

CASE 1: Home-Style Cookies

The Company

The Lew-Mark baking Company is located in a small town in western New York State. The bakery is run by two brothers, Lew and Mark, who formed the company after they purchased an Archway Cookie franchise, with exclusive rights in New York and New Jersey, it is the largest Archway franchise. The company employs fewer than 200 people, mainly blue-collar workers, and the atmosphere is informal.

The Product

The company's only product is soft cookies of which it makes over 50 varieties. Larger companies, such as Nabisco, Sunshin, and Keebler, have traditionally produced biscuit cookies, in which most of the water has been baked out, resulting in crisp cookies. Archway cookies have no additives or preservatives. The high quality of the cookies has enabled the company to develop a strong market niche for its product.

The Customers

The cookies are sold in convenience stores and supermarkets throughout New York and New Jersey. Archway markets its cookies as "good food" -- no additives or preservatives -- and this appeals to a health-conscious segment of the market. Many customers are over 45 years of ages, and prefer a cookie that is soft and not too sweet. Parents with young children also buy the cookies.

The Production Process

The company has two continuous band ovens that it uses to bake the cookies. The production process is called a batch processing system. It begins as soon as management gets orders from distributors. These orders are used to schedule production. At the start of each shift, a list of the cookies to be made that day is delivered to the person in charge of mixing. That person checks a master list, which indicates the ingredients needed for each type of cookies, and enters that information into the computer. The computer then determines the amount of each ingredient needed, according to the quantity of cookies ordered, and relays that information to storage silos located outside the plant where the main ingredients (flour, sugar, and cake flour) are stored. The ingredients are automatically sent to giant mixing machines where the ingredients are combined with proper amounts of eggs, water, and flavorings. After the ingredients have been mixed, the batter is poured into a cutting machine where it is cut into individual cookies. The cookies are then dropped on a continuous band (conveyor belt) and transported through one of two ovens. Filled cookies, such as apples, date, and raspberry, require an additional step for filling and folding. The nonfilled cookies are cut on a diagonal rather than straight. The diagonal-cut cookies require less space than straight-cut cookies, and the result is a higher level of productivity. In addition, the company recently increased the length of each oven by 25 feet, which also increased the rate of productions. As the cookies emerge from the ovens, they are fed onto spiral cooling tracks 20 feet high and 3 feet wide. As the cookies come off the cooling racks, workers place the cookies into boxes manually, removing any broken or deformed cookies in the process. The boxes are then wrapped, sealed, and labeled automatically.

Inventory

Most cookies are loaded immediately onto trucks and shipped to distributors. A small percentage are stored temporarily in the company's warehouse, but they must be shipped shortly because of their limited shelf life. Other inventory includes individual cookie boxes, shipping boxes, labels, and cellophane for wrapping. Labels are reordered frequently, in small batches, because FDA label requirements are subject to change, and the company does not want to get stuck with labels it can't use. The bulk silos are refilled two or three times a week, depending

on how quickly supplies are used. Cookies are baked in a sequence that minimizes down-time for cleaning. For instance, light-colored cookies (e.g., chocolate chip) are baked before dark-colored cookies (e.g., fudge), and oatmeal cookies are baked before oatmeal raisin cookies. This permits the company to avoid having to clean the processing equipment every time a different type of cookies is produced.

Quality

The bakery prides itself on the quality of its cookies. Cookies are sampled randomly by a quality control inspector as they come off the line to assure that their taste and consistency are satisfactory, and that they have been baked to proper degree. Also, workers on the line are responsible for removing defective cookies when they spot them. The company has also installed an X-ray machine on the line that can detect small bits of metal filing that may have gotten into cookies during the production process. The use of automatic equipment for transporting raw materials and mixing batter has made it easier to maintain a sterile process.

Scrap

The bakery is run very efficiently and has minimal amounts of scrap. For example, if a batch is mixed improperly, it is sold for dog food. Broken cookies are used in the oatmeal cookies. These practices reduce the cost of ingredients and save on waste disposal costs. The company also uses heat reclamation: The heat that escapes from the two ovens is captured and used to boil the water that supplies the heat to the building. Also, the use of automation in the mixing process has resulted in a reduction in waste compared with the manual methods used previously.

New Products

Ideas for new products come from customers, employees, and observations of competitors' products. New ideas are first examined to determine whether the cookies can be made with existing equipment. If so, a sample run is made to determine the cost and time requirements. If the results are satisfactory, marketing tests are conducted to see if there is a demand for the product.

Potential Improvements

There are a number of areas of potential improvement at the bakery. One possibility would be to automate packing the cookies into boxes. Although labor costs are not high, automating the process might save some money and increase efficiency. So far, the owners have resisted making this change because they feel an obligation to community to employ 30 women who now do the boxing manually. Another possible improvement would be to use suppliers who are located closer to the plant. That would reduce delivery lead times and transportation costs, but the owners are not convinced that local suppliers could provide the same good quality. Other opportunities have been proposed in recent years, but the owners rejected them because they feared that the quality of the product might suffer.

Questions (50 points)

- (10 pts) What are two ways that the company has increased productivity? Why did increasing the length of the ovens result in a faster output rate?
- (10 pts) What factors cause Lew-Market to carry minimal amount of certain inventories? What benefits result from this policy?
- (10 pts) Do you think that the company is making the right decision by not automating the packing of cookies? Explain your reasoning.
- (10 pts) Briefly describe the company's strategy.
- (10 pts) What advantages and what limitations stem from Lew-Mark's not using preservatives in cookies?

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Quality in Computer Services

The customer service division of TRW is an independent supplier of maintenance, repair, and customer support services for computers and other information-handling system. TRW is part of the growing third-party maintenance suppliers which do not, as a rule, sell hardware or software products, except as a product-life extension service when the original manufacturer has discontinued support of such products. At the same time, much of the third-party maintenance service business is developed in response to manufactures and customer needs.

Traditional Measures of Quality: The Customer's Criteria

Ever since computer system and automated office equipment were introduced to the business world, there has been a need for organizations to repair equipment. There was the fear of computerization - that business could not be conducted efficiently because information would be lost.

As manufactures of automatic data processing equipment encountered this customer fear, their strongest ally was their service organization, the people who would be on-call at any hour of the day or night to fix problems with the computer. A strong customer-support program overcame the fear of computerizing a business operations. Early adapters of computer systems had to have the assurance that they would not be risking their business operations to the computer. They had to have a comfort factor; they had to know that service people were available to find lost information, restore system operations, and keep the productivity high. To ensure this safety factor, they would gladly sign maintenance contracts even if that were not included as part of the system purchase.

Defining New Quality Standards

There have been many changes during the past decade that have made it more difficult for service providers to meet their customers' expectations for quality as defined by traditional measurement standard. Today there is a computer on almost every business desk. Operators of these systems often receive little or no formal training and are far less experienced. Still, these are customers who expect prompt resolution to any and all problems. Whatever the cause, it is up to the successful servicer to correct the situation and get the customer back on-line. This may mean doing much more than fixing the equipment. It might include preparing a customized preventive maintenance program or a recommendation to minimize the problem situation that a customer site is experiencing. It may include recommendations for new software or a totally new environment. It may require spare parts and training so that the customer can service his or her own equipment.

Customers are more apt to purchase mixed hardware and software products from various suppliers to enable them to take full advantage of available technology and cost savings. But they do not want to work with a wide number of service suppliers and their many different programs. They prefer to have one service provider for all products. To further complicate the servicer's task, these same customers are installing these products across local and wide-area networks. This often results in lower density of a given product in a specific location - making it more difficult for the service provider to ensure the availability of technical expertise and materials for all products in all locations.

With the advancements in technology comes an increased reliability of information-handling systems. As a result, some customers are less quick to insure their systems investment with maintenance contracts. This is true especially when system downtime does not seriously impact the operation of a business. Instead, customers often are willing to risk a failure and secure service on an as-needed basis. Others are interested in a self-service approach. Still, because they are paying for service on a time-and-materials basis, they are not tolerant with extended repair times, repeat service calls, or unnecessary replacement of parts. Even though they may not have a maintenance contract, these customers expect a reasonable response time when they do have a problem. Customers want a simple service program tailored to their needs.

With the costs of service rising due to the high people costs of the service business and the reduction of price in software and hardware - services are becoming a more significant portion of the product, the cost of service may be greater than the original purchase price of the product. As a result, customers are not only more sensitive to the cost of service, they expect more from it.

Fast response time and fast repair time will always lead the list of quality standards within the computer services industry. Equally important, however, are a number of communication standards that are becoming increasingly important. Customers want the person-to-person interaction that ensures answers, builds confidence, and reduces worry. Current customers judge their service programs and service providers on the amount and quality of communications that take place when problems occur and after they are resolved.

An important component in a quality service program is a steady focus on the customer's business, not on the customer's equipment. Understanding how a customer has applied technology to a business operation will provide the focus necessary to develop a quality service program. Treating each customer as having a unique situation helps the servicer focus on quality standards. Whatever servicer must agree on pre-established performance standards so there is no ambiguity in measurement methods.

Applying Technology

One of TRW's early applications, driven by the need to support complex nationwide data communications networks, was the development of a centralized data communications test center. This center is used to assist both customer personnel and TRW service engineers in diagnosing data communication problems. It has all but eliminated the delays, frustration, and expense that often result when the customer attempts to work with telephone companies, data centers, and service providers to resolve data communications problems.

A later application, driven by the rapid growth in the microcomputer systems market, was the development of a multipurpose system and assembly tester called SLEUTH. Equipped with this highly versatile tester and proprietary operating system and diagnostic software, TRW service engineers can service a wide variety of mixed-vendor systems without the difficulties and costs associated with carrying vast amounts of technical documentation and specialized test equipment. It enables prompt, accurate fault diagnosis without the closely shot-gunning approach of swapping assemblies, a method used by many other service providers.

While the SLEUTH tester is an intelligent device, its intelligence must be update or supplemented if the complexity of the problem exceeds its capabilities. To address this future, TRW has undertaken the development of two additional technology applications. The first is an on-line technical information system called SLATE. This system provide all TRW service engineers access to the latest technical information pertaining to products they are servicing, and it update the SLEUTH testers with current diagnostics and support software. The system consists of a central database and a communications controller that allows access via dial-up telephone lines.

In addition, the SLATE database contains a file of problems and related solutions for the products serviced by TRW. Based on analysis of the thousands of service activities completed by TRW daily and the input received from service engineers, who enter their data directly to SLATE via the dial up communications link, an extensive file of product problems, symptoms, causes, and solutions is maintained and made available to all TRW's service engineers. All the information and capabilities of SLATE are available to all TRW service engineers and authorized customers twenty-four hours a day seven days a week.

Further enhancing its own ability to deliver consistently high quality across a wide range of products, TRW is installing Fieldwatch, an integrated software package, to manage its complete service operation. The package includes six modules titled as follows: dispatch, technical assistance center (TAC), billing, logistics, repair center, and scheduling. The dispatch module contains customer records pertaining to the site, equipment, contract provisions, and the complete service history. It also includes information on the training and locations of technicians and service engineers. The TAC module allows product-line technical experts to screen calls for service and provide technical assistance to service engineers at customer locations. The billing module handles all billing and record-keeping to ensure that invoices are filled out accurately and are based either on contract terms or accurately expense for time and material. The logistics module handles the spare parts inventory. Instant access to part numbers, prices, and stocking locations makes the service call faster and more productive. The repairable center module contains information to track repairable assemblies by part number and serial number. The repair center module works in concert with the scheduling module, so that repaired parts are available when and where they are needed.

Questions for Reading (total 50 points)

- (10) 1. Describe how customer expect and measurements of quality have changed in the computer service industry.
- (10) 2. Explain this statement, "Customers do not think about maintenance or repair service. They think about uptime and their business." What implications does this have for establishing an effective computer service program?
- (15) 3. How has TRW used technology to enhance its service quality? What specific needs do SLEUTH, SLATE and Fieldwatch address?
- (15) 4. Currently, what is the tangible evidence of quality in computer service? As diagnostic software becomes more advanced, it is likely that service programs will become almost invisible from the customer's perspective. How will this affect customer expectations and perceptions of quality?