop, they were offering a 10% discount for a purchase of 5 kg or more of total product. Kenneth pointed out that they advertise in the yellow pages. The shop manager, Raymond Otika, was out of town.

Their customers are clearly upscale, some from the U.S. Embassy, hotels, and other expatriates. Kenneth explained that they had a good business with Russians who were buying meat products to take back home to Russia.

Kenneth asked Dr. Nelson about his facility. Dr. Nelson suggested increasing the level of lighting throughout the manufacturing parts of the facility. They also talked a great deal about the packaging, the casing, and getting a better print job on the casing, and also to print packets. The packets in which they are packaging sausage are pre-sealed on three sides. After the sausage is packed into the packets, the fourth side is heat-sealed. It is a very high-integrity package, but it doesn't have the graphic quality of an upscale product.

International Trade Fairgrounds

The trade fair ran from Friday, November 5, through Tuesday, November 9. The fairgrounds on Sunday were literally mobbed and at 5:30 p.m., the line at the entrance extended at least two long blocks. Since a previous visit to Uganda in April, the fairgrounds have been expanded extensively, and there were many additional, temporary booths constructed for the trade fair. A complete listing of exhibitors is available from the UMA.

There were booths by the Uganda Bureau of Standards and the Export Promotion Council as well as booths from other neighboring countries. The automobile dealers, the breweries, the dairy, and the Ugachik people who

are raising chicks for the poultry industry were all represented. Mr. Aga Sekalala had a series of booths in which he featured vanilla seedlings and many agricultural chemicals. There was a women's area where a lot of women's cooperatives were selling crafts and other products. Several brands of catsup and chili sauce were displayed at the fair. The Maganjo grain millers were there in grand style as were many of the companies that were visited in April. Jewel of the Nile products as well as the products of the Reco Company from Kasese were on display. Drs. Nelson and Troller were to visit the Reco plant, but at the last minute Reco opted out. They then changed directions and agreed to go to Tororo in the northeast to visit three or four facilities.

USAID, Kampala

Drs. Nelson and Troller had a stimulating meeting with Bruno Komakech, Holly Wise, and Keith Sherper who briefed them on current projects. Mr. Sherper described some of the new programs coming in to the Mission that are slightly different from some of the projects phasing out. There is still a tremendous interest in non-traditional exports. He mentioned that the papain manufacturing at Reco Industries was entertaining some interest from France.

They talked about the KREPS facility in Masaka and the possibility of bringing in used equipment. The problem shared with the Mission was that although Drs. Nelson and Troller might be able to get donations of equipment, they could not expect the donor to pay the containerization and freight to Uganda. Mr. Sherper stated that the shipment of used food processing equipment from the U.S. needs to be managed carefully and suggested that this role might be filled by SUSTAIN and/or NCBA. As a starter, he suggested that a rough estimate of shipping costs be obtained but warned that intra-regional costs (Mombasa to Kampala) were especially high. Throughout these discussions, Drs. Nelson and Troller had the impression that USAID might consider financial support of at least part of these expenses, although this was not specifically stated.

They discussed SUSTAIN's possible role with the Uganda Bureau of Standards in helping them set standards and conceptualizing the overall food regulatory system for Uganda. They talked a bit about the dairy industry and the marketing infrastructure that was needed. The objectives of SUSTAIN mission during this trip, namely, site visits and seminars on quality assurance/quality control and marketing were reiterated.

Uganda National Council for Science

Dr. "Zero" M. Nyiira, Executive Secretary of the Uganda National Council for Science and Technology, explained how Uganda was at a crossroads, and that President Moseveni supports technology for development. He also indicated that the UMA and the Council were linked in common goals. He pointed out that the Council was the only government agency for science and technology. Two of the strategic technologies of interest are biotechnology and packaging technology. Secondly, he felt that the Council was set up to promote science and technology, to develop a strategy to implement introduction of science and technology, and to advise their own people on the use of science and technology. He stated that there was a growing realization that without science and technology, Uganda simply would not develop, and that the development of science was inextricably linked to industrial growth.

Another important objective of the Council is training and identifying the gaps to be filled and to identify the needs for the future. They have recently worked with Case Western, Kansas State, and the University of California. They also work with the Uganda Investment Authority to plan the sustainability of technology. They have a rural technology implementation project and a mechanism for employing senior research fellows who can be attached to the Council for temporary duty.

Uganda National Bureau of Standards

Drs. Nelson and Troller had a very enjoyable meeting with Dr. Eve Kasirye-Alemu, the Director of Uganda National Bureau of Standards. They discussed product consistency and the need to stress the individual responsibility

for quality. They discussed four of the major food processing industries; namely, fish, cereals, juices, and dairy. They talked about how the average consumer in Uganda prefers white flour, but that nutritionally it would be much better if the consumer could be introduced to a whole grain flour. She stated that it was difficult to communicate the importance of good nutrition and diets when 71% of the female population was illiterate. Oral presentations by extension workers, however, have largely solved that problem. Judging from our observations, food appeared to be widely available, and no outward evidence of malnourishment was seen at any time during the trip.

Uganda Export Promotion Council

Mr. Silver Ojakol explained that Uganda Export Promotion Council (UEPC) is another agency under the Ministry of Trade and Industry and that they do market research and promotion. They provide services that relate to pricing, packaging, and market requirements and they also offer training.

UPEC was very active in the UMA's trade fair and they work with the U.K., Germany, and Italy and are very interested in nontraditional exports. Mr. Ojakol pointed out the country has gained in nontraditional exports. He also mentioned that in the PTA (preferred trade area), they mainly export grains and pulses whereas to Europe they are exporting oilseed, fish, fruits, vegetables, hides and skins. He provided some data--1990, 1991, and 1992--showing that bean exports have gone down, pulses have gone up slightly, cereals have gone up slightly, whereas fish has gone from about 1.3 million in 1990 up to 3.2 million in 1991 and 4.6 million in 1992. Fruits and vegetables actually declined from 1990 to 1992. He also pointed out that packaging is a real problem for fruits and vegetables.

Makerere University

Professor William Kyamuhangire, Acting Head of the Food Science Department, explained that one of the highest priorities for the University and the country was medicine, and that the second priority was food science. They have 16 new entrants into the food science program, which brought them to a total of 86 in all four years of the program. Fourteen students will be in first graduating class this year. He made quite a pitch to the people attending the seminar that these graduates would be available. He further stated that every attempt should be made to hire them and keep them in Uganda because of the need for practical food science.

Drs. Nelson and Troller discussed some of Dr. Kyamuhangire's expectations for the seminar and learned a bit about curriculum and the textbooks being used at the University. They teach from the FAO monograph series, which is not very up to date in its approach to a number of food related subjects. He also mentioned that they need a new building and are hoping that the Japanese government would provide funds. Mr. Kyamuhangire said that the PTA will result in higher quality being produced by the manufacturers in Uganda.

Mr. Kyamuhangire is the only faculty member (of seven) that was present during their visit. Two professors were on sabbatical leave; and when they return, Mr. Kyamuhangire will leave for Norway to begin work on his Ph.D. degree.

Dairy Corporation

The Dairy Corporation plant's average intake of milk is about 4,000 liters per day. Production levels are very erratic with heavier production occurring during the rainy season. This very small factory turns raw milk into butter, cheese, ice cream, and yogurt. Fresh butter is made from fresh cream. The dairy also churns sour cream butter, which is subsequently used to make ghee. They use freeze-dried cultures to make cheeses. Currently, they produce maribou, cheddar, gouda, and carrick. During the plant tour, they finished the production of several flavors of ice cream. They have a French ice-cream packer. Their flavors are supplied from Switzerland by APV.

The plant equipment is of very small scale, and this dairy was actually set up as a teaching and demonstration unit. It is now functioning as a commercial producer and seems to be very well managed.

Raw milk is tested with a resazarin dye reduction technique to make sure that the bacterial load is not too high. They use hydrometer tests for specific gravity control, and the cows are generally cross breeds which produce milk at about 32 degrees, so some water can be added. Their requirement is that butter fat not be less than 3.8% and lactic acid content not exceed 0.18%. The raw milk is pasteurized, centrifuged, and homogenized. The equipment includes tanks from a British supplier and a Danish homogenizer. In order to make sure that the pasteurization is adequate, a one-hour resazarin test and a phosphatase test are conducted on the pasteurized milk. Pasteurized milk is packaged in flexible pouches of various sizes.

This tour was conducted by a very knowledgeable man, who gave a briefing on dairy business in Uganda. He indicated that Uganda processes about 80,000 pounds per day, but that there were probably at least 120,000 pounds of milk solids available per day in Uganda. The major problem is that farmers can undercut prices substantially by selling raw milk in the market rather than selling it to the dairy, having it processed and selling it back to the consumers. The information was similar to the problems Keith Sherper shared with Dr. Nelson and Troller the previous day.

Ocudung Agencies Ltd.

Drs. Nelson and Troller had a very brief visit at Ocudung Agencies Limited, since the Managing Director was not available. Ms. Katakwi, who was in charge, explained that their business was basically soybean oil extraction, although apparently at times they may have processed sesame (simsim) and peanut. This appeared to be a small-quantity operation. The personnel hand-sorts the soybeans.

Their processing facility includes two mills, a filter press, and a grinder for grinding the soybean cake. The soybean cake is sold for animal feed. They purchase their labels from Kampala, and they source their soybeans locally. Soybean oil is sold locally in one-liter and three-liter containers and they experience severe price competition from Kenya.

Gomba Fishing Industries Ltd.

The facility, located on the shore of Lake Victoria, is quite large and well kept. Mr. B. K. Mani, indicated that he had only been with the operation for a few months. Since the managing director was not available, he did not have permission to provide a tour of the operation.

Their main product from the lake is Nile perch. They sell frozen fillets to the European market. Mr. Mani indicated they had customers in Spain, Germany, France, Belgium, and Holland. The filleting is done by hand, but the fish is skinned with machines. They have a large ice-making facility rated at 30 tons per day, 20,000 of which is block form and 10,000, shaved. They ship reefer containers from Mombasa; it takes 30 hours to get the containers to Mombasa.

There was a bit of difficulty competing with the Kenyan fish producers. He explained that the fishermen fished almost an 8-hour trip from the Gomba facility whereas where they were fishing was only about 5 hours from the Kenyan port.

In answer to John Troller's question on the possibility of cultivating the Nile perch commercially, Mr. Mani stated that no one in the region had as yet tried to do this. These perch are very large--110 kg is the largest caught in recent years!

Hot Loaf Bakery

Drs. Nelson and Troller arrived at the Hot Loaf Bakery during a very busy time at the plant. They were hosted by Mr. Francis Kakurugusi and Mr. Matano Kodawa, a Kenyan, who is the Technical Training Manager for Hot Loaf. Hot Loaf is the second largest baker in Uganda--Tip Top is the largest. The latter has a semi-continuous

process whereas Hot Loaf is strictly a batch operation both in pastry and bread baking. While Tip Top is much larger, it currently is operating at only 40% of capacity according to Mr. Kakurugusi. Hot Loaf makes a full line of bread (some fortified with soy flour) and roll products as well as sweet goods. They also produce deep-fried meat pies.

The baking facility has a number of different types of mixers, and most of their baking is done in deck ovens. Flour is obtained from various sources. They buy from Uganda Milling but have significant "foreign and extraneous" matter problems with their product. Their best impact flours come from Saudi Arabia. Flour from the EC is of very poor quality, they stated. Soy enrichments are obtained from Ugandan suppliers. The level of baking knowledge is quite high. Mr. Kodawa is a graduate of the American Institute of Baking and is quite knowledgeable about products and production.

They have a retail shop in front of the factory that was doing a very good business about 11 a.m. They really have a strategy to take advantage of the up market for sweet products and are doing very well with wholesale sales to organizations such as the Sheraton Kampala.

Distributors buy supplies of bread which they pack in corrugated containers and resell in shops or to street vendors. Hot Loaf owns only two trucks. It looked like a very effective distribution system.

Elgonia Industries Ltd.

Drs. Nelson and Troller were hosted by Mr. Cassy M. Bukawa. Elgonia Industries Ltd. was started just two years ago and currently processes tomatoes, chilies, passion fruit, papaya, orange, and mango and also roasts coffee. The tomatoes they process are grown locally and the farmers can harvest as many as four crops per year. The passion fruit is a natural variety and there are plenty of seeds available. They get two crops per year. They also produce juice, which they hold in bulk to extend their seasons. The coffee roasting operation is a small facility, but is in good shape, and it was rated at about 80 kg of roasting per 45 minutes. He pointed out that they roast both Arabicus and Robusta coffees.

The organization is financed through EEC Credit at an interest rate of 28%. They are only operating at about 10% of capacity. Obviously, they can expand to three shifts.

Mr. Bukawa listed three problems, the first being the economy of scale. Although he has a very nice facility with a simple process flow, it is not big enough to really give him the benefit of larger purchasing and continuous manufacturing. The second problem is the cost of packaging material, which represents 66% of his total product costs. The third is taxation. He feels the tax is oppressive, especially because of competition with Kenyan producers, who are able to move product into Uganda with virtually no additional transportation cost.

Mr. Bukawa has a lot of good ideas about marketing; he talked about using radio and newspaper, stickers for autos, and handing out caps. He was especially enthused about the International Trade Fair. They discussed marketing and Dr. Nelson suggested some point-of-sale techniques that Mr. Bukawa might employ in some of the stores in Kampala.

Nagongera Millers

This manufacturing facility was the surprise of the trip. The facility is located in the back streets of Tororo. There is a complete Buhler corn mill set up in as fine a design as you could expect. They have two Buhler roll stands and two sifter sections. The capacity is 45 - 50 tons per day and they can produce three grades of product. They have extensive packing capability for bags- they can pack all size bags from 2 kg up to 100 kg.

Mr. Richard Kobel is the manager in Kampala, and he pointed out that this operation was started in 1987. It is currently not fully utilized, but in years past it was used to a greater extent when they were supplying the army

with white corn meal.

This is a beautiful Buhler mill and cleaning operation. This organization could benefit from an exercise in business planning and marketing.

South Bukedi Cooperative Union

The first facility Drs. Nelson and Troller visited was one in which they ginned cotton. The manager, who was very new to the organization, explained the ginning operation and mentioned that the cotton seed was taken to the extraction plant which was about 6 km further south. They processed cotton seed and sunflower, but that with the wet weather being late this season, there has not been a lot of cotton harvested as yet. Therefore, there was no seed for processing.

Mr. Stephen Ware, who is a trained chemist and a mathematics instructor, provided a tour of the extraction facility. It was quite obvious that the plant had not been run for some time. This was a facility built by SMET, an East German organization from Magdeberg. It is based on old technology with what looked like mostly black iron reaction vessels. Mr. Ware was looking forward to new ownership who is going to take over the refinery, rehabilitate it, and start it up again. The refinery is a large capacity facility once it is put back into shape.

Uganda Investment Board

Mr. Lessard, Uganda Investment Board, described the goals of the Board and presented a number of charts on the progress being made. He noted that, historically, the minimum invested has been $300,000. The incentives for investing, in addition to a "significant" but changing rate of interest, are tax exemption of interest on investments and the easy repatriation of dividends.

Mr. Lessard noted that members of the Board are chosen for their breadth of interest and experience, and that he has spent almost 40 years in the American banking industry. Thus far, he noted that 550 projects have been approved for funding since the Board's inception. These projects are worth about $1 billion in the aggregate. Dr. Troller asked Mr. Lessard what he considered to be Uganda's biggest problems in developing its food industry. He replied unequivocally that poor marketing was a significant problem that needed to be fixed before anything else could be undertaken.

V. REPORT BY UGANDA MANUFACTURERS ASSOCIATION

REPORT

UGANDA MANUFACTURERS ASSOCIATION CONSULTANCY AND INFORMATION SERVICES (UMACIS)

SHARING UNITED STATES TECHNOLOGY TO AID IN THE IMPROVEMENT OF NUTRITION (SUSTAIN) PROGRAM IN UGANDA

Quality Control/Quality Assurance and Marketing
November 6 - 14, 1993

PREPARED BY

Uganda Manufacturers Association

Consultancy and Information Services Limited

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INTRODUCTION

The SUSTAIN Program provides access to U. S. expertise in food processing so as to improve nutrition in the developing world. Technical assistance is provided at no charge by professionals, from U.S firms and Universities, who donate their time and expertise.

The SUSTAIN program runs in 38 countries in South America, Asia, Africa and Eastern Europe. In Uganda, Project SUSTAIN is working with the Uganda Manufacturers Association, UMA. The UMA will coordinate SUSTAIN activities with the Uganda National Bureau of Standards and the Food Science and Technology Department, Makerere University.

In March 1993, Dr John Nelson, Chairperson Project SUSTAIN and Mr. Jerry Brown of the U. S. Department of Agriculture/USAID came to Uganda to assess the state of the local food industry and to develop comprehensive action plans for follow-up work. Following this visit,

- A Product Packaging workshop was held from August 25 to 26, 1993. The workshop was conducted by Mr. Don Lindemann, Senior Packaging Engineer, Land O' Lakes, Inc.

- A Quality Control/Quality Assurance and Marketing workshop was held recently from November 10 to 11, 1993.

SUSTAIN ACTIVITIES
November 6 – 14, 1993

Dr John Nelson, Senior Vice President Science and Technology, McCormick and Company, and Dr. John Troller, retired Food Microbiologist, Proctor and Gamble were in Uganda from November 6-14, 1993 to conduct a food processors' quality control/ quality assurance and marketing workshop and to discuss with individual food processors principles of good marketing practice and quality assurance in the food processing industry.

Meetings

During their visit, Dr Troller and Dr Nelson met with the USAID Mission Director and staff and with heads of institutions and representatives from organisations involved in

developing and promoting quality and marketing of local agro-products. These were the Director, Uganda National Council for Science and Technology, the Acting Head, Food Science and Technology Department, Makerere University, the Executive Director, Uganda National Bureau of Standards and an official from the Uganda Export Promotion Council. These meetings and discussions enabled them to find out the capabilities and resources in place for the promotion of quality and marketing of agro-based food products.

Meeting with, Mr Keith Sherper, Director, Ms Holly Wise, Chief Development Officer and Mr Bruno Komakech, Private Sector Advisor, USAID Mission, Kampala.

During the meeting, the SUSTAIN team outlined ways through which Project SUSTAIN helps food processing industries and possible areas of collaboration of SUSTAIN with the food industry in Uganda. These include:

- Offering technical expertise and information to individual food processors and to institutions which are actively involved in food processing.

- Working with the Uganda National Bureau of Standards to develop a Hazard Analysis and Critical Control Point Program (HACCP) for the different sectors involved in food processing such as dairy, meat and fish, fruits and vegetables, cereals, among others. Education of farmers on the pesticides in use today, the banned and restricted pesticides on food crops.

Some companies have already received technical information through Project SUSTAIN. This includes information on papain extraction, orange varieties that will grow well in E. Africa, jams and jellies, sour milk handling, guidelines for purchasing food processing equipment, among others.

SUSTAIN draws its expertise and information from highly skilled volunteers from U. S. food processing industries, Universities and government organisations such as the USDA, Food and Drug Administration (FDA), and the Environmental Protection Agency (EPA).

Meeting with Dr. Z. M. Nyiira, Director, Uganda National Council for Science and Technology

Dr. Nyiira briefed the team on the objectives and functions of the National Council for Science and Technology, a government agency under the Ministry of Finance and Economic Planning.

The role of the Council is to guide and coordinate research activities throughout the country and to ensure that the limited funds available for research are used in the best way possible to spearhead the development and welfare of the people in Uganda. The Council works in close cooperation and coordinates all scientific and technological activities of persons, institutions, sectors and other organisations. The Council members include scientists of eminence in specialised fields of science and technology, officials from Ministries, institutions and organisations related to Science and Technology. The Council works with entrepreneurs, individuals and manufacturers, and is an adviser to the Uganda Investment Authority.

Meeting with Dr. Evelyn Kasirye-Alemu, Executive Director, Uganda National Bureau of Standards

Quality Control in the food processing industry should begin with emphasis on basic principles of hygiene. These are usually understood by personnel who work on-line in the company. There is need to emphasise to company executives that no marketing plan will work when a company produces low quality products. Company executives also need to know that quality does not begin with the end-product but starts on-line.
The following are some of the areas where assistance is needed in the different subsectors of the food processing industry:

- Quality assurance in the fish processing industry, proper factory layout and sanitary processing techniques. Quality assurance in these areas is mandatory due to the new EEC regulations in place for countries exporting to this region. Most fish processed in Uganda are exported to the EEC.
- New product development in fruit and vegetable processing.
- Processing optimisation and grain handling in cereals processing.
- Milk handling between the farm and the factory so as to reduce spoilage.

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Meeting with Mr. Silver Ojakol, Official, Uganda Export Promotion Council, UEPC.

Mr. Silver Ojakol, briefed the SUSTAIN team on the activities of the Export Promotion Council in promoting Uganda's non traditional exports. The Council conducts marketing research to determine the supply position of the commodities in the country and looks for markets for available products. UEPC also:

- Provides information on pricing and documentation of commodities.
- Establishes market requirements for the various products available for export

This information is disseminated through the Council bulletin and in seminars and country wide visits to exporters and potential exporters. The seminars are conducted in collaboration with organisations such as the Uganda Investment Authority, UIA, the Bank of Uganda, BOU, among others.

Meeting with Mr William Kyamuhangire, Acting Head, Food Science and Technology Department, Makerere University

During the meeting it was learnt that quality in local industries is difficult to maintain because most supervisors spend most of their time away from the processing line. This eventually leads to inefficiency in the company because quality maintenance and other processing decisions are made by unqualified and inexperienced personnel.

Company Site Visits

Food World Industries Ltd.

Location:	Plot 48, Sixth Street, Industrial Area, Kampala
Year of Establishment:	1987
Products:	Beef and pork products e.g. sausages, ham, bacon

Some of the problems faced by the company include the high cost of imported sausage casing. This greatly increases the cost of the products. The low quality locally produced packaging material used does not adequately protect the products.

Dairy Corporation

Location/Branch office:	Old Airport Road, Entebbe
Year of Establishment:	1959
Products:	Milk, cheese, butter, ice cream and yoghurt.

Milk is delivered from collection centres located in south west Uganda. Most farmers, however, prefer to sell their milk directly to consumers.

Dairy Corporation needs to attract more consumers. This is because many consumers of milk believe that the Corporation supplies reconstituted skimmed milk powder. The general consumer preference is for fresh, high content milk.

Hot Loaf Bakery, Kampala

Location:	Plot 89, Jinja Road, Kampala
Year of Establishment:	1986
Products:	Bread, cakes, pizza, pies, samosas and other confectionery

Hot Loaf Bakery makes products targeted at low, middle and high income earners. Hot Loaf is a growing company and has a high demand for its products. Product consumption is, however, limited to towns.

The main problem faced by the company is inconsistent quality and supply of wheat flour, their main raw material.

Ocudung Agencies Ltd

Location:	Plot 39, Vithaldas Road, Jinja
Year of Establishment:	1989
Products:	Edible oil, soy cake and milled groundnuts.

The company mainly produces soybean oil which is sold in the nearby towns. The company faces stiff competition from imported oils, which because of the lower taxes on imports, can afford to profitably undercut prices of locally produced oil. Some of the imported oil also comes into Uganda as aid and is therefore not taxed. It is then sold at low prices. The company imports most of its packaging materials from Kenya.

Gomba Fishing Industries, Ltd.

Location:	Plot 11-19, Nyanza Road, Jinja
Year of Establishment:	1988
Products exported :	Frozen fish fillet, fresh fish and fillet.

The products are transported in refrigerated trucks to Mombasa from where they are shipped to the EEC countries: France, Germany, Holland, Spain and Belgium.

Fishermen prefer to supply fish processors in Kenya who offer more attractive prices for the raw fish. As a result, Gomba Fishing Industries Ltd. sometimes faces shortages of raw fish.

Elgonia Industries Ltd

Location:	Plot 12, Bazaar Street, Tororo; Factory: Plot 23 Mbale Road
Year of Establishment	1991
Products:	Passion fruit juice and squash, tomato ketchup,chili sauce, mineral water and coffee.

Elgonia Industries was established on an EEC funded line of credit to create a market for farmers produce. Production capacity in Elgonia Industries is, however, low. This is due to stiff competition from cheaper imports from Kenya.

Problems faced by the company include:

- High costs of packaging materials
- High import duty rates have led to higher production costs.

Poor product promotion and consumer education about locally produced products have led consumers to prefer imported products, even when their quality may be very low. The company therefore needs to do educate consumers about its products through advertising and other product promotion activities.

Nagongera Millers and Farmers Ltd.

Location:	Plot 25/29, Oguti Road, Tororo
Year of Establishment	1986
Products:	maize flour and maize bran

The plant has a modern maize milling plant; plant equipment was manufactured and installed by BUHLER, a German company. Maize is bought from Busoga, Mbale and Soronko. The milled flour is sold to schools and institutions mainly located in Tororo, Mbale and Jinja. The plant has a capacity to mill 40 - 50 tons of maize/day. The company, however, needs to diversify its products and do market research so as to compete favourably with small millers who have lower production costs and therefore have a cheaper product.

South Bukedi Cooperative Union-Oil Mill

Location:	Nagongera, Tororo
Year of Establishment:	1988
Products:	cotton and sunflower seed oil.

The plant uses machinery and equipment which was donated by SVEK, a former East German company.

Problems faced by the company include the poor quality machinery installed in the company which has faced frequent breakdowns and is in poor condition.

The company needs assistance to enable it to improve its operational efficiency to take advantage of the current high demand for its edible oil. The Oil Mill has been leased to Mural Trading Co. Ltd. in Nakuru for a 5 year period.

QUALITY CONTROL/QUALITY ASSURANCE WORKSHOPS
November 10 - 11, 1993

A copy of the keynote address by the Deputy Minister of Trade and Industry, and papers presented by Dr John Troller and Dr John Nelson of Project SUSTAIN, Mr Barnabas Sekabembe, of EPADU, Mr William Kyamuhangire of Food Science and Technology Department, Makerere University and Mr William Musinguzi, Uganda National Bureau of Standards, have been attached in the annexes.

Group Discussions

Participants were divided into four groups, according to their sectors: Dairy, Fish and Meat Processing; Fruit and Vegetable Processing; Cereals and Edible Oil Processing and Sugar, Honey and Spices. In each group, participants discussed quality control/quality assurance and marketing problems affecting their different sub-sectors, and suggested solutions to the identified problems.

GROUP 1: DAIRY, FISH AND MEAT PROCESSING SECTORS

Chairman: Dr William Ssali, Director, Food Science Research Institute (FOSRI)
Rapporteur: Mr Olanya Joseph Okwonga

Group members observed that it is important for these industries to have adequate supplies of good quality water. This is because dirty water can be a source of food contamination in these industries.

The group also reviewed some of the problems faced by their industries. These have been outlined below:

Quality Control/Quality Assurance

Dairy Processing Sub-sector

Problems

(a) Most milk supplied to the dairy industry is produced by small scale farmers who do not practice high standards of hygiene during milking.

(b) It was also observed that there is insufficient pre-processed milk storage capacity. This is due to the limited number of collection and storage plants. As a result, most milk produced in distant/remote areas goes bad.

Recommendations

(a) The Uganda National Bureau of Standards (UNBS) should set up a national standard for water used in the food processing industry.

(b) Farmers should be educated on how to ensure good milk handling practices to minimise contamination of the raw milk.

(c) The Dairy Corporation should repair the cooling plants in its milk collection centres and also set up cooling plants within easy reach of milk suppliers. This will reduce spoilage of raw milk. It will also lead to an increase in the volume of milk supplied to the Dairy Corporation.

Meat Processing Sub-sector

Problems

(a) Companies making processed meat products receive raw meat of inconsistent quality. This is because there are no standard slaughter houses in the city where meat can be graded and thereafter sorted according to its quality.

(b) Ingredients such as spices added to the meat during processing are, depending on their cost and availability, imported from different countries. It is therefore difficult to maintain a constant and consistent supply of good quality spices. This leads to products of inconsistent quality.

(c) Lack of proper meat handling techniques especially during transportation which often leads to loss of quality.

(d) Packaging materials produced in Uganda are of low quality. The packages therefore do not adequately maintain the quality of the products. To prevent deterioration of the products due to poor packaging, some companies utilise the more expensive imported packaging materials. The high cost of packaging

materials increases the production overheads of these companies which in turn leads to a reduction in company competitiveness and productivity.

Marketing

Problems

(a) Most marketers do not know enough about their products and therefore cannot promote their products well or communicate effectively with their customers. Consumers therefore do not get to know the range of products available on the market. For example

(i) Members observed that although sausages are produced in Uganda, many consumers of this product prefer to eat imported sausages which they know about. This has made it difficult to sell locally produced sausages on the local market let alone penetrate the more quality demanding and highly competitive foreign markets.

(ii) Most people in Kampala and other places have a belief that the milk being sold by the Dairy Corporation is made from reconstituted imported skim milk powder. Most consumers therefore prefer to buy their milk directly from the farmers. The consumers believe that this milk is of a higher quality than that supplied by the Dairy Corporation.

(iii) There also is a general misconception in this country that our locally produced foods are inferior to similar products originating from other countries.

Fish Processing Sub-sector

(a) Most fish processors in Uganda today process only fish fillets. The fillets are exported mainly to the EEC, Australia and the Middle East. Foreign markets, especially the EEC, demand very high standards which some of the processors find very difficult to conform to.

Dairy Processing Sub-sector

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(a) A Marketing Department was established in the Dairy Corporation only last year. The department is still faced with a lot of problems some of which are administrative. Management is unwilling to spend money on product promotion activities.

(b) Due to high production costs, the price of milk and other milk products is high. This has greatly affected sales. Distribution of milk and milk products is limited to the city and the nearby towns. These are the only places where the people can afford to buy milk.

Recommendations

(a) Companies should budget for product promotion activities, advertising, public relations and personal selling. This will increase consumer awareness of their products and, if good product quality is maintained, it will eventually lead to increased sales and profits for the company.

(b) It was recommended that fish processors should look at long term investments and plan not only to produce fish fillets, but also aim to produce other fish products. Product diversification will not only generate more revenue for the processors, but will also ensure company survival in the long term.

(c) It was recommended that a special new products market, where new food products can be introduced on the market, be established in Kampala. This could reduce the high costs of new product introduction which have to be met by individual processors.

GROUP 2: FRUIT AND VEGETABLE PROCESSING

Chairman and Rapporteur: Mr. William Kyamuhangire, Acting Head, Department of Food Science and Technology, Makerere University.

The group had participants from fruit and vegetable processing industries, soft drinks industries, wine making industries and those planning to invest in this product area.

Quality Control/Quality Assurance

Problems

(a) Tomato ketchup and sauce manufacturers reported on shelf darkening of their products. Product yields are also found to be low for a given amount of raw material input.

(b) Manufacturers also reported settling and sedimentation in most processed tropical fruit juices especially pineapple and passion fruit juices. Consumers usually believe that the drinks are of low quality.

(c) The small scale wine makers indicated that they do not have juice extractors and fermenters.

(d) Proper packaging materials for processed fruit products, especially glass bottles and jars are not locally available. Many fruit processors are therefore forced to import their packaging materials which increases their production costs.

Recommendations

(a) The darkening in processed tomato products could be due to contamination with iron introduced from the non-stainless steel equipment used in the processing. To prevent this therefore, manufacturers should use stainless steel equipment for food processing.

(b) Output in the industry can be increased if the tomato variety suitable for ketchup is used. It was recommended that manufacturers work with one of the agricultural research institutes, Kawanda Research Institute and Namulonge Research Institute to identify the variety of tomatoes suitable for processing. The processor can then contract farmers to grow it for his company.

(c) Whereas it desirable to keep the fruit juice cloud stable and efforts should be made to keep it so using stabilizers, it is important to educate the consumers that settling of this cloud does not mean spoilage. This factor can be exploited to the processors advantage because settling of the cloud shows that the juice is processed from real fruit.

(d) The wine makers were requested to contact the Indian High Commission for low cost, small scale screw juice extractors manufactured in India which can work very well with pineapples, and can easily be adapted to Uganda's conditions. Local plastics manufacturers can be contracted to make containers which can be used as fermenters.

(e) The Uganda Investment Authority,UIA, and the UMA should encourage entrepreneurs to establish a glass manufacturing plant and other packaging companies in Uganda.

Marketing

Unlike in the past, the market is now consumer driven. It was therefore noted that so as to remain competitive, the food processors need to adjust to the current demands of the markets and give consumers what they want.

Problems

(a) Manufacturers reported that some products they produce are not popular. They therefore incur losses due to low sales.

(b) Masaka Food Processors, producers of CREPS, a pineapple drink, reported that usually consumers do not get to know that their product is available on the market. This is because their product is not displayed in many Kampala retail outlets. They also reported that retailers do not adhere to the storage guidelines displayed on the bottles. This often results in product deterioration.

(c) Bottles used for packaging juice, beer and soft drinks are recycled. However, many consumers use the same bottles for handling other products some of which would be harmful if ingested e.g. paraffin.

(d) Most products are facing stiff competition from lower priced imports which may be of lower quality. This is because of the high taxes imposed by government on locally manufactured products.

(e) Most locally processed food products are poorly presented due to lack of good labels and packaging materials. Also, the manufacturers do not have technically capable personnel to develop presentable products.

(f) Food processors in Uganda face a general lack of information on markets and available processing technologies for their products.

Recommendations

(a) Manufacturers should invest in market research to ascertain the needs and preferences of targeted consumers.

(b) Manufacturers should carry out product promotion campaigns to increase public awareness about their different products, and on how the products should be handled by retailers and presented to consumers. It was noted that the pineapple product, CREPS, is not properly differentiated from other drinks on the market. The trade name CREPS and the shape and size of the bottle is similar to products by other soft drinks manufacturers such as PEPSI, SCHWEPPES and COKE.

(c) Different segments of the market have different needs. Marketers should identify these needs so as to target this market and position their product so as to attract the consumers for which they are intended.

(d) Bottles are misused because there is no glass manufacturing industry in Uganda. In the short-term, the public should be educated on the hazards which could arise from misuse of these bottles other than for their stipulated products.

(e) It was recommended that the indigenous industries should be promoted to compete favourably with well established foreign industries.

(f) It was also suggested that in order to be competitive there is need for increased investment in research and development in the Ugandan industries. Joint research between Industries and Research Institutions such as the Food Science and Technology Department, Makerere University, should be encouraged. Industries could also assist in financing research activities since they are the main beneficiaries of the research findings.

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(g) In order to compete in big markets like the PTA, the Ugandan manufacturers should consider going into joint venture partnerships with established foreign manufacturers who have a proven track record.

(h) If they are to survive in this competitive market, food processors must employ technically capable personnel to produce quality and presentable products.

(i) Some of the information required by the processors can be obtained from the UMA and the UNBS. EPADU, UEPC and the Food Science and Technology Department, Makerere University also provide information on markets, product quality, etc, that would be of interest to the food processing industry.

GROUP 3: CEREALS AND EDIBLE OIL PROCESSING

Chairman and Rapporteur: Mr. B.M. Sekabembe of EPADU

Quality Control/Quality Assurance

Problems

Cereals and coffee processing subsectors

(a) Chipping of metal rollers used during milling contaminate the finished products.

(b) During coffee processing, some coffee processors instead of grinding the coffee use hammers made of materials such as iron, that poison the roasted coffee.

(c) Some coffee beans sold to the processors are adulterated with coffee husks. The husks are harmful to human beings.

(d) Maize millers produce pure white flour which has low nutrient content.

(e) About 85% of the raw materials for bakeries, especially wheat, are imported. This wheat is, however, usually found to be of lower quality than the suppliers claim.

Recommendations

(a) Millers and grinders face a serious lack of spares for their machinery. The millers should order spare parts, through a single purchasing unit or organisation. This would considerably reduce the costs of the spare parts.

(b) Regulations should be set up to prevent the use of iron rollers and iron hammers during milling.

(c) UNBS should set up quality standards for roast coffee and ensure adherence to them. Coffee buyers should also ensure that they only buy beans of acceptable quality.

(d) Consumers should be educated on the advantages of brown maize flour. Millers of brown flour should inform consumers about the nutritive quality of their products.

(e) Raw material importers should always check their raw materials before using them and if they are not of the desired quality, should forward their claim for compensation from the SGS, which issues the verification certificates from suppliers.

(f) Importers of raw materials should also do business with reputable companies so as to avoid being cheated.

(g) Most food processing industries do not have quality control laboratories. This is due to the high cost of equipment and chemicals required for use in these laboratories.

Quality monitoring is essential in all food industries and management should aim at establishing quality control facilities, however small.

The UMA should seek a reduction in taxes on chemicals that are required for use in quality control laboratories. This will considerably reduce the costs of these chemicals.

The UNBS should start a journal on quality assurance in the food industry. This journal would have articles that would educate consumers and food processors about issues related to quality assurance of food.

Marketing of Cereals and Edible Oils

Problems

(a) It has been alleged that the cooking oil imported into the country under the Agricultural Cooperative Development International (ACDI) PL-480 programme is killing the edible oil industry in the country.

However, a study carried out to establish if the edible oil imported under this programme was killing the local edible oil industry found the allegation to be false.

(b) There is a lack of suitable packaging for cereals and unreliable supply of packaging materials for edible oil in the country.

(c) Unreliable supply and high rates for electricity are raising the production costs for industries.

(d) It was observed that screen printing on containers which is cheaper than printing paper labels is not widely used. There is a need therefore to promote this labelling which also reduces pirated products on the market.

(e) The soft wheat grown in Fort-Portal (Kabarole District) has been found undesirable for some baked foods; its flour does not rise enough. The wheat is also very low in protein content and is not white enough.

Recommendations

(a) Cereal buyers should import sisal gunny bags for the farmers to buy. Oil producers should contract reliable manufacturers to supply them with packaging materials.

(b) Industries should be authorised to seek compensation from the Uganda Electricity Board, UEB, for losses incurred because of power shedding. However, manufacturers should also be ready for such eventualities by installing standby generators on site.

(c) There is also a need for the UNBS to insist on well labelled products to ensure that their origin and manufacturers are known. This will ensure that corrective measures can be taken in the event that a product is found to be adulterated.

(d) Farmers should also be encouraged to plant the hard wheat seed strain if it is found that this wheat variety can thrive in Uganda.

It was also observed that the high taxes imposed on locally manufactured goods are making Ugandan products uncompetitive on the market, encourages smuggling of cheaper products into the country, and thereby kills our young industries. A case in point is bread from Kenya which is untaxed while the wheat flour for Uganda-made bread faces 20% import duty and 20% sales tax.

There is a great need for members with common problems to form sub-sector committees under the UMA. Their unified voice and strength will help to solve problems that beset many of our industries and will thus help in the developing of a strong and vibrant manufacturing sector. (N.B. Sector subcommittees now exist under the UMA to help members with their unique problems).

GROUP IV : SUGAR, HONEY & SPICES

Chairman: Mr William Musinguzi, Uganda National Bureau of Standards
Rapporteur: Mr John Isodo, Sugar Corporation of Uganda, Lugazi (SCOUL)

(a) Companies have a Quality Assurance Department which is supposed to:

(i) Create quality systems and routines and set up quality standards
(ii) Control the production process in order to achieve the specified quality goals.

In local industries, these functions are performed to varying degrees of satisfaction. All group members agreed that there are no written quality assurance guidelines for industries hence quality systems and routines are haphazard.

(b) Quality control activities such as inspection, testing, process control, instrumentation among others, are inadequate or in some cases totally lacking, especially in small and medium sized industries.

(c) Most companies prefer to buy the cheapest raw materials on the market irrespective of their quality. For products like honey, different varieties are produced at different locations and hence the honey collected daily is heterogenous in nature and of inconsistent quality. The quality of perishable products such as sugarcane deteriorates with time after harvest. Although plant managers are aware of this, they may not be able to use all the raw materials immediately due to problems such as machine breakdown. In other cases where the raw materials may be of desirable quality, the processing equipment may not be of the specification required to produce a high quality product.

Recommendations

(a) The UNBS should therefore coordinate with the Chief Executives of the different industries to work out a quality assurance programme for their industries. Company Executives would therefore be directly involved in defining the goals of the company and the role of the quality control personnel in the organisation.

(b) Centralised testing laboratories where users pay a fee for the services rendered, should be established.

(c) Plant Management should be encouraged to train Quality Control Specialists. The UNBS will only issue quality standards certificates to companies which:

(i) observe strict quality control and
(ii) have qualified personnel who know about quality and who can also ensure that corrective measures will be taken to ensure proper sanitation procedures in the industry.

CONCLUSION

SUSTAIN activities continued to be important events in the UMA Programme for the development of the food processing industry. The SUSTAIN workshops were an important fora for intercompany interaction and exchange of views by participants. During the meetings, presentations and one-on-one consultations, participants were introduced to better and cheaper methods of packaging and labelling. They also got to know (some for the first time) about issues such as quality control and marketing in the food industry.

Efforts will be made to obtain additional funding from USAID and local manufacturers to ensure that the solid foundation laid by SUSTAIN is strengthened. The SUSTAIN Program will in future, focus on specific sector groups. This is because within each sector, processors face unique problems. The SUSTAIN Programme would therefore be better able to address these problems.

Uganda Manufacturers Association (UMACIS)
Consultancy and Information Services Ltd
PLOT 10, KALITUNSI ROAD P.O.BOX 9113 TEL: 236182 FAX: 243288 / 242466 / 236148 KAMPALA

OUR REF: UMACIS/SUSTAIN YOUR REF: DATE: 13/10/93

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Dear Sir,

RE: QUALITY CONTROL/QUALITY ASSURANCE WORKSHOP, NOVEMBER 10 - 11, 1993 UGANDA INTERNATIONAL CONFERENCE CENTRE, KAMPALA.

The Uganda Manufacturers Association, UMA, in collaboration with Project SUSTAIN (Sharing U. S. Technology to Aid in the Improvement of Nutrition) will hold a two day Quality Control/Quality Assurance and Marketing workshop from November 10 -11, 1993 at the Uganda International Conference Centre, Kampala. This workshop is the second in a series of worshops which shall be held to address areas critical to the food processing industry in Uganda. The workshops are conducted with the help and technical expertise provided by volunteers from U. S. Food Companies under the SUSTAIN programme and are funded by the United States Agency for International Development, USAID.

The Quality Control/Quality Assurance workshop from November 10-11, 1993, will be conducted by Dr. John Nelson and Dr. John Troller. Dr. Nelson and Dr. Troller have a lot of experience in quality assurance/quality control and marketing in the food processing industry. They will be assisted by resource persons from the Uganda National Bureau of Standards, UNBS, the Food Science and Technology, Makerere University and the UMA.

The purpose of this letter is to invite you attend the quality control/quality assurance workshop in November. Participants are required to bring along samples of their products, which will enable them to have some of their problems e.g product presentation and marketing discussed and addressed during the workshop. Each participant is requested to pay a registration fee of shs. 5,000 only to facilitate preparations for the workshop. Payment should be made to the UMA Consultancy and Information Services office at Plot 10, Kalitunsi Road, Bugolobi, or to the UMA Secretariat Office, at the UMA Showgrounds, Lugogo.

In addition your company has been selected for a factory site visit by the SUSTAIN Consultants. This will enable them to know the problems your company faces in quality assurance and product marketing.

We look forward to working closely with your company so as to improve food processing in Uganda, and therefore urge you to make the necessary arrangements for Dr Nelson and Dr Troller to your factory on November at and to confirm your availability to attend the quality control/quality assurance workshop in November at the earliest opportunity.

Looking forward to your prompt and favourable response.

Yours sincerely,

William S. Kalema, Ph D
DIRECTOR

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Uganda Manufacturers Association (UMACIS)
Consultancy and Information Services Ltd
PLOT 10, KALITUNSI ROAD P.O.BOX 9113 TEL: 236182 FAX: 243292 / 242455 / 236148 KAMPALA

OUR REF: UMACIS/SUSTAIN YOUR REF: DATE: 11/10/9

.....
.....
.....
.....

Dear Sir,

RE: QUALITY CONTROL/QUALITY ASSURANCE WORKSHOP, NOVEMBER 10 - 11, 1993 UGANDA INTERNATIONAL CONFERENCE CENTRE, KAMPALA.

The Uganda Manufacturers Association, UMA, in collaboration with Project SUSTAIN (Sharing U. S. Technology to Aid in the Improvement of Nutrition) will hold a two day Quality Control/Quality Assurance and Marketing workshop from November 10 -11, 1993 at the Uganda International Conference Centre, Kampala. This workshop is the second in a series of worshops which shall be held to address areas critical to the food processing industry in Uganda. The workshops are conducted with the help and technical expertise provided by volunteers from U. S. Food Companies under the SUSTAIN programme and are funded by the United States Agency for International Development, USAID.

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We look forward to working closely with your company so as to improve food processing in Uganda, and therefore urge you to confirm your availability to attend the quality control/quality assurance workshop in November at the earlies opportunity.

Looking forward to your prompt and favourable response.

Yours sincerely,

William S. Kalema, Ph D
DIRECTOR

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APPENDIX I

SUSTAIN Description

The program **Sharing U.S. Technology to Aid in the Improvement of Nutrition (SUSTAIN)** provides access to U.S. expertise in food processing to help improve nutrition in the developing world. Technical assistance is provided by volunteer professionals from U.S. food companies, universities, and other organizations who donate their time and expertise.

SUSTAIN was granted a five-year renewal from the U.S. Agency for International Development (USAID) on September 30, 1991. The program is managed under a cooperative agreement with the National Cooperative Business Association (NCBA) and receives advice from a Steering Committee made up of private sector representatives.

NCBA was founded in 1916 and is a membership association representing America's 45,000 cooperative businesses. Known overseas as CLUSA, NCBA works overseas with its own member co-ops, USAID, World Bank, UNDP, and other donor agencies to promote development and joint ventures in the third world.

Many benefits can accrue to the developing world through improvements in food processing. From the standpoint of alleviating hunger and improving nutrition, food processing has much to offer. It helps meet food and nutritional requirements and reduce post-harvest food losses. From the economic standpoint, food processing provides a means for increasing foreign exchange earnings through exporting value-added processed foods rather than commodities. It helps generate employment and stimulates technological development and the growth of allied industries.

SUSTAIN helps improve food quality, expand production, and lower operating costs of locally grown and processed foods by providing technical assistance in post-harvest food systems, including: (a) food safety, quality, and sanitation (b) food preservation and storage (c) food processing (d) food fortification (e) packaging (f) marketing (g) weaning foods and (h) environmental technologies.

How the Program Works

SUSTAIN receives requests for assistance from individual food companies, research institutions, and USAID. Short-term technical assistance is provided by experienced U.S. professionals who donate their time and expertise to the project. Missions are typically one to three weeks in duration. SUSTAIN covers international travel costs. Companies or host organizations requesting SUSTAIN assistance are asked to contribute towards in-country expenses. Due to budget constraints, priority is given to requests that can demonstrate an ability to improve the nutritional quality, safety, and availability of food in the local community. To the extent possible, SUSTAIN coordinates its overseas activities through a local organization. This not only enhances opportunities for technology transfer, but also facilitates coordination of activities and contributes to long-term sustainable development.

SUSTAIN is able to solve many problems by providing information that exists either in technical literature or in the "memory" of a company. If the problem cannot be solved through correspondence, then SUSTAIN volunteers may be sent to provide short-term technical assistance. Workshops and seminars can also be organized to help address food technology issues. The program does not fund product or equipment acquisitions.

The program publishes a quarterly newsletter (*SUSTAIN Notes*) on food technology issues. It is provided gratis to over 1900 recipients in more than 50 countries.

For more information, please write to:

SUSTAIN Program
National Cooperative Business Association
1401 New York Avenue, NW, Suite 1100
Washington, DC 20005-2160
Phone: (202) 638-6222
Fax: (202) 628-6726

APPENDIX II

Biographies of SUSTAIN Volunteers

John Nelson, Ph.D. (Biochemistry, Microbiology, University of Minnesota, 1961) is Vice President-Science and Technology of McCormick & Company. He was formerly Director of Research & Development and Vice President-Research & Development with McCormick; Chief Operating Officer with Roman Meal Company; Vice President, Marketing & Product Development with American Maize Products Company; Vice President, Research & Development with Peavey Company; and Department Head, Research & Development with General Mills, Inc. His areas of expertise include business management, processing of cereals and legumes, and marketing. Dr. Nelson is active on numerous professional and advisory groups, including the Governor's Conference on the Future of Maryland Agriculture, the Institute of Food Technologists, and the AACC. He has participated in missions to 8 developing countries to assess their food industries. He is currently the Chairman for SUSTAIN's Steering Committee.

John Troller, Ph.D. (Bacteriology, 1962) has spent more than 40 years in various aspects of food processing, 30 of those at Procter & Gamble (Food Division), first as a research scientist, then as a scientist and manager in the Food Product Development Division. Dr. Troller headed a group responsible for the microbiological safety and stability of existing and emerging Procter & Gamble food products, and established GMP and safety strategies for all of the company's food sanitation programs. He also consulted with company food scientists and engineers on a variety of sanitation, microbiologic, and development-related issues such as raw materials specifications and procurement, aseptic packaging, oxidative effects, and moisture relations of foods. He has written two books and over 40 articles in scientific journals.

APPENDIX III

Itinerary

VISIT TO UGANDA BY DR. JOHN NELSON AND DR. JOHN TROLLER
NOVEMBER 6 - 14, 1993
PROPOSED PROGRAMME

Saturday, November 6, 1993	
7:55 a.m.	Arrival of Dr. John Nelson
11:00 a.m.- 12:00 p.m.	Food World Industries, Kampala
12:15 - 1:15 p.m.	Hwan Sung Fish Processing Plant, Ntinda
Sunday, November 7, 1993	
8:20 a.m.	Arrival of Dr. John Troller
Monday, November 8, 1993	
8:30 - 9:30 a.m.	Meeting with USAID Mission Director and staff, at Plot 42 Nakasero Road
9:50 - 10:50 a.m.	Meeting with Executive Secretary, National Council for Science and Technology
11:10 a.m. - 12:10 p.m.	Meeting with Executive Director, Uganda National Bureau of Standards
2:00 - 3:00 p.m.	Meeting with Executive Secretary, Uganda Export Promotion Council
3:30 - 5:00 p.m.	Visit to Logogo Show grounds, Trade Fair
Tuesday, November 9, 1993	
9:00 a.m. - 10:00 a.m.	Dairy Corporation, Entebbe
10:20 a.m. - 11:20 a.m.	Hot Loaf Bakery, Kampala
12:45 p.m.	Leave for Jinja
2:30 - 3:30 p.m.	Ocudung Millers, Jinja
4:00 - 5:00 p.m.	Gomba Fish Processing Plant, Jinja
Wednesday, November 10, 1993	
	Chairman: Dr. Evelyn Kasirye-Alemu, Director, Uganda National Bureau of Standards
8:00 - 8:30 a.m.	Meeting with Jim Dunn, USAID
9:00 - 10:15 a.m.	Plenary Session
9:00 - 9:30 a.m.	Keynote Address: Minister of Trade and Industry
9:30 - 10:15 a.m.	Executive Session, Address by Dr. John Nelson and Dr. John Troller
10:15 a.m.	Break
10:45 - 11:15 a.m.	Presentation by Uganda National Bureau of Standards, Ministry of Trade and Industry
11:45 a.m. - 12:45 p.m.	Introduction, Quality Control/Quality Assurance, Dr. John Troller
12:45 p.m.	Lunch
2:00 - 3:30 p.m.	Quality Control/Quality Assurance, Dr. John Troller
3:30 - 3:45 p.m.	Break

QUALITY CONTROL/QUALITY ASSURANCE WORKSHOP
NOVEMBER 10 - 11, 1993
PROGRAMME

3:45 - 5:00 p.m.	Group Discussions on QC/QA
	Groups will represent the food processing sector in Uganda. Each group will have participants from a given food processing sector such as dairy, meat processing, fruit juice processing, cereals, edible oils, packaging companies, and others.
5:00 - 5:30 p.m.	General Discussion and Review of the Points Raised in the Group Discussions
Thursday, November 11, 1993	
	Chairman: Mr. Henry Nyakoojo, Executive Secretary, Uganda Export Promotion Council
8:30 - 8:50 a.m.	Presentation by Food Science and Technology Department, Makerere University
8:50 - 9:10 a.m.	Presentation by Export Policy Analysis and Development Unit, Ministry of Finance and Economic Planning
9:1 - 10:45 a.m.	Product Marketing, Dr. John Nelson
10:45 - 11:15 a.m.	Break
11:45 a.m. - 12:45 p.m.	Product Marketing, Dr. John Nelson
12:45 - 1:45 p.m.	Lunch
1:45 - 3:45 p.m.	Group Discussions on QC/QA
	Groups will represent the food processing sector in Uganda. Each group will have participants from a given food processing sector such as dairy, meat processing, fruit juice processing, cereals, edible oils, packaging companies, and others.
3:45 - 3:45 p.m.	Break
3:45 - 5:00 p.m.	General Discussion and Review of the Points Raised in the Group Discussions
	Closing and Reception
Friday, November 12, 1993	
9:00 - 10:00 a.m.	Food Science and Technology Department, Makerere University
10:45 - 11:45 a.m.	Debriefing with USAID Mission Staff
12:00 - 12:45 p.m.	Meeting with UMA Chairman
2:00 p.m.	Leave for Tororo
Saturday, November 13, 1993	
8:00 a.m.	Departure of Dr. John Troller
9:00 - 10:00 a.m.	Elgonia Industries, Tororo
10:30 - 11:30 a.m.	Nagongera Millers, Tororo
12:00 - 1:00 p.m.	South Bukedi Cooperative Union, Tororo
Sunday, November 14, 1993	
11:25 a.m.	Departure of Dr. John Nelson

APPENDIX IV

Participants at the QC/QA and Marketing Workshop
November 10 - 11, 1993

1. Century Bottling Co. Ltd	Mr Fred Bagenda
2. Century Bottling Co. Ltd	Mr Badru Sebyala
3. Coffee Marketing Board	Mr Kerere Karugahe
4. Crafts Bazaar(U) Ltd	Ms Allen Nsibirwa
5. Crown Bottlers Ltd	Mr Bart Gasana
6. Crown Bottlers Ltd	Mr P. Bananuka
7. Dairy Corporation	Mr Murket Chemoiko
8. Dairy Corporation	Mr Ngobi
9. Dairy Corporation	Mr Constantine Mike Oyo
10. Elgonia Industries	Mr Solomon Mudoi
11. Export Policy Analysis and Development Unit	Mr Barnabas Sekabembe
12. Food Pack Ltd	Mr Silver Ocitti
13. Food World Ltd	Mr Kenneth Wadewa
14. Foods & Beverages Ltd	Mr David Nkurunziza
15. Foods & Beverages Ltd	Mr Godfrey Semakula
16. Hot Loaf Bakery	Mr Aloysius Kiiza
17. Interfish Ltd	Ms Joyce Namagembe
18. Jewel of the Nile	Mrs Miriam Okiror
19. Jewel of the Nile	Ms Faith Mirembe
20. Kabuli Farmers and Millers Ltd	Mr P. N. I Mwogera
21. Kabuli Farmers and Millers Ltd	Mr Robert Wambuzi
22. Kakira Sugar Works	Mr R. P. Kamante
23. Kampala Jellitone Suppliers	Mr Abbas Kazibwe Musisi
24. Kennex (U) Ltd	Mr Okello
25. Keva Enterprises (U) Ltd	Mr Kepher Kateu
26. Maddo Secretariat	Dr M. N. Musoke
27. Maganjo Grain Millers Ltd.	Mr Wilson Bahemuka
28. Maganjo Grain Millers Ltd	Mr Patrick Kivumbi
29. Makerere University	Mr Yusuf Byaruhanga
30. Makerere University	Ms Harriet Mudondo
31. Makerere University, Food Science and Technology Department	Mr William Kyamuhangire
32 Masaka Food Processors	Ms Milly Pekke
33. Medipharm Ltd	Ms Annet Bukirwa
34. Megatrends Ltd	Mr Denis Patrick Okori
35. Ministry of Agriculture, Animal Industry and Fisheries	Dr Juliet Sentubwe
36. Mossewa Ltd	Mr Mohammed Sekyewa
37. Mr James Matambala	
38. Mr Muhammed Segonga	
39. Mukono Tukolere Wamu Women's Group	Ms Dorothy Kasajja
40. Mukono Tukolerewamu Women's Group	Ms Margaret Nsubuga
41. Mukwano Industries	Mr Francis Matovu
42. Musenze Industries Ltd	Mr Sulaiman Musenze
43. National Agricultural Research Organisation	Dr William Ssali

44. Ngege Ltd	Mr Rodgers Matsiko
45. Ngege Ltd.	Ms Catherine Bendera
46. Nkuruba Wheat Mills	Brother Charles Agaba
47. Omolo Mixed Farm Ltd	Mr Salim Okullu
48. OssoBuco Enterprises	Mr Willy Jitta
49. Mr Patrick Kyoyetera	
50. Peggie Institute of Catering	Ms Grace Ibingira
51. Petlug Ltd	Mr Emmanuel Muwanguzi
52. Petlug Ltd	Mr Godfrey Semakula
53. Phaben Enterprises	Mr Arnold Ongecu
54. Phaben Enterprises	Ms Pherry Ongecu
55. Reco Industries	Mr Philip Rwabwogo
56. Reco Industries	Mr Wilson Baluku
57. Rosa Bros. Ltd	Mr John Bosco Senyonga
58. Sekabanja Dairy Farm	Ms Florence Sekabanja
59. Sino Uganda Fisheries	Mr Joseph Okwonga Olanya
60. Sugar Corporation of Uganda Lugazi	Mr J. Isodo
61. Tamco Milling Industry	Mr Richard Mayirula
62. Tamco Milling Industry	Mr John Patrick Ngobi
63. Theresa Winery	Ms Theresa Musisi
66. Twiiza Enterprises	Ms Ruth Tuma
67. Uganda Breweries	Mr A. Acom
68. Uganda Breweries	Mr F. K Nyanzi
69. Uganda Breweries	Mr Okoth P. Potison
70. Uganda Breweries Ltd	Mr E. M. Katorobo
71. Uganda Butter Manufacturers Ltd	Mr Michael Ssimbwa
72. Uganda Butter Manufacturers Ltd	Mr Robert Segonja
72. UMA Consultancy and Information Services	Mr Wycliff Bbosa
73. UMA Consultancy and Information Services	Ms Sandra Derrick
74. UMA Consultancy and Information Services	Mr Dan Kitakule
75. UMA Consultancy and Information Services	Ms Sarah Kitakule
76. UMA Consultancy and Information Services	Ms Frances Nsonzi
77. UMA Consultancy and Information Services	Mr Fred Zake
78. Uganda Export Promotion Council	Mr Henry Nyakoojo
79. Uganda Grain Milling Company	Mr Moses Wamukota
80. Uganda Grain Milling Company	Mr John Wakikona
81. Uganda Investment Authority	Mr Hillary Obonyo
82. Uganda National Bureau of Standards	Dr Evelyn Kasirye-Alemu
83. Uganda National Bureau of Standards	Mr Willy Musinguzi
84. Wabuyaayu Honey Processors	Mr James Babumba
85. Reco Industries	Mr Bakiiza

APPENDIX V

Workshop Materials

Press Release

UGANDA MANUFACTURERS ASSOCIATION

FOOD PROCESSORS QUALITY CONTROL/QUALITY ASSURANCE AND MARKETING WORKSHOP

Uganda International Conference Centre, Kampala.
November 10 - 11, 1993

The Uganda Manufacturers Association, UMA, together with Project SUSTAIN (Sharing U.S. Technology to Aid in the Improvement of Nutrition) a U. S. based volunteer organisation, will hold a two-day workshop on quality control, quality assurance and product marketing from November 10-11, 1993 at the Uganda International Conference Centre. This workshop is funded by the U. S. Agency for International Development, USAID.

The workshop will be conducted by Dr. John Nelson, Senior Vice President, Science and Technology, McCormick and Co and Dr. John Troller. They will be assisted by resource persons from the Export Policy Analysis and Development Unit, EPADU, the Uganda National Bureau of Standards, UNBS, the Food Science and Technology Department, Makerere University, and the UMA.

The workshop will address the following issues:

- The sanitary design, operation of food plants and good manufacturing principles relative to their integration into the food processing system (raw materials acquisition, processing, equipment and plant design, packaging sanitation, storage and shipping)
- Sources of spoilage and safety risks in food products in addition to the techniques available to circumvent these problems.
- The importance of quality control in marketing

The UMA invites all food processors and interested participants to attend. Each participant is requested to pay a registration fee of shs. 5,000 only. Registration will start at 8:00 a. m.

For more information and registration, please contact:

UMA Consultancy and Information Services
Plot 10, Kalitunsi Road, Bugolobi
Tel: 236182/236147

or

The UMA Secretariat
Lugogo Showgrounds
Tel: 220285

Presentation on Quality Assurance/Quality Control by Dr. John Troller

I. Quality programs
- A. Goals
  1. Reduce hazards
  2. Reduce spoilage
  3. Maintain nutritional quality
  4. Deliver a better product
  5. Profit
- B. How quality objectives are met
  1. Quality systems
     - a. Total Quality Management
       - i. Description
       - ii. Costs
         - of poor quality
         - of high quality
       - iii. Product advantages
     - b. Hazard Analysis and Critical Control Point programs
       - i. Definition
       - ii. Development of
       - iii. System
       - iv. Principles
  2. ISO 9000
  3. The establishment quality maintenance programs
  4. Designing quality into a food product-- from the beginning

II. Food hazards

- A. Types/issues
- B. Control of food hazards
- C. Microorganisms
  1. Significance of microorganisms in foods
- D. Consequences of failed quality programs
  1. Spoilage
  2. Economic penalties
  3. Regulatory
  4. Moral committment
  5. Health
- E. Sources of microorganisms in foods

II. How we protect food from hazards

- A. Principles of food preservation
  1. Microbial decomposition
  2. Self-decomposition
- B. Health concerns

1. Foodborne illnesses- definition
2. Types
    a. Infections
    b. Intoxications
    c. Metabolic food disorders
    d. Allergies from foods

B. Spoilage

C. Methods of protecting food
1. Asepsis- keeping microorganisms out
2. Removal of microorganisms
3. Maintenance of anaerobic conditions
4. Nutrition
5. pH
6. High and low temperatures
7. Drying/moisture control
8. Chemical preservatives
9. Irradiation
10. Mechanical destruction
11. Combinations

D. Keeping microorganisms out of food
1. Sanitary plant design
    a. Siting
    b. Layout
    c. Construction
    d. Exterior
2. Floor
3. Walls
4. Roof/ceiling
5. Doors and other openings
6. Sanitary equipment design
7. Cleaning and sanitization
8. Worker hygiene
    a. Handwashing
    b. Gloves
    c. Restroom facilities
    d. Hair
    e. Clothing
    f. Eating
    g. Personal habits
9. Pests
    a. Insects
    b. Rodents
    c. Birds
10. Raw materials
    a. Labels for nutrition and safety

11. Packaging
12. Storage
13. Shipping
14. Air control

E. Consumer input
F. Regulations

Video on sanitary production of a food product

PREVENTING CONTAMINATION

Things to watch for:

Odors

Color changes/turbidity

Texture changes

Changes in package conformation- swelling

Slimes and scums

SOURCES OF MICROORGANISMS IN FOODS

Raw materials

Environment

People

Pests

TYPES OF FOOD BORNE ILLNESS

Infections

Intoxications

Metabolic food disorders

Allergies

SIGNIFICANCE OF MICROORGANISMS IN FOOD

1. Disease
2. Spoilage
3. Regulatory
4. Adverse publicity
5. None

TOTAL QUALITY MANAGEMENT AND THE FOOD INDUSTRY: WHY IS IT IMPORTANT?

A disciplined approach to quality integrates management techniques, existing improvement efforts, and technical tools

William A. Golomski

☐ THE FIELD OF QUALITY has gone through several changes. More than twenty centuries ago there was a formal position of inspector during the building of the pyramids in Egypt, and a similar position in the ceramic shops of China. Work was organized in terms of several special skills or functions. The same is true of corporations today.

Every organizational function likes to think of itself as the indispensable component of the corporate strategy. The marketing function has the customer as its focal point, but so does the quality function. That makes each important. The finance and accounting people might put profit, stockholders, taxpayers, or even asset utilization in the center.

There are a variety of stakeholders in the organization. The emphasis placed on each depends on which ones the organization believes are most essential. But the reality is that all are equally essential: suppliers, employees, capital, customers, and so on. It is much like asking which part of an airplane is the most important—the wings, the tail, the left engine? The discussion that arises over how the organization should prioritize its improvement efforts is useful. It drives us to improve more effectively.

This article will provide discussion of the following three questions: What is Total Quality Management (TQM)? How did we arrive at the concept? And why is it important?

What Is TQM?

TQM is a philosophy, a set of concepts, and a collection of methods for continuously improving organizations. The improvement is focused on customer satisfaction, process improvement, employee participation and involvement, and a strategic quality plan. There is a linkage between what the long-term vision of the company is, and how it can be supported by TQM. In some cases, quality, cost, and customer satisfaction are the central issues for the corporation around which everything else is built.

There are a variety of other definitions of TQM. One used by W.A. Golomski and Associates states: "Total Quality Management is a system and a sustained improvement process for improving quality in everything that we do. It is concerned with satisfying both internal and external customers. But does this mean at any cost? No! We will aim for the rational expectations of customers over the likely use of the product or service."

Another definition developed by the Dept. of Defense states: "Total Quality Management is both a philosophy and a set of guiding principles that represent the foundation of a continuously improving organization. TQM is the application of quantitative methods and human resources to improve: (1) the material and services supplied to an organization, (2) all the processes within an organization, (3) the degree to which the needs of the customer are met, now and in the future. TQM integrates fundamental management techniques, existing improvement efforts, and technical tools under a disciplined approach focused on continuous improvement."

Whenever a new concept emerges, the tendency is to say that it is just a relabeling of old concepts, or it is something that the reader or listener has been using for years. It is somewhat like reading a book on abnormal psychology and wondering which of the many abnormalities you have. There usually are elements of prior approaches in new ones.

The reason for all the interest in TQM is that the usual planning, budgeting, financial, and marketing approaches failed in many organizations. The broadened perspectives of TQM have provided new insights and great practical benefits. One of the elements of TQM is the role of standards.

- **Standards.** A standard is an agreed upon definition, measurement device, test, practice, product or service arrived at by consensus. Standards are issued by governmental groups whose responsibilities include specifying how long an inch is, and what green means in a bank of traffic lights. These governmental groups include voluntary associations such as the American National Standards Institute, ASTM, ANSI/ASQC, and Codex Alimentarius. If you want to know the accepted method for testing the sound of sirens, fat in hot dogs, or the strength of shipper car-

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tons, there is a standard. Standards are associated with the safety of buildings, hardhats and safety devices. They are used to determine how to sample grain or milk from a truckload. They are used to determine how to edit a book or report. Standards facilitate domestic and international trade. They are so much a part of our lives that we forget about them. Which way does a door open—inward or outward—and why? What does a size eight in one's shoes mean? What about large grade A eggs?

Currently, there is great interest in ISO 9000 in every industry. The International Standards Organization (ISO) published a set of standards, commonly referred to as "ISO 9000," in 1987. These standards, the result of many years of work by leading quality professionals from 27 major industrial countries, immediately stimulated the interest of quality professionals throughout the world. The standards are reviewed every five years and work has started on the 1997 version. Along with these standards, a series of standards, referred to as "ISO 10011" were published for auditing and registration of Quality Systems to an ISO 9000 standard. These provided the means of assuring a purchaser that a supplier would have in place and functioning a Quality System which would assure the purchaser that purchased materials and products would meet the purchaser's requirements regardless of the country of origin.

For people outside the quality profession interest in the standards came from the following subsequent events:

1. The issuing of an "edict" by the European Community (EC) that companies doing business in the EC would need registration to an appropriate ISO 9000 standard to continue to do business there after 1992.

2. The beginning of extensive registration of companies in the United Kingdom to an ISO 9000 (BS 5750) standard. This started on a smaller scale in other countries, but is growing rapidly.

3. The BSI requirement for manufacturers certifying products to meet both product standards and quality system standards.

4. In the U.S., many companies which are getting registration to an ISO 9000 standard are also requiring their suppliers to obtain registration. The Dept. of Defense and the Food and Drug Administration (FDA) have expressed the intent to use these standards as a partial basis for auditing and approving quality systems. Those companies which obtained registration have found that preparing for registration has led not only to improved quality but also to reduced costs.

The ISO 9000 standards are recognized and being implemented in North America, South America, Europe, Asia, and Australia. Standards writing organizations in more than 50 countries have published technical clones of the ISO 9000 series. Examples of quality standards in various countries are given in Table 1.

Table 1—**Quality Standards** *of various countries*

Region or country	Standard
United States	ANSI/ASQC Q90
United Kingdom	BS 5750
European Community	EN 29000
Germany	DIN-ISO 9000
France	NF-EN 29000
Sweden	SS-ISO 9000
Australia	AS 3900
China	GB/T 10300.1

• **Survival.** Beginning in the 1980s many companies in the U.S. began developing and implementing Quality Systems as a means of surviving. They were losing business because of their inability to compete successfully on either price or quality.

The advent of the ISO 9000 standards and the development of the registration procedures and systems adds to the need for developing and implementing a good quality system if the company is to survive through the 1990s and beyond. For those companies doing business in Europe, expecting to sell there after 1992, registration to an ISO standard is a must.

In the United Kingdom, the BSI now calls for meeting an appropriate BS 5750 standard (ISO 9000), as one of the conditions for obtaining product certification. Thus, meeting the requirement of the ISO 9000 standard is important for sales of products in the consumer marketplace as well as selling materials, components, and products to manufacturers.

Within the U.S., a number of companies which have obtained or intend to obtain registration to an ISO standard are telling their suppliers to obtain registration, regardless of the location of the supplier.

• **Measuring Progress.** Some of the most important parts of life are the most difficult to measure. If we are thinking about a vocation as a priest, brother, nun, rabbi, imam, or minister, what will that be like? Or, if we are dating and thinking of getting married, how will the intended spouse work out? In quality, we usually take a different route. We make three measures of relative progress. They are: (1) How are we improving relative to a base period? This is called baseline measurement; (2) Are we improving as fast as the best of competitors? This is called making a competitive comparison; and (3) Are we doing as well as the best in class, regardless of the industry or field? This is called benchmarking. Some consider all three benchmarking.

One of the problems in most organizations is that there are very few measures of quality. If there are any at all, they are usually measures of complaints, scrap levels, or rework. This is a negative way of looking at quality, and it is based on quality measurements of outputs. We would rather have measures of customer satisfaction and measures early enough in a work process to prevent or minimize problems.

Quality measures are of two types: those while an operation is going on, and those after the end of work. If we were to start a quality improvement effort now, one of the first things we would want to do is to identify various output measures, and more importantly, quality measures within processes. These starting levels are baseline measures. They are measures from which to start trend analysis to measure progress of process outputs. We can also have measures of control limit width and patterns within the control limits. However, there is always a nagging doubt. Who in

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our industry is doing a better job on these same measures? That's why we want competitive comparisons. What if we find that someone else is doing better? That should give us a greater sense of urgency, and drive us to develop better plans. The counterargument is that we should always be striving for continuous improvement whether competitors are driving us to do so or not.

There is another possibility. Some organization in another industry or field might be doing better than anyone in an industry. One of our competitors might find this out before we do, and incorporate ideas from that organization to achieve similar results and surpass us. To avoid this, why not find out who is Best In Class (BIC) in the other industry first, before our competitors do. This is called benchmarking. Benchmarking studies are difficult for small companies. Trade associations or university business research organizations are the best to conduct such studies. Consulting companies, foundations, and large corporations are other possibilities.

Arriving at the Concept

In 1924, Dr. Walter Shewhart of AT&T introduced two important concepts of quality to the world: (1) Processes should be looked at from the point of view of preventing defects, and not just detecting them, and (2) processes have two kinds of causes of variation. These are the random causes which are due to management actions, and the assignable causes which are due to operators or workers in a process.

Most causes are due to decisions made by management on supplier selection, maintenance, equipment type, process design, product design, employee selection, employee training, and leadership. These so-called random causes are what Dr. W. Edwards Deming calls common causes (Deming, 1986). They account for at least 80% of business process and operations problems. Nonetheless, most managements fantasize that the major problems are with first-line workers and their motivation.

The work of Shewhart and George Edwards of AT&T eventually led to the field of quality control and quality assurance. These were professional engineering and management activities. Official definitions of quality control and quality assurance are quoted below (ASQC 1987b):

Quality System: The organizational structure, responsibilities, procedures, processes, and resources for implementing quality management.

Quality Control: The operational techniques and activities that are used to fulfill requirements for quality.

Quality Assurance: All those planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy given quality requirements.

Transition to TQM

During the 1970s, quality management became a vice presidential position separate from manufacturing or operations. However, its main concern was with the quality of the products and services sold or bought. It became apparent that the use of sampling plans to protect companies was no longer effective.

Some of the most important part of the most difficult to measure

With performance rates economically tolerating only a few parts defective per million or even billion, management had to change. The changes were primarily in the electronics, telecommunications, defense, and aerospace industries. Some pharmaceutical and food operations also fit into that high-performance category and were improved to these high performance rates in the 1950s. The transition in concept and organizational structure moved from: (1) inspection, to (2) quality control, to (3) quality assurance, to (4) continuous improvement, to (5) total quality management. Some see a transition to paradigm innovation.

Several changes in the approach to quality occurred. These changes can be summarized as follows: All work should be viewed as being composed of processes. Some processes fail because of complexity and should be simplified. Processes can be brought into a state of statistical control and then be made capable of meeting specifications. There can be continuous improvement in all processes. Small groups, properly trained, using principles from sociology and psychology can be more effective at continuous improvement than experts. Strategic and annual quality improvement plans are helpful in aligning quality improvement activities with each other and the organization purpose. The customer defines quality. There is no best way, but not any way will do. National and international efforts have produced standards for a quality management system which permits a variety of quality systems.

A parallel approach started in the late 1950s with the book *Total Quality Control* (Feigenbaum, 1983). This was extended by the Japanese to develop company-wide quality control. This is called "quality control in everything that we do." It is a management systems approach to Total Quality Control, but does not have the social and behavioral science components that more recent formulations have.

The concepts of TQM having to do with food products and equipment were found in the USDA program, Voluntary Total Quality Control. I trained most of the USDA personnel in meat and poultry in these concepts.

Is TQM Different?

There are many people in companies who say, "I've been using TQM for years." On careful investigation we find that not to be true. At least one of several elements are missing.

Among the more common omissions are: (1) Lack of a strategic quality plan and an annual quality improvement plan which covers all products, services, and internal departments. As an example, what's the 1992 quality improvement plan for accounting, for

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marketing, and for human resources? (2) Lack of education and training every year for each and every employee. This includes how to identify opportunities for improvement, how to diagnose them, how to come up with solutions, how to implement the solution, and how to make further improvements. (3) Inadequate use of quality measures and statistical methods to measure progress and to measure process control. (4) Lack of objective customer satisfaction measures by geographical area, industry grouping of customers, and by product (service) type or group. (5) Lack of benchmarking of all business processes and products (services) which are the best, regardless of field, and a comparison of level and growth.

Certainly some organizations had some TQM concepts in place in their quality assurance systems. However, these were static systems based on conformance to specifications. That's not good enough. If there is less variation within specification limits, subassemblies and products usually perform better. Suppliers are compared in terms of how little variation they have relative to specification limits.

Human Aspects

Eric Baum, the famous social psychologist, discusses the importance of affiliating with an organization. By this he means that if there is a strong nexus between our personal development goals and values and the goals and values of the organization, the employee affiliates with the organization. However, if during the rites of initiation to the organization, the veterans stamp out any vestiges of prior success or status one wishes to gain as a result of prior work, disaffiliation can occur. One then just works in the organization, but doesn't affiliate with it. If the rite of initiation is supportive, nonthreatening, or even if the individual develops himself or herself, the organization benefits.

Individuals who affiliate with an organization want to help it; however, desire is not enough. One of the concepts that many organizations miss is continuous improvement. As a result, they consider continuous improvement a part of TQM. Continuous improvement, as a concept, has several steps: (1) recognizing opportunities and problems, (2) diagnosing them, (3) finding solutions, (4) implementing solutions, (5) making sure they work, and (6) repeating these steps. All of these above require education, training, and coaching.

- **Human Relations Approach.** Employee involvement and participative management in the past was quite different from TQM today. Employees were sometimes brought in for a discussion on a problem with an executive or manager. When that person received the inputs of the group, he or she made a decision on what to do. No power was released. No discussion among equals took place. The joy of implementation might have been delegated by the executive or manager to others than those who gave inputs.

Another type of participation was that of Japanese quality control circles. In the U.S., these were employee groups at the bottom of the organization. They usually identified the problems they wanted to work on. Upper management gave approval. Employees worked on an approved project and presented the proposed solution to upper management for approval to proceed towards implementation. A complaint by some union leaders was that management was involved in too many steps. They, in effect, sat on both sides of the table. The weight of the past kept them from empowerment. Another problem which was identified by middle management was that they had no role. Eventually, in the U.S., middle management killed off quality circles. They are still thriving in Japan. A different form of small group activity has emerged in the U.S.

> The expansion to TQM will broaden many professionals who have only a technological point of view of quality.

- **The TQM Approach.** In this approach, management contributes resources and direction, but does not dominate. Small groups are encouraged to identify opportunities, and discuss them with a cross-functional steering committee for prioritization. Projects are worked on and implemented unless costs are increased, or there is a need for capital expenditures. Employees are empowered and work within acceptable guidelines.

Recent applications have occurred in schools, in government, in business, and in nonprofit organizations. Robert Cole, of Berkeley, studied small groups in the U.S., Sweden, and Japan. There were several reasons for failure. Among the two most important were the lack of alignment with the strategic plan of the organization, and lack of leadership skills within teams.

The first needs some explanation. Support will not continue for a change process unless the activity or approach is part of a generally accepted process or procedure. Teams are able to sustain interest and survive for two or three years, but then die because of lack of support. General systems theory indicates that subsystems which are disjoint from the main system will not survive. The second problem is that of teams wanting to be democratic, but still needing someone to encourage creativity to flow within the guidelines decided for the team. Teams can wander and not stay on track. This is especially true of teams of knowledge workers.

Senior management must set the "guiding principles" within which people work as individuals and in groups. But establishing them and posting them would not have any effect if the senior officers do not show a sustained interest in them. That is one way to make sure that they are followed. But even the phrase "sustained interest" might not suggest sufficient direction. It might suggest a passive interest rather than involvement. We do not expect a mandate, but rather, discussions in which people are convinced. This is then followed by what some people call "walk the talk." This means demonstrating what you preach through action.

It is important for those who manage the quality

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effort in companies to try to get those with diverse differences to work together as one team. Another goal is to get people to work together as one team rather than to emphasize their supposed differences in status.

There are two basic changes in TQM from the human resources point of view that are new. We are looking for heroic teams and not just emphasizing individual performance. This has many implications to performance appraisal and incentive systems. Secondly, we view "quality" as the continuously learning organization.

Why TQM?

Customers are becoming more demanding, competitors are tougher, and there are competing ways for customers to spend their resources. Life is both emotional and rational. Quality is a value concept in a society that has had difficulty with mortality in business and government. It is more than a "motherhood" approach with which no one can disagree. It conceives of an ideal world in which all works well, but is not boring. Quality is a major rallying force for all departments of an organization.

Not all great ideas in any field are developed in that field. So it becomes necessary to not only associate with those in your segment of the food field, but with others in this industry. At times it is of value to see what those in other industries are doing in QA/QC. At the national level I encourage you to prepare for the Malcolm Baldrige National Quality Award. This is a competition for all U.S. industry (Golomski, 1989).

Food quality control and assurance are noble professions. The expansion to TQM will broaden many professionals who take only a technological point of view to quality. Not only can QA/QC lead to other jobs with your organization, but they are worthy careers in themselves. The food industry will no longer have the trust of consumers and investors without concepts such as those found in TQM.

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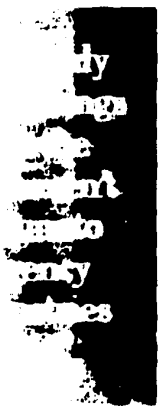
MANAGING THE QUALITY MANDATE

"Total quality" is more than a buzzword in the tight, competitive food markets of the 90s. It takes total commitment—from the top down—to new ways of managing and working with employees, suppliers, and customers. The process can be painful, but as the era of leveraged buyouts gives way to the dawn of total quality management, the future belongs to those who adapt

Pierce Hollingsworth
Contributing Editor

RECENTLY, A MAJOR FOOD COMPANY, still adjusting after numerous corporate restructurings and divestitures, called in a high-powered management consulting firm to straighten out a festering problem. The problem was rooted in the food company's customer service department, which was aptly called "the repair pit." This giant department, actually a crater composed of more than 500 employees, had grown far too big and costly. The management consulting firm was charged with shrinking, if not eliminating, the entire department, and it was assigned to work with the repair pit's department head.

The result: Predictably, the repair pit became a far more efficient repair center, but was not eliminated. The reason: The department had the same volume of repairs to make.



At this point top management got the message. Defects and product quality problems—not the inefficiencies of the repair pit—were the root cause of the problem. The script was therefore changed, and the management consulting firm broadened its scope to include virtually the entire organization and the way it worked. Its mission was simple. If defects are eliminated, repairs aren't necessary. And if repairs are rendered unnecessary, then the repair pit becomes a lean, efficient tune-up shop. This is exactly what happened, and today the customer service department of this major food company has just five employees, or just 1% of its original size.

Lovenduski

This kind of scenario is being played out all across the food industry as companies grapple with razor-thin margins and intense competitive pressure. The process is one of adapting to new and tough economic realities through a whole-company approach to managing quality from the ground up with an eye to the customer. It involves empowering employees, working closely with both suppliers and customers to meet common goals, establishing universal quality standards, tracking progress on a regular and consistent internal basis, and evaluating customer satisfaction.

The concept is not new. The most common term for the process—Total Quality Management (TQM)—has been in circulation for years, popularly associated with quality control guru W. Edwards Deming. But the food industry has been relatively slow to fully embrace it.

The reason is simple. TQM means change, usually fundamental change, and until a company is threatened it tends to avoid this kind of innovation. Until now, "the relatively steady revenue and earning stream associated with the food industry, even through difficult economic times, hasn't given momentum to the kind of urgency that other industries have had to adopt," states Walter Lovenduski, Group President, U.S. Operations, for Philip Crosby and Associates, the Princeton, N.J.-based consulting firm that tackled the "repair pit."

"In addition, there is the misnomer of total quality management being unnecessary for a company already producing a quality product," he says. In fact, U.S. food companies are acknowledged world leaders in delivering quality food products. That's not the meaning of TQM, however. It refers to quality across the total spectrum of operations, and so the definition varies from company to company.

"Total quality management is a series of behaviors within an organization which insures that all of the *customers'* requirements are met all of the time," Lovenduski says. This embraces quality product, as well as delivery, cost, and service.

Implementation: Agony and Ecstasy

"Total quality management as defined by more-enlightened CEOs has become a broad area, dealing with such things as process re-engineering, organizational effectiveness, and even the way people are evaluated and compensated," Lovenduski says. "In that context, most of the . . . food industry is really just getting started."

He claims that, based on surveys conducted by his company, no more than 15% of the industry has fully embraced TQM as an all-encompassing management philosophy. And propo-

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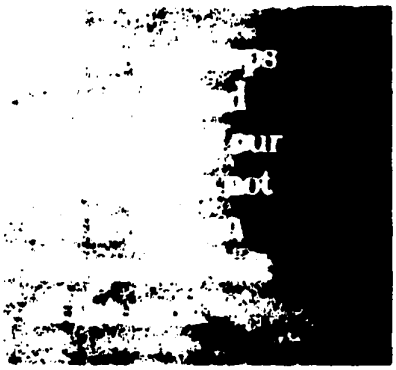
nents such as Lovenduski stress that TQM demands a total corporate commitment, a process that can cause no small measure of pain.

"Change has no constituency, so companies that have taken the gut-wrenching steps have done so because they faced an economic reality which they couldn't ignore," Lovenduski says. These gut wrenching steps normally include considerable management reorganization. Often this means knocking down organizational walls between departments or whole businesses and establishing freely flowing communication. For many managers the looming threat of change and uncertainty outweighs the perceived benefits.

Clausi

"Most food companies are organized functionally, so that the food scientist/product development component is a function unto itself. When you map a new [TQM] process wherein the customers' requirements are the focus, you'll find that those functions sometimes get in the way of a horizontal process flow," Lovenduski says.

All this sounds philosophical. In fact, TQM is more philosophy than tactics until it is applied. In the case of the repair pit, change wasn't possible until the departmental manager



was freed from his functional box. It took strong leadership from the top to first realize the requirement and then act on it. After all, the repair pit manager saw his department shrink by 495 employees.

Making the Right Moves

For a handful of food companies, the TQM philosophy, often operating under a pseudonym, is well established. H.J. Heinz, Kellogg, Kraft General Foods, PepsiCo., BSN's Dannon Co. subsidiary, Campbell Soup, and Pillsbury all have programs either on a corporate-wide or divisional scale.

"Total quality management means that the entire organization has to see itself in the context of delivering maximum product quality. That's quality with a capital Q," says Al Clausi, industry consultant and retired vice president and chief research officer for General Foods. Clausi is the Institute of Food Technologists' President-Elect.

"I think the idea [TQM] has always been there, at least for the successful food companies, but it hasn't been projected that way. So, in an attempt to get a closer linkage with all the elements of the business and do a still better job, the ideas of total quality management have been embraced by food companies, although not to the same degree as manufacturing and high-tech companies," Clausi says.

Pillsbury, settling down after its acquisition by Britain's Grand Metropolitan PLC, is among the leaders in implementing TQM's necessary linkages. "We've had stops and starts and rethinking of our strategy. It's not like buying an inexpensive suit off the rack. The magic to any total quality program is determining how to integrate it with a winning business strategy," says Joe Lepley, Vice President, Operations Quality, for Pillsbury.

Lepley

"We're beginning to get that custom fit for total quality and it feels pretty good," Lepley says with a chuckle. The Pillsbury process started in the manufacturing area several years ago, and its implementation and expansion continue to this day. Along the way, Lepley says a management team visited companies that have won the Malcom Baldrige Award for excellence. No award winners have ever come from the food industry.

> TQM demands a total corporate commitment, a process that can cause no small measure of pain

Among the TQM cornerstones for Pillsbury are inventory control, improved supplier relations, low or no defects, low-cost production, and closer communication with retail customers—all supported by an integrated management system.

"It has been a regular part of our management-level discussion in the company since about 1986, and it has manifested itself in various different ways. Today, it's a recurring theme of continuous improvement. As a company, we've come to realize that the broad umbrella is continuous improvement of all our business processes," Lepley says. "Today we're working at being much more consumer focused."

The learning curve has been steep. When Pillsbury first began the process in the mid-1980s, total quality discussions were largely an academic exercise that ran parallel to, and separate from, actual management.

"We ran the business and then we had total quality meetings. That's understanding in your head and not your gut," Lepley says. But as the concept took root in the head, it was given access to the gut in key tactical areas of production.

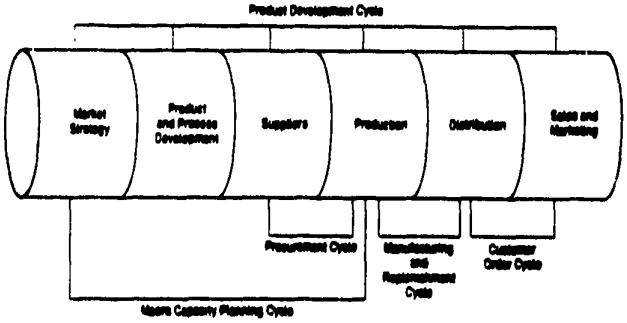
"We realized that there was tremendous opportunity to streamline processes, make them more cost effective, and operate on shorter cycle times. With the savings generated, we can reinvest in our brands in the ar-

Defining the right stuff

❑ BECAUSE OF MAJOR STRIDES DURING the last five years, food processing facilities have shown considerable improvement in overall quality performance. Though the food industry still lags behind most major U.S. manufacturing segments in total quality performance, it's on the ascendancy, according to a benchmark study last conducted in 1990 by the management consulting firm A.T. Kearney, based in Chicago.

William Windle, a Kearney vice president, says that food companies are focusing on the following key target improvement areas, all related to TQM:

- Better management and integration of various functions in the supply chain—getting the product to market faster and more efficiently.
- Increasing capacity utilization of plant and machinery beyond the industry average of 50%.
- Streamlining and bolstering the process of new product introductions by collapsing the lead time of bottleneck development processes and recurring manufacturing cycle times.
- Better training and development of employees at all levels.
- More upper management participation through total quality councils of key top managers.
- Vendor certification programs.
- Employee empowerment and self-directed work forces that provide employees with a sense of ownership for product and process quality.
- Real time quality information systems that link process, vendor and customer activities.



The top-rated total quality management performers bring cross-functional resources to bear on issues. These span the entire production pipeline to improve total system cost and product introduction time, according to A.T. Kearney, a management consulting firm. Product development in this system becomes a totally integrate process, rather than a series of independent steps.

"The biggest pitfall we've seen in the total quality approach is a loss of focus on business results and unaggressive target setting," Windle says.

A.T. Kearney studied more than 100 manufacturing plants in the food and related process industries to determine which locations and companies are the best. Its top-rated facilities included: Campbell Soup Co., Maxton, N.C.; PepsiCo.'s Frito-Lay subsidiary, Casa Grande, Ariz.; H.J. Heinz' Ore-Ida Foods subsidiary, Burley, Idaho; Kellogg, Lancaster, Pa.; and BSN's Dannon subsidiary, Minster, Ohio.

These plants excelled by making quality the responsibility of all employees, not a department, eliminating traditional first-line supervisors and achieving superior customer service with inventory levels as low as four days of supply. A.T. Kearney's prior study, conducted in 1987, cited no food processing facilities for exemplary quality and performance.

"The results these sites are achieving are not due to short-term efforts or tighter managerial control. We have found that the best have reaped most of the short-term benefit potential and are now realizing a second wave of improvement by focusing on longer-term, strategic improvement initiatives," the company's report says.

eas of new products, advertising, or aggressive trade and sales promotions," Lepley says.

This kind of cooperation began to tear down the walls between operations and started to build bridges where sales and production could work together in achieving strategic objectives. "The healthy integration of total quality into everyday ways of doing business is what was missing in the food industry just five years ago," he observes.

DuVernois

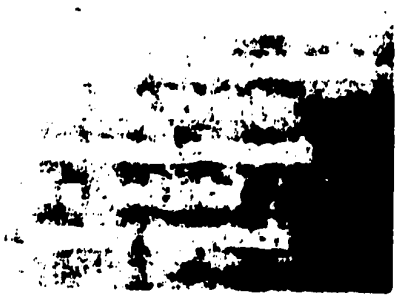
The hard part was and is understanding the scope of TQM. "The first bump along the road was a misconception that statistical process control [in manufacturing] and total quality were the same thing, and that if you applied statistics you must be doing total quality management. Statistical process control (SPC) is a wonderful technical tool, but it's only one small tactical element of a good total quality approach," Lepley says.

Once in place, however, the TQM generated considerable success. In a manufacturing environment, results were relatively easy to see and track. In addition, it had yet to widely involve the overall management structure of the company. Soon after the Grand Met acquisition, and a brief hiatus in TQM implementation, Pillsbury's Chief Operating Officer, Rob Hawthorn, re-kindled the process. His simple mandate to all operations: build quality in, take waste out, and build brands. The current TQM emphasis is designed to support this strategic initiative.

> No Malcom Baldrige Award winners have ever come from the food industry

"In the headquarters environment,

management processes are less defined and less tangible (than in the processing plant)," Lepley says. "The processes for new product development, for instance, are very hard to standardize. It's tough work. But we recognize that to be competitive and survive into the future we have to embrace all these new ideas and make changes in our organization as quickly as we can and as quickly as the market demands, or someone else will be doing it."



Today TQM principles provide the framework for new relationships with major retail customers. Working with retailers in pricing, promotion, and inventory control helps both sides maximize profitability and builds relationships.

Campbell Soup Co. has found TQM valuable in forging relationships with suppliers as well. Its Select Supplier program has generated cost savings of more than $6 million over the past five years through price reductions, fewer required inspections and consumer complaints, and increased production efficiency.

The concept is simply: Get it right the first time. But Campbell doesn't use the term TQM, or any acronym, to describe its management philosophy. "We don't use the word any more," says Francis DuVernois, Campbell's vice president, manufacturing. "It's really embodied in what we do as a company. TQM is evolving into more of a company program embodying more of the techniques and principles, but we don't give it a name."

The initial move was among the first in the food industry. Campbell started with employee involvement, quality circles and an emphasis on teamwork back in 1980. The next step was adopting Deming's 14 points (a quality control process) in manufacturing operations. "We got into statistical process control and trained our employees in how to implement it. So when TQM evolved in the mid-1980s, we were already doing many parts of it," DuVernois says.

The Select Supplier program grew out of this environment. Each supplier in the program is trained by Campbell management to bring them into compliance with Campbell specifications in the areas of product integrity, logistics, timing, and other key details. "The idea is to get materials into our plant ready to use, not ready to inspect," DuVernois says. "We believe that the principles of total quality management have got to be imbedded into everything we do, so it's no longer a department, it's a philosophy that's a part of our culture."

> "to be competitive and survive into the future we have to embrace all these new ideas and make changes . . . or someone else will"

The payoff has been significant for Campbell. Its TQM-inspired philosophy is a major contributing factor behind the company's impressive 1992 growth—earnings per share jumped more than 20%—in the face of an industry-wide recession.

Pillsbury and Campbell represent the kind of endorsement that will only add to TQM's considerable momentum in the food industry. By the turn of the century, the fundamentals of TQM will be imbedded in corporate management philosophy, and aimed at maximizing corporate performance.

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Presentation on Marketing by Dr. John Nelson

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Practical Marketing

Food Products

November 11, 1993

Kampala, Uganda

Basic Marketing – A Managerial Approach
E. Jerome McCarthy, Ph.D.
William D. Perreault, Jr., Ph.D.
Ninth Edition – 1987
Irwin - Homewood, Illinois

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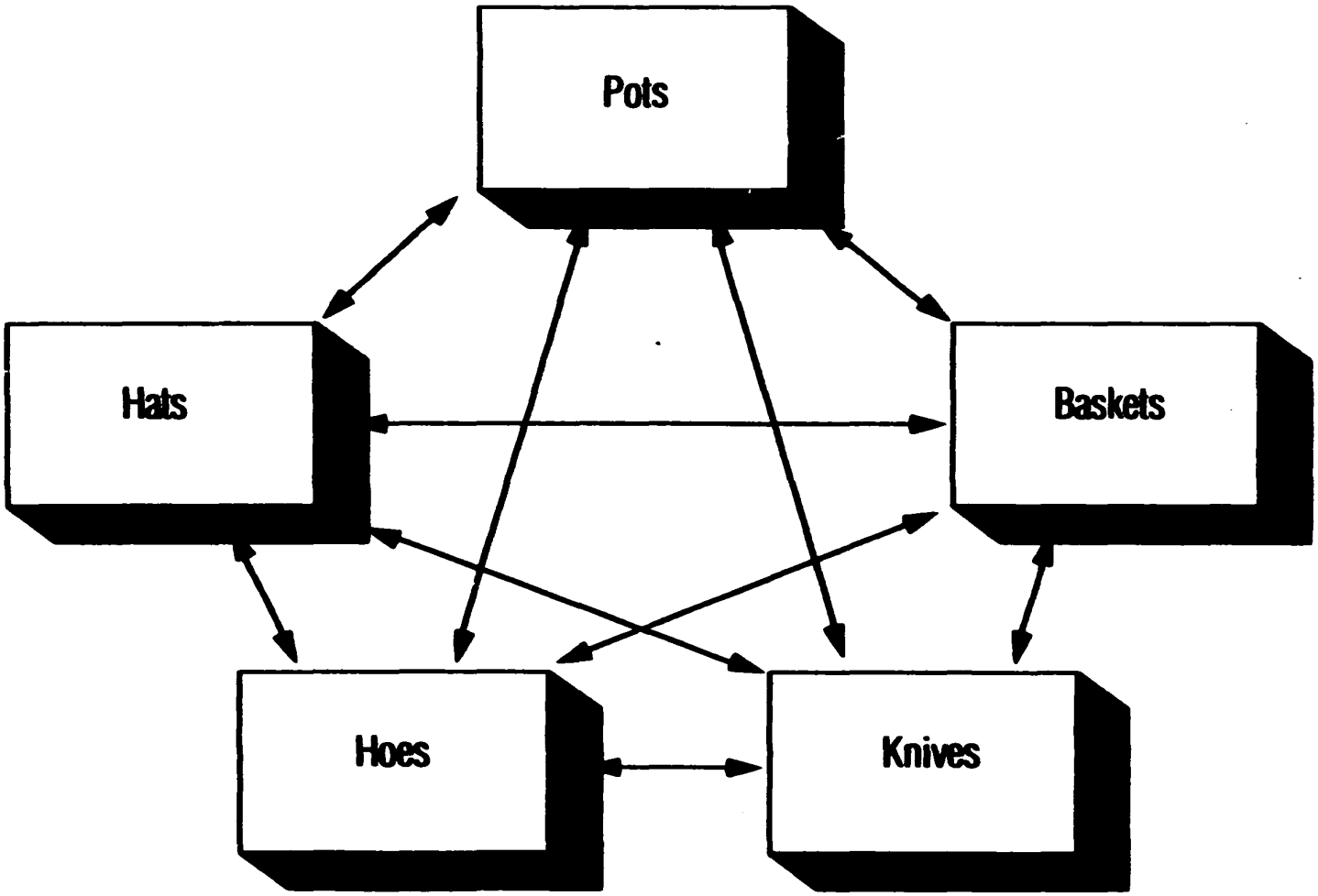
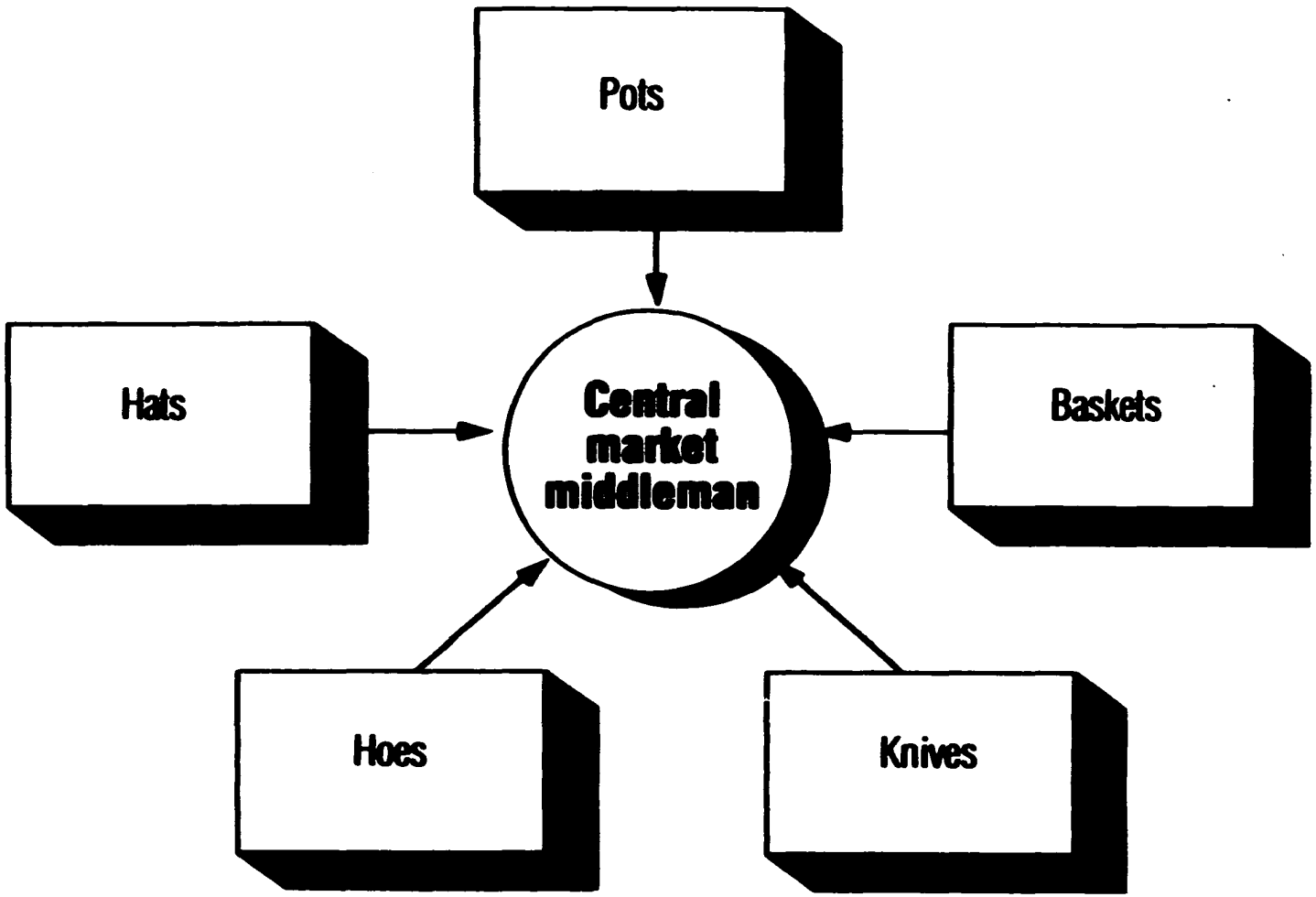
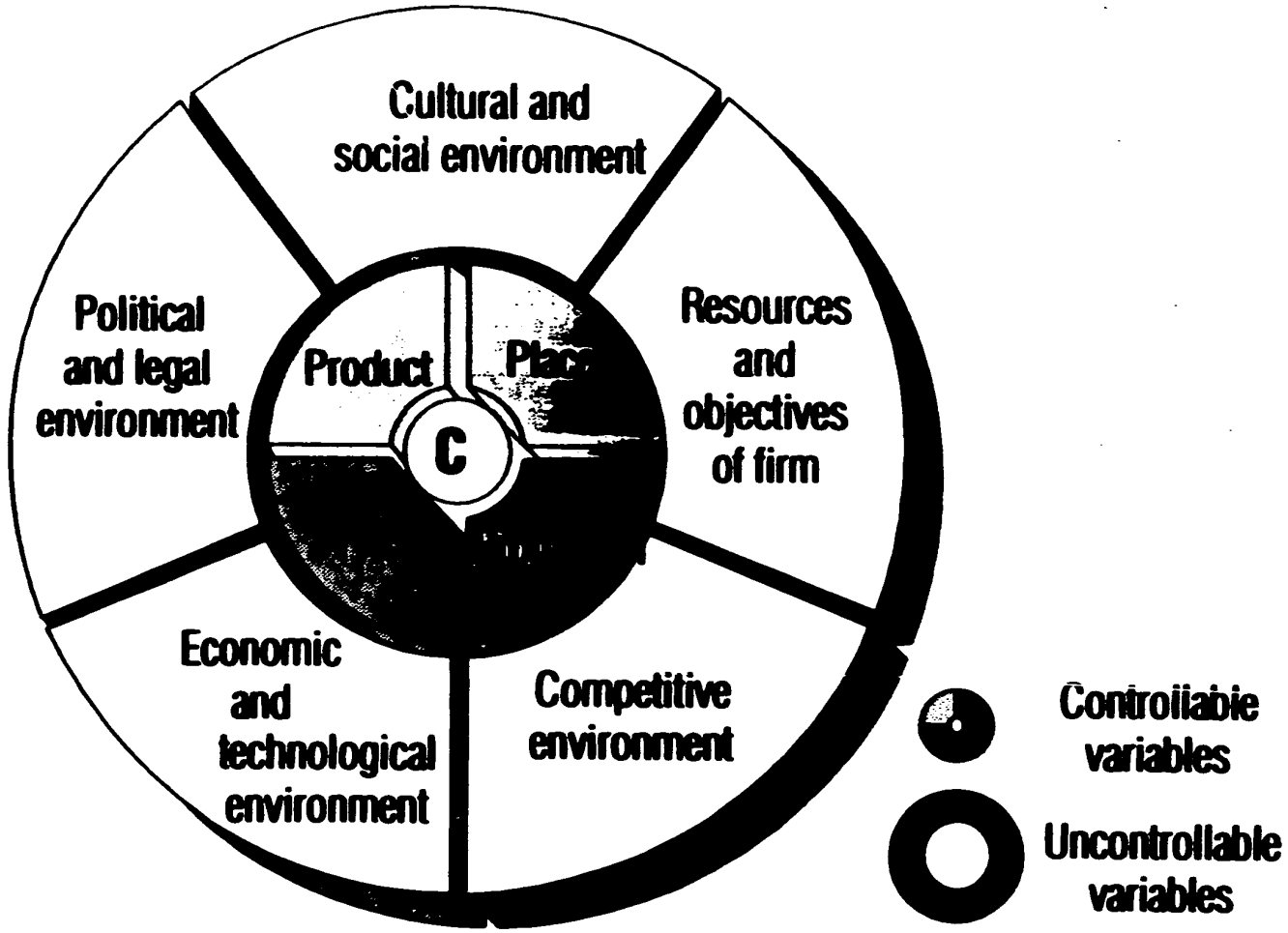
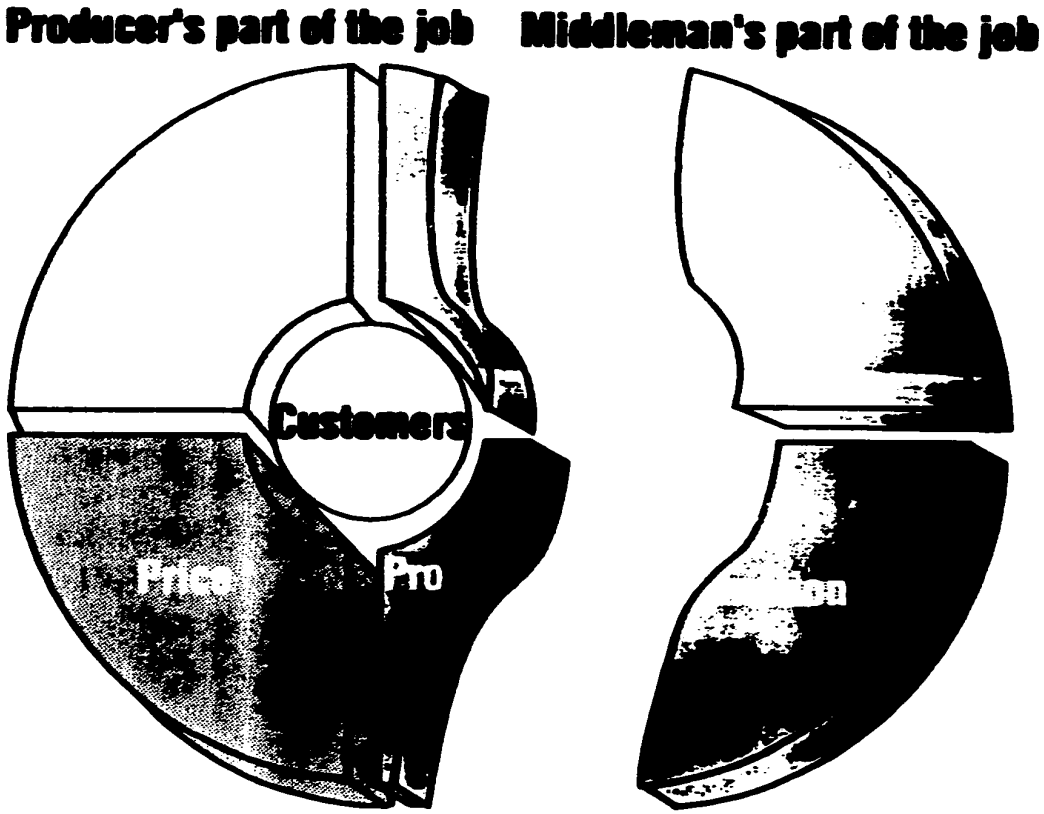
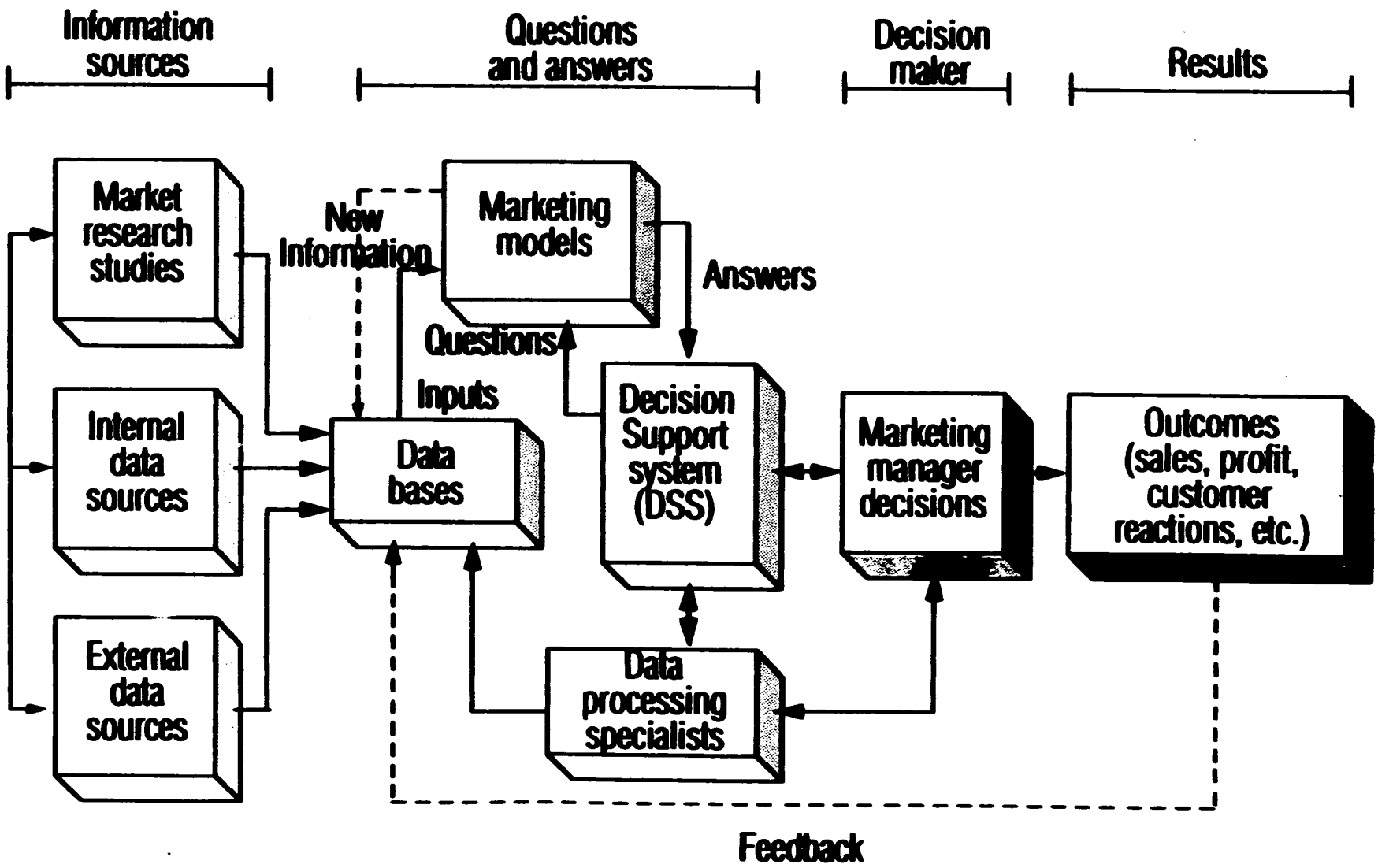


Fig.

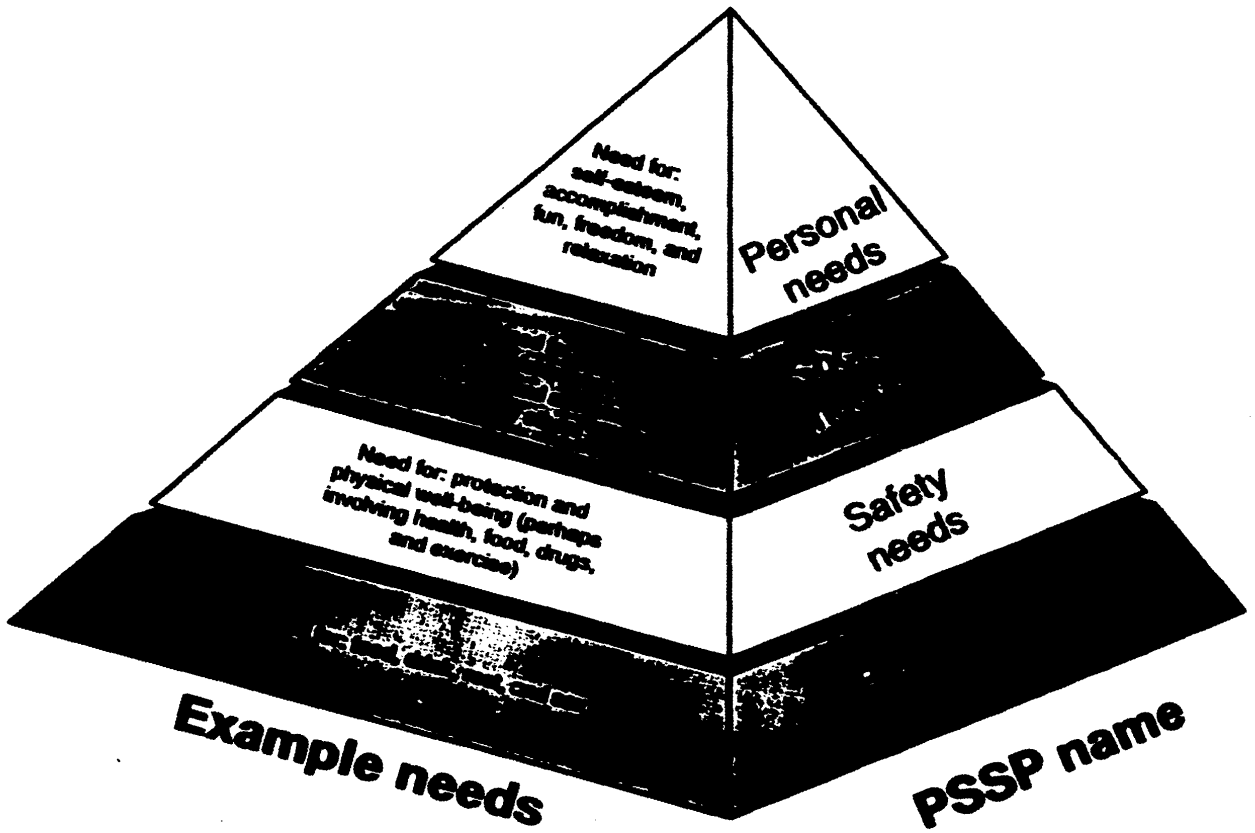

Pots
Hats
Central market middleman
Baskets
Hoes
Knives


Cultural and social environment
Resources and objectives of firm
Competitive environment
Economic and technological environment
Political and legal environment
Product
Place
C
Controllable variables
Uncontrollable variables


Producer's part of the job
Middleman's part of the job
Customers
Price
Pro


Information sources
Questions and answers
Decision maker
Results
Market research studies
Internal data sources
External data sources
New Information
Marketing models
Answers
Questions
Inputs
Data bases
Decision Support system (DSS)
Marketing manager decisions
Outcomes (sales, profit, customer reactions, etc.)
Data processing specialists
Feedback

Potential target market dimensions	Effects on decision areas
1. Geographic location and other demographic characteristics of potential customers	Affects size of *Target markets* (economic potential) and *Place* (where products should be made available) and *Promotion* (where and to whom to advertise)
2. Behavioral needs, attitudes, and how present and potential goods or services fit into customers' consumption patterns	Affects *Product* (design, packaging, length or width of product line) and *Promotion* (what potential customers need and want to know about the product offering, and what appeals should be used)
3. Urgency to get need satisfied and desire and willingness to compare and shop	Affects *Place* (how directly products are distributed from producer to consumer, how extensively they are made available, and the level of service needed) and *Price* (how much potential customers are willing to pay)


Need for: self-esteem, accomplishment, fun, freedom, and relaxation
Personal needs
Need for: protection and physical well-being (perhaps involving health, food, drugs, and exercise)
Safety needs
Example needs
PSSP name

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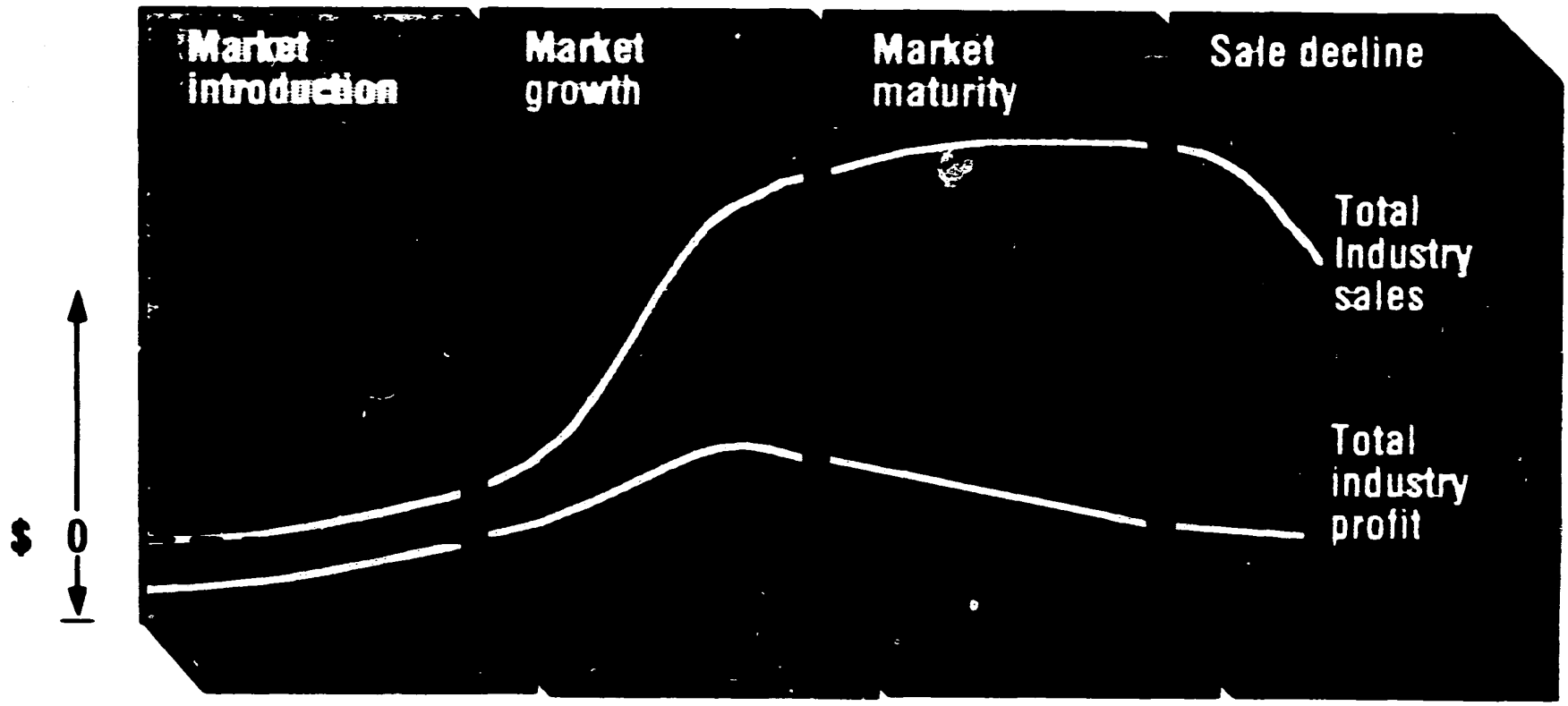
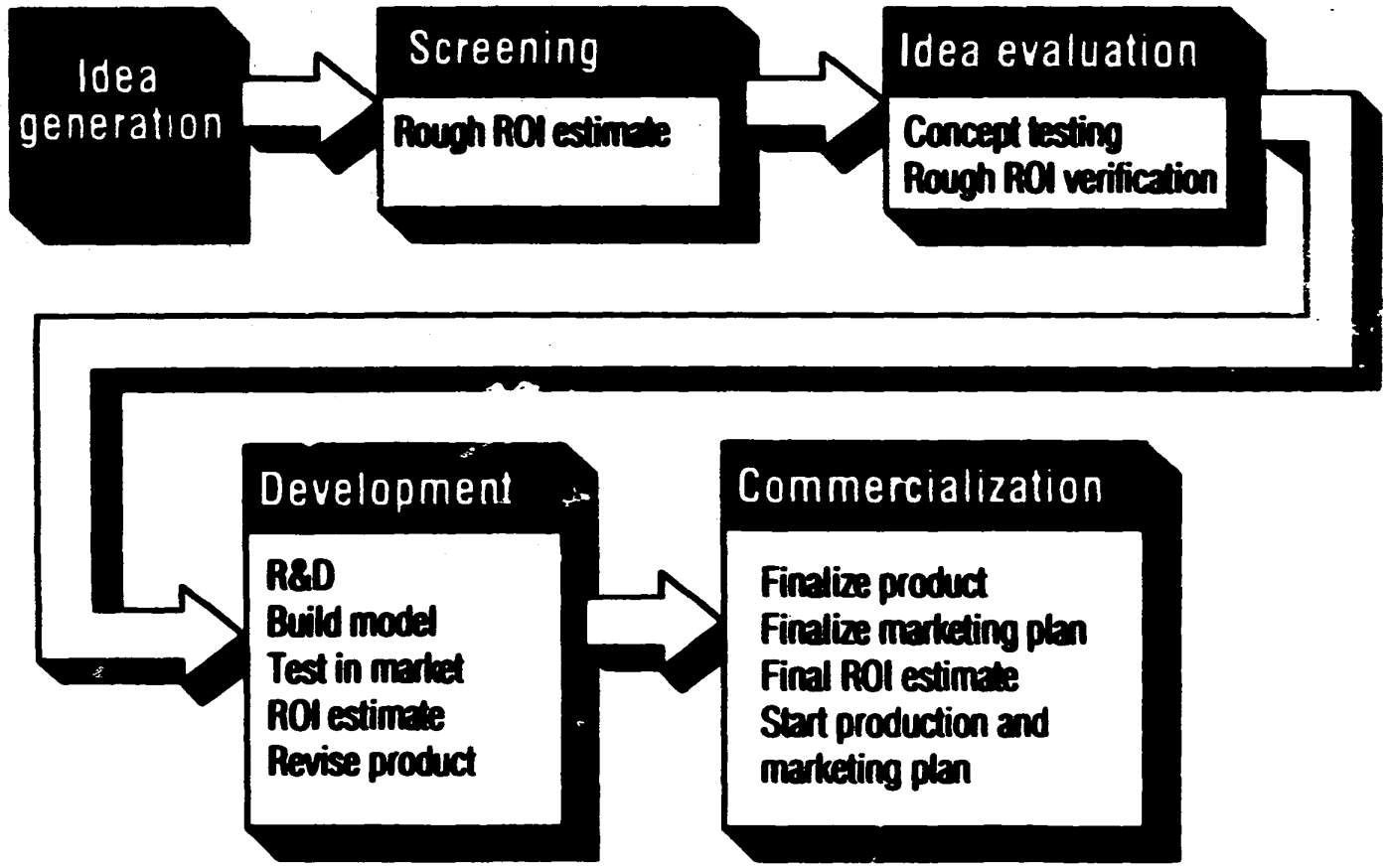

Market introduction
Market growth
Market maturity
Sale decline
Total Industry sales
Total industry profit
$
0


Idea generation
Screening
Rough ROI estimate
Idea evaluation
Concept testing
Rough ROI verification
Development
R&D
Build model
Test in market
ROI estimate
Revise product
Commercialization
Finalize product
Finalize marketing plan
Final ROI estimate
Start production and marketing plan

Important dimensions \ Types of Situations	Pure competition	Oligopoly	Monopolistic competition	Monopoly
Uniqueness of each firm's product	None	None	Some	Unique
Number of competitors	Many	Few	Few to many	None
Size of competitors (compared to size of market)	Small	Large	Large to small	None
Elasticity of demand facing firm	Completely elastic	Kinked demand curve (elastic and inelastic)	Either	Either
Elasticity of industry demand	Either	Inelastic	Either	Either
Control of price by firm	None	Some (with care)	Some	Complete

Topic	Marketing orientation	Production orientation
Attitudes toward customers	Customer needs determine company plans	They should be glad we exist, trying to cut costs and bring out better products
Product offering	Company makes what it can sell	Company sells what it can make
Role of marketing research	To determine customer needs and how well company is satisfying them	To determine customer reaction if used at all
Interest in innovation	Focus on locating new opportunities	Focus is on technology and cost cutting
Importance of profit	A critical objective	A residual what's left after all

(continued)

Topic	Marketing orientation	Production orientation
Role of customer credit	Seen as a customer service	Seen as a necessary evil
Role of packaging	Designed for customer convenience and as a selling tool	Seen merely as protection for the product
Inventory levels	Set with customer requirements and costs in mind	Set with production requirements in mind
Transportation arrangements	Seen as a customer service	Seen as an extension of production and storage activities with emphasis on cost minimization