PART I

Quantity Food Planning and Management

CHAPTER 1

Raising the Standard

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LEARNING OBJECTIVES

By the end of this chapter, the reader will:

1. Understand the foodservice industry, its mission, and organization.
2. Recognize the career opportunities available and the levels of responsibility required.
3. Be able to distinguish between such terms as *management, cultural diversity, employee productivity*, and *total quality management*.
4. Know the power the computer plays within the modern foodservice operation and appreciate its applications, from menu planning and forecasting to customer ordering and delivery and payment.

SELECTED WEB SITE REFERENCES

American Culinary Federation
www.acfchefs.org

American Hotel & Motel Association
www.ahma.com

Club Managers of America
www.cmaa.org

Education Institute of the American Hotel & Motel Association
www.ei-ahma.org

Educational Foundation of the National Restaurant Association
www.edfound.org/

National Restaurant Association
www.restaurant.org

NCR Corporation
www.ncr.com

Remanco International Inc.
www.remanco.com

THE FOODSERVICE INDUSTRY AND ITS MISSION

Foodservice is one of the largest industries, projecting nearly $354 billion in sales in 1999. Foodservices contribute substantially to the mobility of individuals and the flexibility of one's social life.

The foodservice industry employs more people than does any other industry. Of every $2.50 spent for food, $1 is spent in foodservices. The industry has enjoyed steady growth since before World War II, with an average increase of about 5 percent per year. Its growth has been the most rapid of that of all retail industries.

The 750,000 or more foodservices that provide this food are widely dispersed and vary from small snack or take-out shops, drive-ins, and coffee shops to moderate-sized restaurants and hotel operations, to huge foodservices such as those serving the military, schools, and large hospital complexes. Airline foodservices alone do millions of dollars in business each year.

Because the foodservice industry is labor intensive and because it is divided into many small units that must produce in small amounts, it has never been able to obtain the benefits of mass production. The industry is characterized by low productivity, low profit margins, low capital investment, and high labor cost per dollar of sales. The industry also has a high labor turnover rate: workers move from job to job with ease, and each year many move in and many others move out.

The steady flow of workers in and out, plus job-hopping, reduces operating efficiency and is costly. It has been estimated that training a new worker to replace an experienced one can cost the operation as much as 8 percent of a worker's annual salary for the first year. The industry has moved to reduce its labor turnover by trying to provide stable, financially attractive positions for workers. Although pay is low in some categories, it is good in others, especially at the supervisory and management levels. Graduates from four-year colleges in the hospitality industry find plenty of jobs available at salaries equal to those offered to beginning engineers.

Many foodservice operations are family-owned or individual-owned enterprises, but this characteristic has been constantly eroding over the last thirty years. Today, massive foodservice chains do most of the dollar business, and the small, single-outlet enterprise's share of the market is shrinking. The large corporate organization is the leader in the industry.

Within the last thirty years, the type of food used in foodservices has gradually changed. More processed foods have found their way into use, some of which are practically ready to serve. Many operations still want to produce their own food, but even they now use more processed foods to do it. Another development is the central commissary, where foods are mass-produced and then shipped to satellite units to be served. The problem of maintaining quality while

obtaining desirable economies has slowed the growth of central commissary production, however, and some operations that had instituted central commissaries have now discontinued them.

The industry has had to change to meet a changing patron market, too. People eat less, have clearer concerns for their health, are eating out more, and are more discriminating shoppers. The industry has become highly competitive, and its management is now largely composed of people who have had training in business or in specialized schools that teach foodservice management.

TRAINING THE LABOR FORCE

The foodservice industry employs millions of people, and each year several hundred thousand new workers must be found to fill newly created or newly vacated jobs. Until recently, much of this new labor was recruited from "off the streets." These people simply walked in and were assigned jobs whose duties they learned by experience. Their teachers were other workers who may or may not have known how to do the job; as a result, the new worker often learned to do the job incorrectly or inefficiently. Upper-echelon jobs were often filled by promotion from within the operation's existing ranks. Not infrequently, the manager or even the president of a large corporation was once a pot washer or bus person.

Within the last forty years, a sizable educational system for training employees at all levels of the industry has emerged. Unions, too, have concerned themselves with educational courses—in part so that they can certify the job abilities of members better. Unions often work with public schools, but in some cases they have established their own training and certification centers. The government has also been active in promoting short educational programs to train workers for the foodservice industry.

Professional associations have set up programs to give educational opportunities to their members. The Club Managers Association has developed an educational program that must be taken by any member who wishes to use the title CM (Certified Manager). The American Dietetic Association requires all dietitians to be certified by examination and to continue to accumulate educational and professional points during their professional lives if they intend to use the title RD (Registered Dietitian) after their names. The School Foodservice Association and some of its state organizations now require all workers to gain educational credits in order to be certified. The Educational Foundation of the National Restaurant Association has its Food Professional Manager Program, offering certification to members, and the Dietary Managers Association (DMA) offers professional development to its membership as well. Comparable programs exist in other professional groups in the industry. In addition, the industry sponsors a great many educational scholarships for interested persons.

Home study courses are popular, too. Many universities and other schools sponsor training programs for workers, supervisors, and managers. At some institutions, 5000 or more people per year register for correspondence courses. Many high schools offer courses for waiters, waitresses, cooks, and other service positions.

Many community colleges and junior colleges have excellent programs for training workers. The emphasis varies from vocational courses for those wanting to work as chefs or maître d's to economics and management training for people interested in becoming food and beverage managers, sales managers, or catering or banquet managers. Four-year hospitality programs commonly accept credits from these schools.

Nearly 200 universities and colleges have four-year programs in the area, and some offer master's degrees and a few the doctorate. Over 2000 graduates from four-year schools are thought to enter the foodservice field each year—and the industry could use twice that number. Each year companies make recruiting visits to educational institutions, offering graduates a three month or longer training program before being moved into supervisory or managerial positions. Because of the rapid growth of many businesses, some graduates hold important positions within four or five years after leaving college. The growth of graduate programs to develop top executives and teachers for the industry has also been significant.

Most four-year programs are offered in the College of Business, but others may be found in the College of Home Economics or the College of Food

Technology, and still others exist as separate schools. The discipline of foodservice management is today well recognized in academic circles. Most academic programs require that students spend many hours working in the industry; internships have been established whereby students gain on-the-job experience and receive academic credit. Such an approach works best because—although many basic facts can be learned in class—the student must be exposed to situations that are related to the real work world in order to develop into a successful manager.

Our workforce in the foodservice industry is rapidly changing. Native Americans, Latinos, Asians, and African-Americans now make up a significant part of the labor force, requiring management to understand cultural differences among employees. Also, the number of older people and those with disabilities in the foodservice industry has increased significantly.

Cultural Diversity

Workforce diversity is no longer just a gender or religion management consideration. While it originally referred simply to a person's gender or ethnic group, today, workforce diversity encompasses differences in age, affectional orientation or sexual preference, economic status, educational background, ethnicity, gender, geographic location, income, marital status, lifestyle, and religion, to name a few characteristics.

Foodservices that manage workforce diversity efficiently benefit from more effective recruiting, improved management quality, increased market share and productivity, and reduced labor costs through lower employee turnover. Although developing and maintaining programs that enhance diversity can be difficult to implement, the benefits far outweigh the disadvantages. A comprehensive and carefully planned approach for implementation is required.

One foodservice company, McDonald's, has been successful through its *Changing Workforce Programs*, whereby different courses are offered to help employees work through gender and cultural differences. These courses, such as Managing the Changing Workforce, Women's Career Development, Black Career Development, Hispanic Career Development, and Managing Cultural Differences and Managing Diversity, encourage open communications.

The end result is a raising of the standard of professionalism within the foodservice industry. As labor is tight in many markets, workforce diversity must play an even greater role in the success of foodservice operations tomorrow. At the present time, Latinos and African-Americans make up 25 percent of our total population, and this percentage is expected to grow.

Employee Productivity

Another concept that raises the standard within the industry is employee productivity. People who enjoy coming to work generally produce more, as will workers who believe that their work will be valued or lead to advancement. The challenge is to clearly define what good work is for the employee and how that can be measured. Reward systems are the key to recognizing individual contributions in order to encourage greater productivity.

In one operation, ability to work in any station within the kitchen was looked upon as excellent work. That way, employees could assist others in accomplishing tasks at hand when a rush would come. Accordingly, employees were encouraged to learn each other's job and were recognized as having done so by receiving a pin to wear for each station learned. With the knowledge of sauté, broiler, saucier, garde-manger, and other positions under one's belt, that employee became highly productive for the kitchen as a whole. Morale improved and turnover was lowered.

With improved productivity, any foodservice operation will attract and retain employees better. A positive atmosphere in which employees are recognized for their contributions, rather than being criticized for their mistakes, will do much to improve productivity. Supervisors should look for employees to do the job approximately correctly, at which point recognition should be given.

MANAGEMENT AND FOODSERVICES

This book is designed to move the student in a logical, sequential order through the various management steps involved in quantity foodservice (we shall define a *quantity foodservice facility* as one preparing foods in

quantity to serve to people within a designated period of time). Management is given first priority in this introductory chapter, although it presents only a brief summary of management's scope and functions. The ensuing chapters consider the basics of planning quantity food production and service, and then take up specifics of food production. Food production issues are viewed from the standpoint of what a manager ought to know to be able to manage these operations well and to ensure that adequate standards in food production and service are satisfied. The management skills needed to operate a foodservice are presented in such a way as to prepare the reader for the responsibilities of an entry-level position in the industry. By integrating planning, preparation, and management in an orderly fashion, this book is designed to help the student, manager, owner/operator, or other interested person build the skills necessary to operate a successful quantity foodservice facility.

Management Defined

Management is sometimes defined as the element in an enterprise that plans, staffs, organizes, directs, and controls an enterprise so that it reaches its goals. It is management's job to establish goals, plan how to reach them, and then organize, staff, lead, and control so as to reach them. Often, these actions are called the *function of management*. Sometimes, *management* is defined as reaching goals through people. This is a good definition because it underscores that managers alone cannot make an operation a success; it takes others working with management to accomplish this.

Some workers see management as the boss giving the orders, as the one getting the most pay for doing the least work, or as the sector of the company that knows less about the operation than anyone else. Such opinions are often based on a lack of knowledge about what the manager is or does. Management's failure to inform members of the operation about its essential role can be costly to its image.

Good management often consists of the ability to plan operations intelligently and then to select and direct people so that the plans come to a successful conclusion. The more effectively managers prevail upon others to do a good job, the better management succeeds in its job. Many people are involved in achieving an enterprise's goals, and management is responsible for getting people's energy going in the right direction.

Levels of Responsibility

The hierarchy in a foodservice has three levels: management; mid-management or supervisory; and workers. To maintain a smooth-functioning facility, employees at each level must adequately perform the essential functions allocated to that level.

Management comprises the chairman and members of the board in a corporation, the president, the manager, and even the assistant managers. Mid-management may reach as high in the organization as the assistant managers and may extend as low as supervisors; sales managers, food and beverage managers, and purchasing department heads are typically considered mid-management, as are chefs, chef stewards, the maître d'hôtel, the catering manager, a food production manager, and a dietitian in charge of a hospital's dietary department. The workers are everybody else. In a traditional continental-cuisine organization, the executive chef is a mid-management person under a food and beverage manager or other manager. The *sous chef* is a supervisor under the executive chef, and the *chefs des partis* (heads of production, such as the *chef de saucier* in charge of the sauce, gravy, and soup department, and the garde-manger, who heads the cold meat section) are sub-supervisors under the *sous chef*. Under these people come workers such as cooks, helpers, and others working in the organization. In most foodservices, the number of people at the worker level far exceeds the number of people at the other two levels.

The management level plans action, the mid-management initiates and supervises action, and the workers carry it out. It is important that all employees in the organization know what type of action they are responsible for. When people at a lower level try to assume the functions of others at a higher level (or vice versa), conflict can occur. The intruding person is resented as encroaching on someone else's turf. A person promoted from one level to a higher one sometimes encounters problems in this regard because he

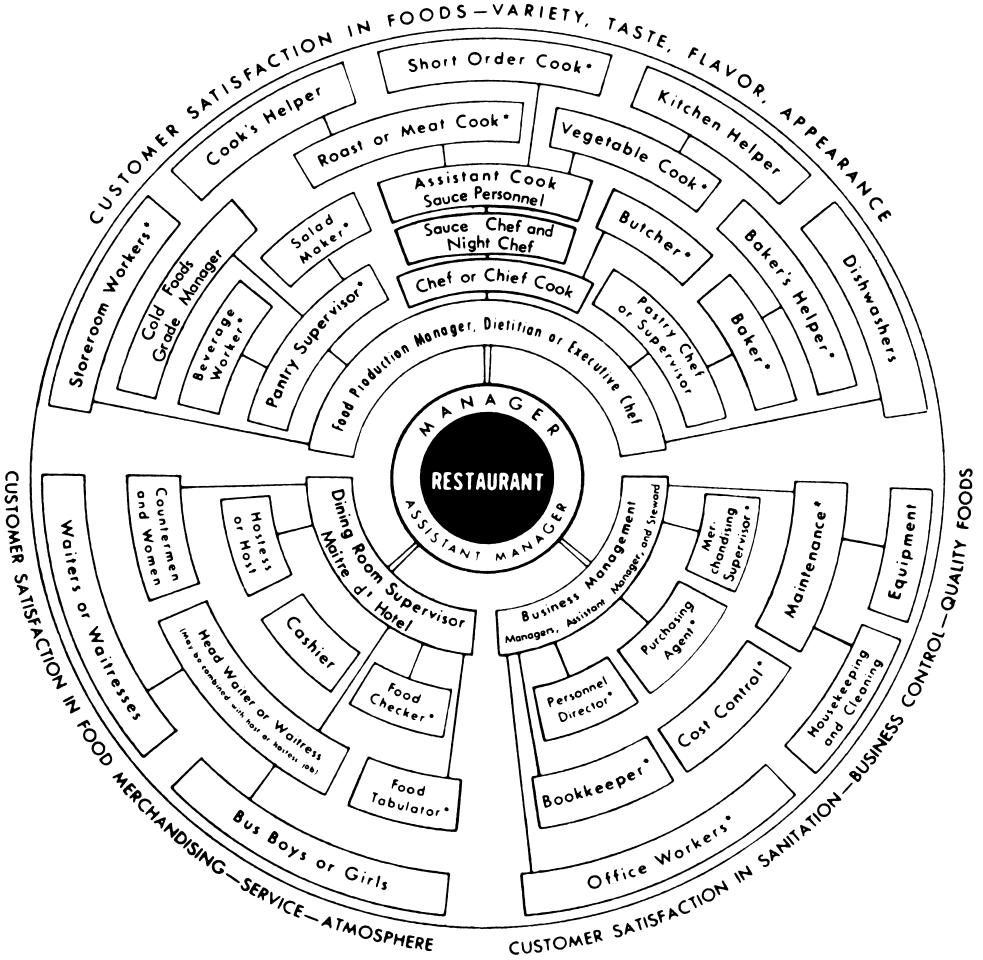
or she finds it difficult to break away from the action patterns learned in the lower level. This is seen when a supervisor promoted from worker ranks fails to supervise without constantly pitching in and doing jobs others should be doing.

Career Opportunities

The employment outlook in foodservice is excellent. The reason for this is due to the unprecedented growth in the industry over the past two decades, resulting in exceptional opportunities, especially for the graduates of management programs.

The managerial job pool is growing at a rate better than the rest of the economy. In some segments, such as contract foodservice and quick-service restaurants, the need for entry-level management is acute. New opportunities will arise in management for those willing to serve the "baby boomers" as they age in assisted-care living facilities.

With the trend of foodservices being increasingly dominated by large national and multinational corporations, the demand for managers with a formal



*These jobs may be handled by other workers in small establishments.

FIGURE 1-1 Organization chart (restaurant).

education will continue to increase. At the same time, the industry will provide a vast array of opportunities for those people who possess a strong entrepreneurial spirit. For innovative, hard-working, service-oriented people who want to own their own business, foodservice offers almost unlimited potential.

Graduates of management programs typically begin their careers as management trainees, assistant managers, or supervisors. Starting salaries are competitive with those in other industries, but the potential for advancement significantly exceeds those in other industries for the capable person who is willing to work hard. Opportunities also exist for graduates in the areas of accounting, marketing and sales, finance, and human resource management. Of course, foodservice consulting as a career for the seasoned industry professional can be very rewarding.

In deciding if a career in foodservice is for them, individuals must be people- and service-oriented. Hours to be worked are often during hours when others are relaxing or at play. Relocating for the right job may take a foodservice manager across the country. Finally, to ensure a smooth-running operation, the foodservice manager often works more than a 40-hour week. Despite the hard work, the rewards can be great for those seeking opportunities for professional growth, good salaries, responsibility, and high levels of personal satisfaction.

ORGANIZATION

Getting people into the right place so they do the right job is called "setting up an organization." A *business organization* may be defined as an arrangement of people in jobs designed to accomplish the goals of the operation. Figures 1-1 to 1-3 offer examples of the many ways organization charts can be set up.

Organizational structures vary according to the needs of the enterprise, the jobs done, and the people in the organization. Organizations should be dynamic, not static. They must be changed as needed, and organizational charts should reflect such changes. Obviously, just setting up an organizational chart does not build an organization. Creating the living organization—by selecting and organizing people on the job—is one of the most important responsibilities of management.

Types of Organizations

Different organizations are needed to do different things for operations. Basically, there are three kinds of organizations: line, staff, and functional. Most organizations are combinations of these. For example, even though a line organization may be set up, parts of the operation may be strictly based on functional tasks or on staff work that is required to support the line operation.

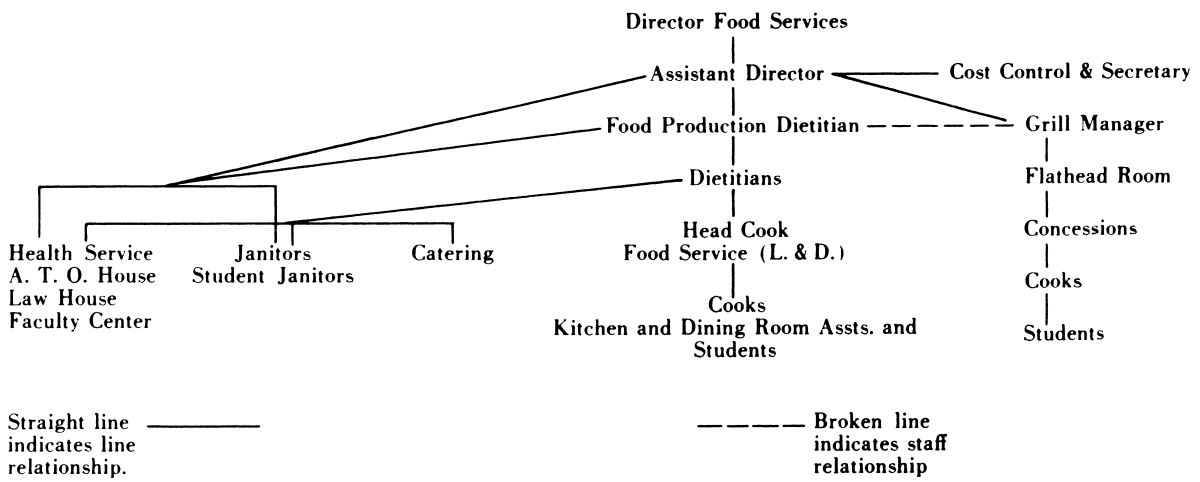


FIGURE 1-2 Organization chart (foodservice at a university).

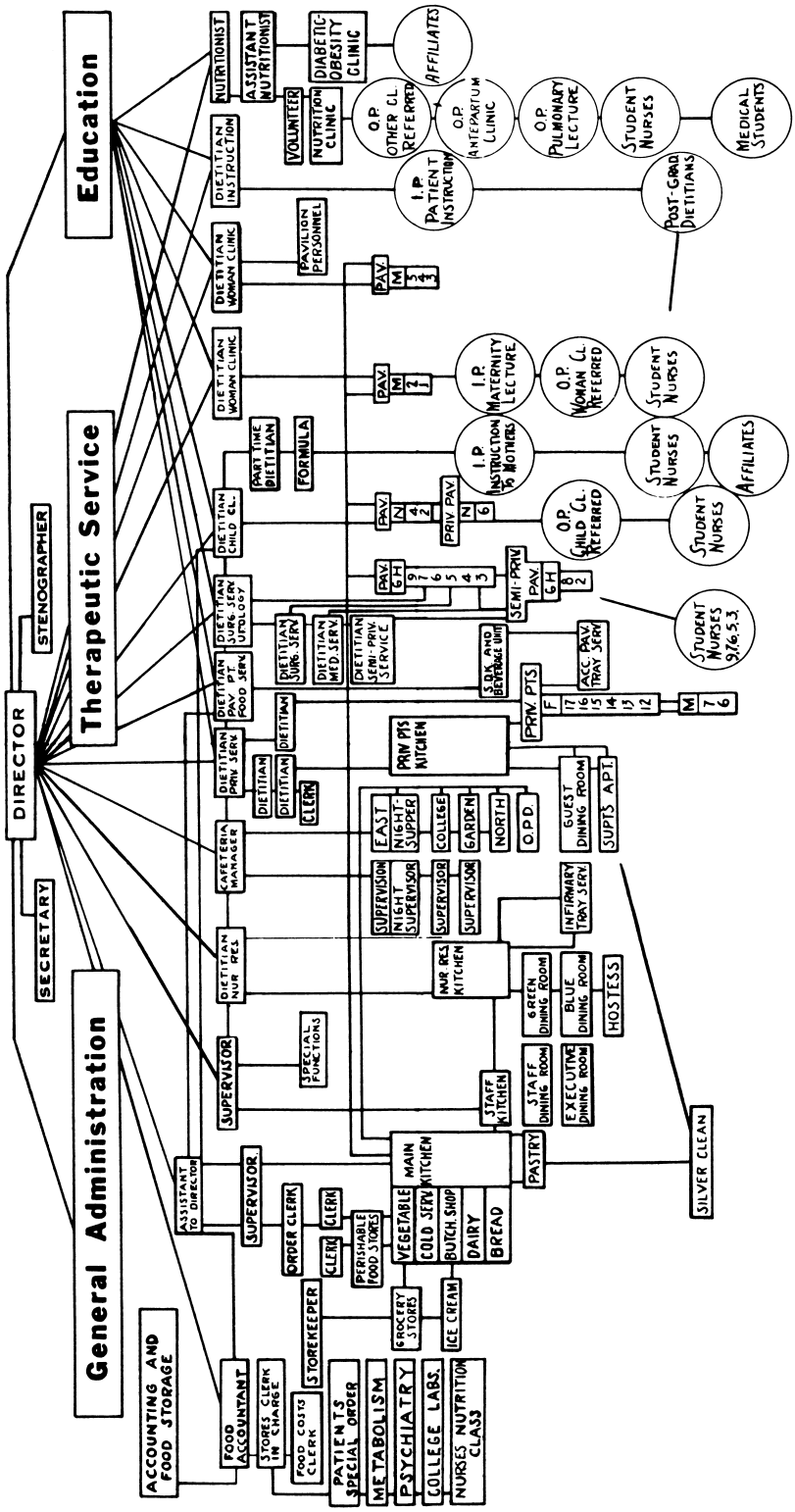


FIGURE 1-3 Organization chart (nutrition department of a hospital).

Line Organization

Military organizations usually are considered the best examples of line organizations. The lines of authority and responsibility flow from the head down through the various mid-management layers to the workers. In a line organization, a manager directs an assistant manager to do something; that person in turn directs a supervisor, who in turn directs a worker or workers. In reverse order, the report of work done or problems encountered flows back up through the same line of authority until it reaches the manager. No bypassing of layers is permitted either on the way down or on the way up. Sometimes this flow of authority and responsibility is called the *chain of command*.

In a line organization, the top position bears full responsibility for everything that happens in the organization. Such responsibility cannot be delegated to others. The power to make a decision or do a job can be vested in a subordinate, but the way this duty is discharged by the subordinate remains the responsibility of the chief officer. A good rule is "you can delegate power but you can't delegate responsibility."

Staff Organization

Staff organizations are usually support organizations established to render a service to the line organization. The staff does not take steps to see that things are done, nor does it have authority to implement any decisions it reaches or to act on any research it gathers. These are tasks for the line organization to perform. Every organization has staff positions—such as a secretary who works for the manager—that carry no line authority. It is improper for such a person to give orders to others in the line. Another staff organization is the accounting department, which renders a service to management by keeping records and furnishing essential financial and accounting data. A consulting dietitian serves in a staff position in relation to the superintendent of a small hospital or nursing home. Much trouble can occur when staff members step out of their staff roles and assume an unwarranted line role and give orders.

Functional Organization

If a large corporation were to set up its organizational structure on a functional basis, it might set up a division that was in charge of sales, promotion, and advertising; another that was in charge of planning; another that was in charge of procurement; and so on—seeing that all functions needed to bring the operation to its goals were established. The various functional divisions of a corporation coordinate their activities and (usually) report to a high-level line organization. It is possible for line organizations to exist under a functional one. Thus, individual operating foodservices that receive instructions from various functional divisions are set up as line organizations. Functional organizations are best suited to large corporate units.

Management's Responsibility

In any foodservice, daily events raise the need for action by management. Management must be prepared to see that the proper decisions are made so that the operation functions efficiently. Poorly devised action or inaction by management can ultimately cause an operation to fail. Proper procedures and records must be maintained. Employees must be selected with care and given adequate training. Personnel records must be established and maintained, complete with job descriptions. Supervisors must be properly instructed as to plans and actions and must be given adequate authority and backing to ensure that the work progresses satisfactorily. Planning, production, and service must flow smoothly so that patrons are satisfied and functions occur when they should. Making the operation run like clockwork requires considerable management skill. Sound decision making is the product of good judgment, practical knowledge, and astute thinking. The foodservice business is a dynamic, fast-changing one, and management must be equal to its demands.

COMPUTERS AND MANAGEMENT

The job of managing has been considerably assisted by the computer, which has changed many clerical tasks from manual to mechanical processes, giving management more accurate and more reliable information in a shorter time. This permits better decision making and faster action in response to changing conditions or unexpected developments. The overall result of the computer revolution has been better

planning, improved organizational control, and more up-to-date and more nearly complete information. Many tasks are simplified, and some are performed almost automatically. Consequently, management has more time to devote to planning and to direct supervision.

Although major computer application came relatively late to the foodservice industry, it is now being extended rapidly into many functions. Some of the more common tasks are discussed in the subsections that follow. In some cases, a more complete explanation is given in a later chapter. Although various computer applications are presented, few (if any) operations have yet put together computer programs that include all of the things a computer can do that are discussed here. The use of computers and the coverage they provide in foodservice operations will undoubtedly continue to be extended in the future.

Menu Planning

Early use of the computer in foodservice operations came in the areas of payroll, inventory, accounting, and point-of-sale transactions—largely because systems covering these areas could easily be adapted from other industry computer applications. The first original programs unique to the foodservice industry were programs set up in the 1950s and 1960s for computer planning of menus. These early programs had as their goal the production of menus planned to meet nutritional standards within certain cost constraints; they were largely developed for health-related foodservices.

Today, menu-planning programs are used to produce menus that meet specific patron and operational needs within certain cost limitations. The program can be set to offer a desirable range of individual menu items, such as the following four soups: one a cream soup; another clear; another heavy with vegetables and other items; and the fourth a purée. The menu programming can include instructions to avoid too much repetition of ingredients or flavors, such as having tomatoes appear a limited number of times in dishes on the menu.

Different forms of preparation can also be specified, to ensure that different cooking methods are found in the new items offered, such as a braised meat item, a roast, a broiled meat, and a deep-fried meat item. The computer can also be programmed to present a balance in meat, fish, and poultry offerings. Special combinations can be established, such as having Yorkshire pudding always appear automatically whenever roast ribs of beef are on the menu, having a horseradish sauce always appear with boiled tongue, or having deep-fried onion rings always appear with sautéed calf's liver. The frequency with which menu items reappear from week to week can also be set. If a retirement home wants chicken to appear on the menu for every Sunday dinner, the computer can be instructed to make this happen. The computer can give a printout of nutritional values for meals so that management can monitor them to ensure that the proper nutrients are being served.

Recipe size can be expanded or reduced automatically. Thus, a recipe can be exploded (increased) from 25 portions to 150, 250, or 1000 just by giving the computer the right instructions. Other constraints or needs can be input to the computer and it will comply with them in generating its menus. Quite flexible programs are possible, and often management can override the computer by adding, deleting, or otherwise changing what it does. The list of menu items that is entered into the computer to use in menu planning is called the *menu file*. Normally, each menu item is identified in the computer by its code number, but some computers can identify items by name as well.

Standardized Recipes

Many menu items in the menu file require special preparation before service, and so must be backed up by one or more recipes. The recipes listed in this manner are kept on what is called a *recipe file*. Thus, an item titled Baked Cod Mornay may have two recipes: one for baking the cod in a mornay sauce; and one for making the mornay sauce, which is a béchamel (cream) sauce to which cheese has been added. (Actually, the mornay sauce might be listed as a variation under the béchamel sauce recipe.) Thus the mornay sauce in the Baked Cod Mornay recipe actually becomes an ingredient in the baked cod recipe. These other recipes for sauces and other items supporting the main recipe are sometimes called *subrecipes*.

Recipes should be standardized to give a known quantity and a known quality at a known cost. Stan-

dardization is accomplished by pretesting recipes and precalculating costs.

Recipes should specify the code number or code name, the total amount of food produced and/or the number of portions, the portion size, the ingredients, the amount of each ingredient used, and the method of handling ingredients to produce the recipe. Cooking times, cooking temperatures, panning instructions, and other relevant information should also be given. Variations and substitutions can be listed at the bottom of the recipe. Total cost of the recipe and cost per portion are usually listed, and sometimes menu selling price is, too. In some cases it may be desirable to identify other items that are served with the item produced by that recipe or to include plating or serving instructions. A picture of how the item should appear is sometimes added, and some computers possess the necessary graphics capabilities for this.

Ingredient Files

An ingredient file consists of all ingredients listed for recipes. Ingredients are identified in the computer either by their code numbers or their code names. The ingredient code number should either be the same as that used in purchasing or be closely related to it. Thus, a 6/10 case of tomato catsup might have a purchasing and receiving number of P2148, but on the inventory and issue records it is identified as 12148 because the shipping unit (the case) is opened and broken down in the storeroom and issued in individual No. 10 cans. Pricing also differs. The price of P2148 (a case composed of six cans) is $24.60, and the price of 12148 (a single can) is $4.10. The ingredient price and code may require a third set of numbers, since the catsup used in recipes is often measured by volume. Thus, in the recipe, the ingredient code may be R2148 and the cost $0.035 per fluid ounce. If a recipe called for 1½ pints of catsup, the computer would convert 1½ pints into 24 fluid ounces and multiply 24 × $0.035, for a total ingredient cost of $0.84. Some computers cannot easily convert pints into fluid ounces; in such situations the recipe must give the percent of the can to be used. Similarly, in bar work, making conversions from liter bottles into ounce serving portions is difficult for some computers to do, in which case the bar recipes must express quantities of ingredients in milliliter portions.

Changes in recipes or ingredient costs must be input as they occur so that the recipes can be updated and so that the information compiled by the computer reflects what is actually the case. Often a change in the purchase price of one ingredient automatically changes prices in other files.

Recipes often specify the condition in which an ingredient is to be added to others during preparation of the item. For example, a recipe may call for the ingredient to be sifted, beaten, blanched, melted, diced, or strained.

Forecasting

To obtain an estimate of costs and/or profitability of a specific menu mix (group of menu items), management must develop a projection of the number of menu items that will be sold. This projection is called a *forecast*.

Forecasting is still a rather inexact science. The many variables involved in future demand are often difficult to detect and evaluate. Historical data—such as amount sold for the same meal on the same day last week, last month, or last year—can be used. A popularity index can be kept to record how many portions were sold each time the item appeared on the menu. Another technique is to evaluate the other items competing against a particular menu item and estimate how much they add or detract from its sales. An item that might sell well when grouped with some items might not do as well against others.

The effect of weather, events such as conventions, athletic contests, and other independent factors may have to be taken into account. Food-eating trends and other long-term factors deserve consideration, as well. In some foodservices, fairly good estimates of sales can be developed by noting reservations or bookings (such as with hotels or airlines), occupancy projections for dormitories over weekends, normal attendance for sporting events, or other information that indicates what quantity of patrons to expect. Hospitals find that their patient count usually goes down before and during a holiday season, but hospitals have an advantage in forecasting that many do not, in that many have patients mark menus a day ahead, indicating the foods they want served to them.

Forecasting, if done with some care, is a better guide to future demand than just plain guessing or

playing hunches, although these should not be ruled out entirely. With some practice and experience, prognosticators will find that their forecasts become increasingly precise and increasingly accurate.

Once the forecast is made and input into the computer, the computer can generate cost, profit, and other financial data. The computer will read the menu item, select its proper recipe, calculate from the recipe the ingredient cost and the portion food cost, and multiply the latter cost by the number of portions given in the sales forecast to establish a projected material cost for the menu item. Repeating this process for each item on the menu yields a total food cost figure for the period covered in the projection. If a selling price for each menu item is input into the computer, the forecast number of sales times the selling price gives the expected income from the item; again, when this is done for all menu items, the sum of the income figures will equal the total sales. These computations enable management to estimate how well the menu is going to do. If other cost projections are programmed, the computer can generate a net profit estimate and make other projections that are of great help to management.

Production Planning

An important part of managing a foodservice is production planning. There is a need to know when to produce foods, how much, when, where it will be needed, and other information. Unless such information is given, successful operation cannot be achieved. Such planning is the responsibility of top management, but it is often delegated to others.

General Considerations

The first step in planning production is to decide what is to be produced and when. This requires that a menu be planned and the recipe to be used be selected along with the date, meal, and sometimes, time in hours and minutes when it will be needed. The cost must also be determined to see if it fits into budget or menu price restraints. Sometime in this preliminary planning one must decide if adequate labor, equipment, and other facilities are available to produce what is needed. Also, is the amount of labor sufficient and sufficiently skilled to do the job? After all this, the decision of how much must come, and this requires a forecast. Next, a check must be made to see if the materials for production are on hand, and, if not, are ordered in the proper quality and quantity adequate to serve production needs. Proper receiving and storage must be given and the requisitions for supplies withdrawn from inventory must be made and delivered. Production must occur at the proper time. This is frequently an important consideration in planning. Menu items take various times to be ready for service. An aspic must be made at least 4 hours before it is needed, to be set sufficiently for service. A tenderloin steak may be done to order. Bread and many bakery items are prepared hours ahead. Often, production requirements are such that the equipment used for production is pressed to produce what is needed and those doing the production must make sufficient adjustment to accomplish what is desired. (Menu planners should watch to see that planning is done to give a balance to the equipment on hand and not overload. A menu requiring all oven preparation can often result in a production failure or, if not, in a lot of frustration.) Sometimes, items can be prepared in advance, such as soups and sauces, and placed into a bain marie or steam table to await production. Planning is such that all units of a production department must at the time of a meal come together in unison with production complete. The start of a meal is like that of the start of a symphony orchestra in which every player is ready when the maestro gives the first stroke of the baton. It must proceed as an orchestra working in unity together.

Although service is usually not a part of production planning, it must be considered. Successful production can succeed or fail with proper or improper service. Proper dishup is needed. Portions must be sized properly and displayed attractively. The size of the dish holding the order or orders must be right, not too large nor too small. The portion should not come over the rim. It is said, "The rim belongs to management, and the rest to the server." Attractive dishware must be used. Dishware color and decoration should fit the environment of the facility. Thus, Chinese food should be served in Chinese-type dishware. Tableware should fit into the decor of the operation. The proper ware should be used. If an upper-scale restaurant wants to feature Snails Bourguignon, they should be

served on an indented snail plate with the right holding tongs and extractor. Otherwise, the dish loses much interest and may result in guest dissatisfaction.

Food should be properly garnished. Although it is not possible for all garnishes to be edible, some might not be—paper frills used to cover the rib ends of lamb chops or of a pork crown roast, for instance. The garnish should not overwhelm the food but should serve as an attractive accompaniment to it. Contrasting complementary colors between the garnish and food should be sought. The garnish should be fresh appearing, not "tired." Certain garnishes are typical of certain foods, and a garnish common to one type of ethnic food must be used with care with other types of goods. Unusualness should be sought. Thus, a bread or cream horseradish sauce is often an accompaniment to roast beef, but an unusual and interesting difference is to present the roast beef with several horseradish curls on the plate, omitting the sauce.

Three Types of Production Planning

Three methods of planning production are commonly used by foodservices, although there are others. These are the laissez-faire method, the production sheet method, and the ingredient room method. The first is common in many restaurants and other commercial foodservices. The second is common in institutional feeding and also in many commercial operations, while the third is common in institutions and in large-scale production units such as central commissaries.*

The *laissez-faire method* basically leaves most of production planning to those who will be doing it. Management or sub-management may indicate roughly some of the basic guidelines, such as menu items to be produced and time, but leave the remainder to employees. In many operations this works well. However, in some, management may not even plan the menu. In a hotel, management usually leaves production planning to a food and beverage director or even to a chef. In a hospital the director seldom takes any action in production planning. This is left to dietitians or foodservice directors, or even at times those lower down in the organization.

Where those actually doing the production also have the responsibility for production planning delegated to them, the lead employees with the responsibility usually have been employed in the operation for some time and know the needs or have sufficient experience in other foodservices to know what is needed if they are a new employee. Often, the person doing the purchasing confers with those doing the production to ascertain items needed, quality, amounts, and so on. They know from experience, for example, the times when planning must be done so that foods are on hand when needed. Besides setting up for direct deliveries to supply the necessary items, some system of inventory withdrawal will be worked out either by management or the accounting division. Times for starting production are known from experience, and allocation of the work to be done is almost automatic. At times, those requiring items from another section may remind those in the section of this need, such as notifying the bakery section that so many vol-au-vent shells are needed for Tuesday's lunch. For this type of production planning to work, it is necessary that the entire operation work together as a team.

The *production sheet method* usually requires that management or submanagement plan production, and usually the latter procedure is used. This requires that previous to production the menu and other steps be planned and then a sheet is drawn up detailing the production need, the amount to be produced, the time needed, and if food is delivered to different service areas, where such food is to go, when, and how much. In a health facility, special diet needs may be noted, and production needs grouped under these categories. Often, in a hospital general menu is planned, and from this the special diets are taken with the required modifications being made. The use of a special diet kitchen to prepare some diets is used today for only very special diets, and many health care operations have dispensed with them entirely. Usually, the production sheet also informs purchasing how much of specific items will be needed, although in some

*The ingredient room method was developed by the U.S. Navy Supply Research and Development Facility in Bayonne, New Jersey, in the 1950s. It was adapted from a production method observed in the mass production of food at the Horn and Hardart central commissary. Katherine Flack, director of foodservices for New York State institutions, saw the plan in action and adapted it to her operations, calling the assembly area in the storerooms the ingredient room. From there it was adopted into many state foodservice, commercial, and other foodservice operations.

cases, this may be left to those producing the foods. Variations in this method are possible where experienced production employees are on the staff and certain decisions such as amounts to order, and so on, are left to them.

The *ingredient room method* requires that a file of standardized recipes be available, usually computerized. Mid-management staff usually have delegated to them the planning of the menu along with other preliminary planning decisions. This person often decides on the menu and the amounts to be produced. Once these decisions are made, the items needed along with amounts are fed into the computer and a printout of the quantities and quality of foods is obtained to send to the storeroom if needed from inventory, to purchasing if they must be ordered, to the vegetable preparation section, or to other basic supply units. These needs sent to these areas are divided by section or production area along with the time required. (All this must be hand-computed if computerization is not used.)

The storeroom usually has a separate area or room where it weighs out or otherwise measures the amounts required for each recipe. This must be done with extreme accuracy in *exact* quantities to produce the desired product in the quantity required. Recipe amounts are then segregated by section following which the storeroom delivers the items to the areas where needed. Preparers then process the items according to the production sheet definitions. One requirement that must be impressed on preparers and enforced is that all ingredients delivered *must* be remeasured. This is to prevent the preparer from blaming the storeroom for failing to deliver the correct amount in the event of a recipe failure.

The ingredient room method has many advantages. It saves worker time. If a worker has to leave the station in which the person works and travel to the storeroom to get items, a high-priced worker is often spending time just walking and waiting to get the items. If a lower-paid storeroom clerk can do the job and deliver the items, the worker then stays in the work area and produces. It also gives good organization to production. It is obvious that such a system requires proper time planning. Menus and preliminary planning must be prepared sufficiently in advance for storerooms, vegetable preparation, or purchasing to have the items delivered when needed. However, once the system is worked out and put into motion, production usually proceeds smoothly, without a hitch.

Quality Control

Critical Quality Control Points

A consistent level in the quality of menu items is achieved by establishing a standard for the product and then setting up checks at critical control points to see that the desired quality is achieved. These points should include correct ingredients and their measurement; preparation techniques; times and temperatures; correct tools, equipment, and utensils; condition of product during various stages of preparation; sanitation; portion size; and other factors required in special products. Each product will have its own standard, so there will be as many standards as there are menu items produced.

It is important that the checks and procedures established should be in as much detail as the standard. Thus, recipes should detail the critical quality control points. Again, pictures of the product showing the right procedure or the results of the wrong one are helpful. If rather inexperienced personnel are to prepare a product, it might be well to go over the critical points before starting preparation.

Formulation of Standards

A *standard* is something established as a rule or basis of comparison in measuring quality, quantity, value, or other factor of a product. In foods it covers factors such as color, volume, shape, crumb, crust, density or thickness, tenderness, juiciness, and so on—in fact, any attribute that affects the quality of a product. As noted, each product will have its own standards. Often, standards must differ according to the type of operation. Also, standards may even have to differ within a specific operation; thus, portion sizes may be varied between adults and small children. The number of standards required will depend on the number of items served in a facility. A drive-in selling only carbonated beverages, milk shakes and malts, hamburgers, and french fries will have only a few, whereas an upscale restaurant that changes menus for every meal, every day, and season to season will have many.

Often, assistance in setting up standards for foods can be obtained. Recipes often list many factors that one needs to cover in a standard, such as type, quality, and amount of ingredient; techniques to use; times and temperatures; utensils, equipment, and tools to use; condition of product during preparation, cooking, or baking; and as a finished product. Anyone with a good foundation in food preparation can thus take a recipe and formulate much of a standard.

Often, food preparation texts give standards for products, and these can be used as reminders of factors to put into one's own standard for the product. Trade associations, purveyors of food products, and others often have standards for their products. Advertisements of foods also give pictures of products and product descriptions that can be helpful.

The federal government has many quality standards for foods. Thus, one can say in a standard for roast beef: "The quality and type of product should be a Range C, No. 109, upper Choice grade roast, aged in Cryovac 21 days." One then knows that it will be a beef roast from 19 to 22 pounds in weight, cut and tied ready to be roasted, of a specific quality to be satisfactory in flavor, juiciness, and tenderness to give good eating—these three factors being decided largely by the grade and aging specified—and sized to give a generous portion. Also, the federal government has many grade standards for foods that can be helpful in establishing factors to cover. Thus, a U.S. Department of Agriculture (USDA) score sheet for judging the quality of canned asparagus lists color, defects, character, and condition of the canning liquor as factors to judge. Using this, one would then proceed to add other critical quality factors required. In some of these federal standards for foods, one will find helpful information such as the syrup density or density of a product such as tomato puree.

In many operations personnel have the knowledge and skills necessary to produce the type of product desired. Seeking their help can often result in a good standard. One can stand and observe such a person preparing an item, noting the actions taken, and from time to time asking a question to explain why something must be done in a certain way.

In judging products to decide on the standard to use, a panel of judges can be assembled and products scored. This is often a technique used to decide on the quality of liquors to serve as well as products. The panel should know the standard desired and what will be suitable to satisfy the patrons served.

This brings us to the final determinant in what the standard should be—the patron. A standard that satisfies the trade is essential, and no matter what management or anyone else in the operation believes, standards that do not satisfy will not keep a facility in business long. Thus, getting patrons to indicate what they like and do not like or might like or might not like can be extremely helpful and necessary in establishing a standard, and one must start from this premise. Otherwise, formulation of the standard may be a futile exercise.

Menu Analysis

Menus can be analyzed in various ways, ranging from highly qualitative methods to complex mathematical ones. Subjective menu evaluation, menu counts (popularity indexes), Hurst's menu scoring, menu factor analysis, the matrix analyses of Miller, Smith–Kasavana, Pavesic, and Kotschevar, goal analysis, and break-even analysis are ten common approaches. Some involve radically different approaches and give different information; and even those that use similar methods vary in the information they give.

A detailed discussion of menu analysis is beyond the scope of this book at this point. However, such a discussion is included in Appendix A for those wishing to delve deeper into this area. Some facets of menu analysis are also discussed in Chapter 8 under "Menu Engineering" and "Break-Even Analysis and Its Calculation."

Customer Ordering

One of the more recent developments in computer use within quantity food production has been seen in customer ordering. While the fast-food and quick-service segments have led the way, other dining establishments are not far behind in their implementation of this latest hardware and software.

Touch-sensitive screens are now used in operations where service counter personnel once took the order. Customers are moved through a series of graphics in

which they literally touch the screen to select the food item desired. In the case of play areas where a mother wishes to watch her children without having to leave them to order and pick up food, touch-sensitive screens offer a method by which the mother identifies her table number and the food is brought to her.

Merchandising is enhanced through a voice that encourages the customer to order the largest drink since it is the best value. Since a tally is kept on the screen as to how much the customer has spent in the ordering process, customers are more likely to spend more in that they know how much money they have and how much they have spent in ordering. Thus, an extra apple pie or order of french fries are or are not purchased.

Devices are now also available that allow a server at the table to take orders, punch them into the device, and have the orders filled by the kitchen. When the order is ready for pickup, the device beeps; thus, the server is spared taking trips to the kitchen to place orders and to see if they are ready for pickup.

Delivery and Payment

Just as the delivery of food to the mother watching her children in a restaurant's play area has been made possible through computers, so is the payment for food ordered at a touch-sensitive screen. By having stored-value cards similar to those used to prepay a phone call through a calling card, the customer is able to pay for his or her meal electronically via computer.

The system then allows the customer to order food without assistance, pay for it without interaction with another person, and pick up the food or have it delivered, as is the case in the play area. Ordering at drive-up windows is being revolutionized, as the "loud speaker order taker," who never seems to get the order right, is being replaced by a touch-sensitive screen that merchandises products through graphics, keeps a tally of the total dollar spent, and ensures that the correct items are ordered. Another drive-up window system has a "scoreboard" installed which lights up each item the customer has ordered. This innovation is linked to the point-of-sale personal computer to help ensure against communication glitches between the customer and order taker.

Computers will continue to affect the heart of the house delivery and payment systems as well. Purchasing agents will order on-line through the Internet. The future of the computer on food production, planning, and management will greatly affect the efficiency of operations, as has been seen in recent years.

Complementary Computer Applications

The quantity of items to purchase or to issue is determinable when the quantities of ingredients needed to produce the menu are calculated by the computer. These quantities can be further distinguished as quantities needed for immediate use or as quantities to have on inventory. Timely compilation of such information can help operations avoid stock shortfalls and other frustrating food production problems.

When an ordered item is received, the computer can be informed of the date, the item's code number, purveyor, amount, cost, a description of the goods, whether the item went directly to production (directs) or to stores (inventory), and so on. If programmed to do so, the computer adds the new amount to inventory and calculates a new inventory amount. Directs are charged out as, in effect, issues on the receiving date. By having the computer add directs to storeroom issues, management can obtain a food cost for the day; put into ratio with sales, this gives the percentage food cost. Thus, one might see the following:

Storeroom issues	$ 865.74
Directs	46.83
Total food cost	$ 912.57
Sales	$2,944.23
Percentage food cost	31%

Deducting issue values from inventory and adding receipts enables the computer to generate an updated inventory called a *perpetual inventory*. All these programmed tasks are rapidly and accurately performed by the computer, eliminating much slow and tedious manual manipulation and calculation.

Much useful information for making management decisions can be obtained at the cash register, often called point of sale (POS). With a POS system,

management at any time can ascertain what checks are out, how long checks have been out, what orders remain unfilled, how many items of a particular kind have been sold, what their dollar value is, what volume of sales has been generated by various servers (this is called a *productivity report*), what amounts credit card charges, room charges, and tips come to, and many other things. At the end of a recording period, total sales, total item or food group sales, and other desirable data are at hand. It is now possible for the computer to run an analysis of how well planning projections made prior to production anticipated actual results. This alone is of tremendous value to management as a tool for refining the processes of planning and decision making. In the days when manual compilation of such data was necessary, the results often were unavailable until too long after an actual occurrence for management to take corrective action.

In addition, after all results are in, the computer can transfer essential data to the general ledger file so that important financial reports such as cash flow, balance sheet, and profit-and-loss report can be compiled. Thus, almost from cradle to grave, the computer can be effective in food production management. It has changed clerical, decision-making, and other time-consuming tasks into almost automatic operations and has extended management's control and base of information so that better management is achieved.

TOTAL QUALITY MANAGEMENT

Although the term *total quality management* has been used extensively, there has been some disagreement as to the nomenclature in use. Some refer to the subject matter as just quality management; others refer to it as continuous quality improvement. There is one aspect that has generated very little disagreement and that is the fact that management should focus on eliminating "quality" problems before they occur rather than attempting to address them after they have happened. This is especially true in the area of customer service but is also applicable in the area of food production. Both are important and must be given careful consideration.

Customer Service

The key to quality in service is to have a systematic, planned process for returning dissatisfied customers to a state of satisfaction after service has failed to live up to expectations. Since customer turnover can have a tremendous financial impact on an operation's bottom line, customer satisfaction is a must for total quality management.

For example, the loss of a loyal customer is one thing, but the alienation of potential customers due to negative word-of-mouth referrals can be even worse. Dissatisfied customers are likely to complain to nine or ten others about service imperfections, while satisfied customers typically express contentment to only four or five others. Furthermore, research indicates that it costs five times more to replace a customer than to retain one. Hospitals sometimes find that doctors and patients decide on which hospital to patronize because of high satisfaction with the food at that hospital.

The management issue, then, is to empower service providers to engage in techniques to ensure customer satisfaction when, in fact, the customer is not satisfied. The fiscal and informational resources must be at hand for the server to see that the customer departs the operation satisfied. Recovery actions often involve "doing it right the second time" but, more specifically, correcting what was done wrong immediately, so that when there is a second time, the customer notices that matters have been corrected.

Recovery actions may take the form of compensation, apology, reparation, and empathy. Each must be understood by servers and applied correctly depending on the situation. Total quality management in the area of customer service is ongoing and must be given top priority.

Food Production

The same holds true in food production. When the product produced or served is not up to the standard, the professional must recognize that fact and take corrective action. Checkpoints come from the cook, expediter (one who checks plated food prior to it leaving the kitchen), server, and customer. If at any point, one of those people says that the item produced is not

what it should be, quality is affected and change must take place.

Satisfaction can be improved by replacing the item immediately or offering the customer a different choice. When it comes to food production, the key is to correct the system such that another poor item is not served in the future. This may range from retraining the cook to regarnishing the plate. If it is the server's fault, such as serving cold food due to delay in pickup or taking down and serving the wrong order, the standards in the service area must be rechecked.

Total quality management must be constant in any operation in order to raise the standard. Both customer service and food production are affected. Management must be aware of what is being done incorrectly and make every effort to improve in those areas.

SUMMARY

The foodservice industry is the fifth largest industry in the United States. It employs more than 10 million people and accounts for 4 percent of our gross national product. The industry is highly labor intensive and has many problems, because of its wide dispersal of operating units, its low productivity, and its need to produce on demand. It is a healthy industry, however, enjoying one of the best and most stable growths of any industry in the nation. It performs important services in our economic, social, and recreational programs. The industry is characterized by family-owned or single-ownership operations, but this is changing rapidly as chains and multiple-type corporations take over.

Training the large number of employees needed to operate the foodservice industry was at one time quite haphazard and unprogrammed. Today, various formal training programs are springing up, bringing a better-trained employee into the industry. Unions as well as professional associations are beginning to develop training programs. Many people are also taking foodservice courses in high schools, community or junior colleges, or four-year universities. A number of graduate programs have been started, and correspondence courses are used heavily. Foodservices that manage workforce diversity efficiently, benefit from more effective recruiting, improved management quality, increased market share and productivity, and reduced labor costs through lower employee turnover.

One of the best definitions of management is: *Management is the achievement of goals through people*. Three levels of action can be identified in any foodservice organization: management; mid-management or supervision; and workers. It is the job of the first to plan action, of the second to start action, and of the third to act. Proper activity by personnel in each area of action promotes efficiency and smoothness in the foodservice operation.

Management's responsibility is to provide the planning, organizing, staffing, controlling, and leading necessary to bring the enterprise to its goals. Mid-management's responsibility is usually to receive direction from management and see that the required steps are taken to move the enterprise to its goals. Workers' responsibilities are job-related; because they are specific, these duties are best outlined in job classifications.

Foodservices can be organized in three ways: line, staff, and functional. The last two are frequently combined with the first. A line organization is one in which authority and responsibility flow down from the top through various positions. When reversed, the flow proceeds by the same step-by-step process to the top. Staff organizations usually exist to supply information to the line. Functional organizations serve specific functions within the line organization.

Every person holding a position in an organization should have the proper authority and responsibility to discharge the position's requirements. A failure to establish both power and accountability can cause problems in the organization. Delegation is a procedure by which the duty to perform a job is assigned to a subordinate to carry out. In such cases, the proper authority to do the job must be given; but it is not possible for the person delegating the job to escape responsibility for whether and how well the job is done.

The computer has significantly changed the planning, management, and implementation of quantity food production. Its effectiveness in almost all phases of foodservice operations has helped management refine traditional methods of planning, control, and decision making.

If properly programmed, the computer can plan a menu within specified constraints, print out standardized recipes for any number of portions desired, set up a file of ingredients so that recipes can be priced out, and calculate portion costs. If a forecast of number of portions to be sold is made, the computer can generate a food cost figure; if given the selling price, it can compute the total dollar sales an item will bring in. Other arrangements allow the computer to estimate what total sales will be.

The computer is also useful in performing various menu analyses (which are of special benefit to management for decision making and planning), in calculating quantities to purchase, in totaling inventory, in keeping track of issues and directs, in setting up receiving reports, in maintaining the payroll, and in making many point-of-sale calculations.

Total quality management must be a constant endeavor in any operation in order to raise the standard. Both customer service and food production are affected. Management must be aware of what is being done incorrectly and make every effort to improve in those areas.

CHAPTER REVIEW QUESTIONS

1. R. A. Kroc developed McDonald's from a tiny group of hamburger drive-ins into one of the world's largest foodservice corporations. He was an engineer and had no foodservice experience. One of the reasons for his success was that he approached management from an engineer's standpoint. Just what is management, how does it work, and why would a person with a strong engineering or scientific background have attributes that might translate into excellent management abilities?
2. A large foodservice operation finds that its menu is in need of improvement: it lacks good profitability, and management feels that it is deficient in patron appeal. You are a shift manager and know that some of the items on the menu do not make a good gross profit because their food cost is too high and some of them are unappealing. You feel you can help the manager by explaining what you feel is wrong with the menu, but you want some proof. What analytical methods would you use to analyze the menu and to present evidence of your results to the manager?
3. How big is the foodservice industry in dollar sales and as an employer?
4. What are some of the problems in the industry?
5. What educational facilities are available to those who would like to work in the industry? Identify the opportunities for all levels of work and management.
6. What is *management?*
7. What are the functions of management?
8. Give an example in which a staff organization and a functional organization are both part of a line operation. What would these organizations do for the line operation?
9. What jobs can a computer do for management? How does it perform these jobs?

CASE STUDIES

1. Merril Len Manson is thinking about getting out of the rock entertainment business and into foodservice. He is interested in trying to decide which type of restaurant to open and has decided to do research on dining trends. Rocker Manson has contacted you as a bright student of management and has asked you to use the Web site *www.restaurant.org* to assist him. What are the

trends that might affect his new operation? What kind of operation should he open? Where should he locate that operation? Support your decision with information from the Web site.

2. In looking around for new computer products to use in her many restaurants, Ms. Arrow Smith has found the Web site *www.culinarysoftware.com* and is very excited. She has called you to summarize the products available from the site and make recommendations to her as to which products you feel are best and why.
3. A career in hospitality management can be exciting for anyone. Using the information at *www.ei-ahma.org*, *www.restaurant.org*, and in this chapter, overview the career opportunities in the hospitality industry. What career interests you most and why? Support your answer with information found on-line.

VOCABULARY

Foodservice industry
Processed foods
Cultural diversity
Functions of management
Maître d'hôtel
Chefs des partis
Chef de saucier
Garde-manger
Organization
Line organization
Staff organization
Functional organization
Control points
Decision making
Menu planning
Standardized recipe
Recipe file
Ingredient file
Forecast
Menu analysis
Directs
Issues
Perpetual inventory
Total quality management
Ingredient room

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