

ISSUES FACING FOOD SERVICE

Courtesy of Micros Systems, Inc.



THE PURPOSE OF THIS CHAPTER

This chapter continues our discussion of the factors shaping the food service business. We consider food service's reaction to a number of pressing issues. Once again, we begin with the consumer and consumer concerns, such as nutrition, and with the closely related consumerist movement. We then turn to the impact on food service of rising consumer concern—as well as growing government action—related to the environment. Akin to the environment in many ways is the topic of energy scarcity and energy management. Finally, we look at the challenges posed by technology and the technological responses to cost and quality problems with which food service now has to contend.

THIS CHAPTER SHOULD HELP YOU

1. List three common consumer concerns about health and nutrition that have an impact on planning food service operations.
2. Understand the importance of sustainable practices in food service and the challenges of operating in an environmentally responsible manner.
3. Describe the food service industry's evolving use of technology in the following areas: guest ordering and payment; food production and refrigeration; marketing; managing banquet and catering departments; and management control and communication.

CONSUMER CONCERNS

When reading, watching, or listening to the news these days, consumers will find no shortage of things to concern themselves with: war, H1N1 flu (swine flu), severe acute respiratory syndrome (SARS), mad cow disease, West Nile virus, bird flu, terrorist attacks—the list goes on and on. Some of these affect where, when, and how customers

eat when they dine in restaurants. For instance, when the H1N1 flu pandemic began in 2009, many businesses, schools, and common meeting places such as restaurants and theaters closed for fear of spreading the disease. Similarly, when fears about SARS were at their highest in Canada, Singapore, Hong Kong, and Taiwan, consumers were hesitant to eat in restaurants where they feared carriers of the disease might be working. (It affected their travel too, which will be discussed in a later chapter.) One Canadian restaurant chain took out a series of full-page ads in the national newspaper trying to assuage customer fears as part of its public relations campaign.

Other threats and concerns (real or perceived) have much longer life cycles. For instance, during the 1980s, health, diet, nutrition, and exercise were prime topics of concern for food service customers. These concerns leveled off a bit in the 1990s but now seem to be back in full force in the first and second decade of the 2000s. (One very good barometer of people's regard for health issues is by the rate of the addition of healthier items to restaurant menus.) This is particularly evident in restaurants where many customers want complete nutritional information included with the menu. In fact, many states have reacted by passing menu labeling laws; the federal government is now considering a uniform national nutrition standard for restaurant menus.¹

Whenever the topics of diet, health, exercise, and nutrition are discussed, the American public sends mixed signals. Fortunately, numerous studies are conducted to monitor the public's behavior. The American Dietetic Association (ADA) conducts a study periodically to determine nutritional trends in the United States and to measure the public's awareness of certain issues. One of its recent studies looked at behaviors in relation to diet, nutrition, and fitness but also focused on awareness levels surrounding obesity, genetically modified foods, irradiation of foods, and dietary supplements—all of which have become relatively recent concerns. Of these four issues, respondents expressed the greatest concern over obesity. Obesity issues have been in the news lately, and programs are being implemented to try to prevent obesity, particularly at young ages. The same study by the ADA indicated that more people are making adjustments in their diets and that fewer people (32 percent in 2002 versus 19 percent in 2008) were categorized in the "Don't Bother Me" category—those who show little concern for diet, nutrition, and fitness. At the same time, the percentage of people categorized as "Already Doing It" (those who have taken action in the way of diet, nutrition, and exercise) increased significantly in almost each consecutive study beginning in 1991 until 2008, the most recent period studied. The survey also reported that the majority of respondents indicated that diet and nutrition (67 percent) and physical exercise (61 percent) are very important to them.² The results of other surveys, however, indicate that taste is still important (sometimes to the detriment of health and well-being) to Americans and often influences their behaviors, at least as much as these other factors. A "fat replacement technology" has been developed for some foods, substituting ingredients

that simulate the taste of fat in products such as ice cream, potato chips, and meat products. Initial consumer reaction to this product suggested the market is much more interested in “real” taste. McDonald’s low-fat hamburger, McLean Deluxe, was kept alive only by corporate policy. Sales were so poor that it was dubbed “McFlop”; in 1993, it accounted for only 2 percent of sales. McDonald’s kept the McLean around until 1996, but similar products were dropped by competitors a year or two after their introduction because of a lack of demand. Currently, the focus is on trans fats in restaurant foods. For example, New York City was the nation’s first city to ban trans fats from all foods as of July 2008. Certain restaurant companies are taking it upon themselves to eliminate or reduce trans fats in their foods. The public is concerned because trans fats reduce good cholesterol and increase bad cholesterol. Regardless of collective views, however, nutrition continues to be an important issue for consumers and operators alike. This topic is explored more fully in the following section.

HEALTH AND WELLNESS

Americans are often given to extremes, and their attitudes and behaviors toward health and wellness is no exception. Exercise and nutrition have once again made it to the forefront of North Americans’ consciousness. According to the International Health, Racquet and Sportsclub Association, there are over 30,000 health clubs in the United States, with over 45 million members as of 2009.³ Clearly, Americans take their exercise seriously. Research in this area indicates that a majority of Americans believe that people who exercise regularly live longer and are happier than nonexercisers.

Oddly, whatever the state of Americans’ minds may be, Americans are more overweight (and obese) than ever before. The World Health Organization (WHO) has issued a fact sheet on obesity and excess weight, indicating that it is now a worldwide problem—not one that is limited to affluent countries such as the United States. In North America, obesity is in the news, and debates center around to what extent diet (and, specifically, prepared foods) affect obesity and what role government should play. Unfortunately, restaurants and, specifically, quick-service restaurant (QSR), have been demonized. Somewhere between both sides of the argument, good sense and research support the fact that nutrition and exercise play a large role in one’s health. Health advocates continue to stress the need for a balanced diet and regular exercise. Among its recommendations for fighting obesity, the WHO recommends that in order to attain optimal health, individuals should:

- Achieve energy balance and a healthy weight.
- Limit energy intake from total fats and shift fat consumption away from saturated fats to unsaturated fats.

- Increase consumption of fruit and vegetables as well as legumes, whole grains, and nuts.
- Limit the intake of sugars.
- Increase physical activity—at least 30 minutes of regular, moderate-intensity activity on most days. More activity may be required for weight control.⁴

Many of the recommendations focus on **healthy eating**, and Americans' eating habits are slowly changing. Beef consumption is falling, and the number of Americans who report never eating red meat stands at around 6 percent of the population. Further, the consumption of chicken—a lower-fat alternative—has increased steadily since the early 1990s to its current level of 85 pounds per capita per year.⁵ The number of vegetarians continues to increase as well.

So, the evidence seems to suggest that Americans are more concerned with health and nutrition, are eating healthier (or at least eating lower-fat foods) but are still struggling with obesity. This would appear to be yet another American paradox. *American Demographics* magazine explains this by suggesting that as the collective age of Americans increases, people's tendency is to become more conscious of health and nutrition issues but to gain weight as well. Again, the baby boomers are at the center of this conundrum, and experts expect those patterns will continue for at least the next ten years.

Getting back to obesity (research indicates that the number of **overweight** children has doubled since 1980⁶) some part of the overweight problem relates to the way in which our society is developing. The way we live is physically less demanding than it was a generation or two ago. From automobiles, to TV remotes, to computers and electronic toys, we expend fewer calories in our everyday living. There are fewer physically demanding jobs and more jobs that involve sitting in front of a computer screen or at a desk. In addition, more and more of our foods are refined and require less energy to digest. (Americans eat, on average, three times as much sugar as they should each day.) The biggest villain, though, is fat. Americans eat more french fries than they do fresh potatoes. Moreover, as we noted at the beginning of this section, there hasn't been enough of an increase in recreational exercise to make up for a more sedentary lifestyle. Under the circumstances, the increase in obesity, however distressing, is not particularly surprising.

DIETARY SCHIZOPHRENIA. Customers talk a good game but do not always follow their commitments in practice. When a salt-free soup was brought out, for instance, it failed initially for lack of consumer acceptance. We live in a time when, whatever people say, consumer behavior actually supports the rapid growth of stores specializing in high-butterfat ice cream and when doughnut stores have become a major quick-service category. Perhaps we can best sum up the symptoms of **dietary schizophrenia** by saying that consumers are concerned about their health—and about pleasing themselves. Sometimes they act on their concerns—and sometimes on their need for

pleasure. Sometimes they watch what they eat at home but are less careful when dining out. **Nutritious food and consumer demand** do not always go hand in hand. Food service operations must be ready to serve either interest, and increasingly they are.

CONSUMERISM. Whether we like it or not, we live in a consumer society. In the words of Juliet Schor a professor specializing in consumer behavior, “In contemporary American culture, consuming is as authentic as it gets.”⁷ In such a society, many concerns exist. Most of the concerns of individual consumers, such as health, fitness, and nutrition (along with a host of others), are shared regardless of the demographic differences. Some of these concerns have been selected by organized interest groups as important to consumer education, to raise the consumers’ consciousness. This is **consumerism**, which is a movement seeking to protect and inform consumers by requiring such practices as honest packaging and advertising, product guarantees, and improved safety standards. Groups such as the Consumer Federation of America (CFA) exist for just this purpose. The CFA and other groups attempt to influence social change in an effort to protect the rights of consumers. A mainstay of popular culture, Ralph Nader is one of the greatest advocates for consumers and has been over the last 40 years. Aside from being a candidate in four presidential races, he is also a consumer advocate, lawyer, founder of Public Citizen (a national, nonprofit consumer advocacy organization), and author of several books that promote accountability from government and corporations. Consumerism is a positive force in that it sends important messages from buyers, or potential buyers, to the sellers of products and services. If approached proactively, it also presents tremendous marketing opportunities to the companies involved. It can influence businesses to be more sensitive to important issues. Developing a positive response to consumerist sentiment is probably more effective than resentment and resistance.

INDUSTRY RESPONSE. Restaurants are not in the preaching business, and so consumers do tend to get what they want. Just as salad bars and low-fat foods were developed in response to heightened dietary concerns in the 1980s (and again today as the cycle repeats itself), operators are responding to customers, particularly the younger ones, who want more to eat. *Supersizing* has become an accepted word in the English language. Wendy’s Big Bacon Classic weighs in at 590 calories. Carl’s Jr. has introduced its “Six Dollar Burger,” which provides 960 calories and 62 grams of fat. Burger King sells about 4.4 million Whoppers daily—each with 678 calories and 39 grams of fat. Hardee’s tops the charts with its Monster Thickburger, which that includes two third-pound slabs of Angus beef, three slices of cheese, and bacon—at 1,420 calories. And KFC is promoting its new Double Down sandwich features two fried chicken filets that take the place of traditional sandwich buns and surround two pieces of bacon, two melted slices of Monterey Jack and pepper jack cheese, and Colonel’s Sauce.



Many fast food establishments are located inside shopping centers giving customers convenient, if not always healthy, dining choices. (Courtesy of Las Vegas News Bureau.)

Efforts such as the McLean Deluxe, which relied on substituting a seaweed derivative for fat, have been replaced by a strategy of offering products such as chicken and potatoes that are, in themselves, low in fat. Besides their burgers, Harvey's also offers a lower-fat product that fits well with its skinless chicken product. Wendy's, too, offers a skinless chicken sandwich and baked potatoes—with or without fat-rich toppings—as an alternative to french fries. So, whether consumers always choose them or not, alternative menu items are available, and more and more options are becoming available all the time.

In view of its increasing size and visibility, the hospitality industry attracts plenty of attention from consumer groups. A sampling of hospitality issues typically raised by consumerists may lead to a better understanding of how consumerism can affect the food service field. Our discussion includes complaints about junk food, nutritional labeling, problems related to sanitation, and alcohol abuse.

FAST FOOD AND A HECTIC PACE

One of the principal indictments by consumerists against food service (and especially against quick service and vending) is that it purveys nutritionless “junk food.” Although quick service does pose some nutritional challenges, the junk-food charge is just not true. The charge may say more about American food habits than about the nutritional adequacy of the food itself.

A typical meal at McDonald's—a hamburger, french fries, and Coke—provides nearly one-third of the recommended dietary allowance (RDA) for most nutrients, or the equivalent of what a standard school lunch provides, with, however, a deficiency in vitamins A and C. The deficiency in these two vitamins can be remedied somewhat if the customer switches from a hamburger to a Big Mac, which contains the necessary lettuce and tomato slices. If the customer chooses to have a salad, the dietary deficiency is no longer a problem.

Two problems here go beyond the junk-food issue. These critics believe they know what is good for people (which, in a medical sense, they may), and they resent the fact that people choose to disregard their expert advice. The main criticism, however, is really of Americans' poor eating habits, notably “the quick pace inherent in our society.” In defense of the purveyors of fast food, it is the consumers who choose to eat what they eat, how much, and how often. This is essentially what the judge ruled in throwing out the obesity case that was brought against McDonald's in 2002. Other obesity lawsuits continue to arise, however.

A similar issue relates to vending. Some schools have eliminated candy and sodas from vending machines, or eliminated the machines altogether. Does this stop school-age children from consuming sugar? More often than not, students find alternative sources, such as the convenience store across the street from the school. The result is lost revenue to the school from vending—but not necessarily a decline in sugar consumption.

Whatever else is true, the duty of the American food service business in a market economy is to serve consumers, not to reform them. It is difficult, however, for the hospitality industry to deal with this kind of criticism, in which the industry becomes a scapegoat for the annoyance that some feel. In the end, the food service product(s) that are within the reach of most pocketbooks uses food service systems that are not (and cannot be) labor-intensive. They use preparation methods that are quick and unskilled, hence inexpensive. Quick-service food is quick because, all in all, that is what many consumers want.

The second problem raised is that of the effect of advertising on consumer behavior. This issue reflects an old and complex debate in the general field of marketing. It is clear that restaurants are interested in offering only what the guests want, not in forcing something on them. For example, notice that the decor and atmosphere in specialty restaurants have been growing warmer and friendlier to meet earlier criticisms of coldness and austerity. In addition, salad bars and packaged salads were added because that is what consumers wanted. That is, the weight of consumer opinion is usually felt in the marketplace. Change in business institutions comes, of course, more slowly than consumers would like; particularly in competitive industries such as food service, change comes only when it is clear that the consumer wants it. To some degree, the consumerists'

demands for quick change reflect an antibusiness bias, which some consumerists seem to have. Many seem to prefer a command economy (with their preferences ruling) to a market economy where, in the long run, consumers' preferences rule.

The junk-food criticism will not just go away, however. Field studies suggest that many restaurant guests do not follow the Big Mac–fries–Coke meal profile referred to earlier. For instance, to save money or suit their tastes, many customers replace the milk shake with a soft drink, and the result is a meal with less than one-third the recommended dietary allowance of essential nutrients. In addition, although they appeal to a minority of customers, salads are clearly not the number-one seller in the quick-service sector. Moreover, a number of chains are under fire from consumerists for continuing to use beef fat (which is rich in saturated fat) to fry some products, especially french fries. We should note, however, that, in response to consumers' concerns, most chains have shifted to vegetable shortening for most frying.

NUTRITIONAL LABELING

The **Nutrition Labeling and Education Act (NLEA)** was passed in 1990, but the restaurant industry was largely exempted from it by the **Food and Drug Administration (FDA)**. In 1996, however, the Center for Science in the Public Interest (CSPI), along with Public Citizen, was successful in a suit in federal court against the FDA. Consequently, as of May 1997, restaurants became covered by the NLEA. The health reform legislation that passed in mid-2010 expanded this coverage by creating a national, uniform standard for chain restaurants with 20 or more locations that would provide customers with a wide range of nutrition information—mirroring the information available on packaged foods—at the point of purchase. Caloric information would be highlighted on menus, menu boards, and drive-through boards. For all restaurants, NLEA applies to menu listings that make nutrient or health claims.

Nutrient claims make a statement about a specific nutrient of a menu item or meal. A nutrient claim typically includes such terms as “reduced,” “free” or “low,” “low in fat,” or “cholesterol free.”

Table 8.1 shows a listing of words that might be part of a nutrient claim. Significantly, use of symbols such as a heart or an apple to signify healthful menu items is also considered to be a health claim and is covered by the regulation. Additional information regarding the dos and don'ts of nutrition labeling can be found at the FDA Web site (www.fda.gov).

A **health claim** ties the food or meal with health status or disease prevention. A health claim usually relates to and mentions a specific disease. The government has approved 11 health claims (described in Industry Practice Note 8.1) that the FDA has determined to be scientifically documented.

Defining Health Claims

The following food and health/disease connections are the only ones for which the government allows health claims to be made. In order to make health claims on menus, restaurateurs must follow specific guidelines as to wording.

- Fiber-containing fruits, vegetables, and grains in relation to cancer-prevention claims
- Fruits and vegetables in relation to cancer-prevention claims
- Fiber-containing fruits, vegetables, and grains in relation to heart disease-prevention claims
- Fat in relation to cancer
- Saturated fat and cholesterol in relation to heart disease
- Sodium in relation to high blood pressure (hypertension)
- Calcium in relation to osteoporosis
- Folate and neural-tube defects
- Dietary sugar alcohol and dental caries
- Soluble fiber from certain foods
- Coronary heart disease and soy protein

Source: Center for Science in the Public Interest, "Food Labeling Chaos: The Case for Reform," 2009.

TABLE 8.1

Language of Nutrient Claims

You need to have documentation if your menu uses any of these words or symbols representing these words:

Free

Low

Healthy

Reduced

Light/lite

Provides/contains/good source of . . .

High/excellent source of/rich in . . .

Lean/extra-lean

Notice that one way a restaurant can avoid this regulation is simply to avoid nutrient or health claims on its menu.

Moreover, if a claim is made (according to federal guidelines), the restaurant need not publish the information on the menu. It must, however, be able to provide reference material for staff members. Finally, the only thing that must be documented is the claim on the menu. Thus, if a claim is made as to the number of calories, that claim must be documented, but there is no need to document other aspects of the menu item, such as the number of grams of fat or the amount of salt. (Note: As noted earlier, individual states may have more stringent labeling bills that restaurants must abide.)

The restaurant is required to have a “reasonable basis” for its belief that the claim made is true. Restaurants can use computer databases, U.S. Department of Agriculture (USDA) handbooks, cookbooks, or other “reasonable sources” to determine nutrient levels.

Although the CSPI views the restaurant regulations of the NLEA as a good first step, a spokesperson notes what CSPI regards as several weaknesses in the current regulations.⁸ In manufactured food products, all labels must contain the standard ingredient and nutrient information, but in a restaurant, the customer must ask for documentation. Otherwise, the restaurant need not provide it. As a practical matter, however, most restaurants make this information available in a pamphlet and have for some years. Most QSR chains also list nutritional information on their Web sites. The requirement did, however, place a new burden on independent restaurants.

A second problem the CSPI cites is the narrowness of the regulation. As noted earlier, the information made available need relate only to claims made rather than provide a complete nutrient profile for the item. This can result in “weak and misleading” information. Moreover, the “reasonable standard” is very loose in the CSPI’s view. Simply adding up the ingredients in a recipe—which may or may not be followed closely—is not enough in its view.

Finally, the FDA has made it clear that, for now, it will not be involved in enforcement of the NLEA in restaurants. It will leave enforcement to state and local authorities. Given the huge number of restaurants and the FDA’s limited resources, this is hardly a surprising decision, but it does suggest the strong possibility of somewhat uneven enforcement. The CSPI position is that restaurant customers deserve to have nutritional information readily available. As CSPI’s Dr. Margo Wootan says, “Americans are increasingly relying on restaurants to feed themselves and their families. However, without nutrition information, it’s difficult to compare options and make informed decisions. Few people would guess that a small chocolate shake at McDonald’s has more calories than a Big Mac.” In addition, she states, “Customers don’t order meals without knowing the prices, and we can’t expect them to make healthy decisions without knowing the nutritional price as well.”⁹

Almost certainly, however, the industry has not heard the last of this issue. Should the composition of Congress or the climate of official opinion change, the CSPI will undoubtedly be pressing once again for stricter disclosure standards for restaurants.

FOOD SAFETY AND SANITATION

The issue of food safety, and the overall safety of the food chain, is much on people's minds. As with so many consumer issues, **food safety** and **sanitation** involve government regulations—in this case, as enforced by policy makers, public health officers, and inspectors. Sanitation is one aspect of food safety. In the United States, the FDA oversees food safety. Its mission is to protect public health by ensuring the safety of the food supply (although the USDA regulates some food categories). In addition to regulating food, the FDA also regulates cosmetics, drugs, medical devices, and other products. Its Web site states that:

Ensuring safe food remains an important public health priority for our nation. An estimated 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths are attributable to foodborne illness in the United States each year. For some consumers, foodborne illness results only in mild, temporary discomfort or lost time from work or other daily activity. For others, especially pre-school age children, older adults, and those with impaired immune systems, foodborne illness may have serious or long-term consequences, and most seriously, may be life threatening. The risk of foodborne illness is of increasing concern due to changes in the global market, aging of our population, increasing numbers of immunocompromised and immunosuppressed individuals, changes in consumer eating habits, and changes in food production practices.¹⁰

With the increasing use of foods prepared off-premise, the incidence of food poisoning in public accommodations has been rising steeply. The kinds of sanitary precautions associated with food service systems that prepare food, freeze or chill it, and then transport it elsewhere are not universal. There are two other causes for concern here. First, the risks of thawing and spoilage are high. Second, the food is handled by more people. Some operators resist the increased emphasis on sanitation, but most have accepted—many enthusiastically—the need to upgrade related practices and to establish and enforce food safety standards. The National Restaurant Association's Educational Foundation has pioneered the development of sanitation-related educational materials and programs and has trained several million workers and certified over a million managers.

A strong food safety program should encompass personnel practices, food handling practices, pest control, training, and physical facilities. Even such things as the clothes worn by food service workers may compromise the safety of the food. All food service establishments should monitor all of these issues.

It is quite clear that, for the most part, the industry and those calling for the highest standards of food safety and sanitation are in the same camp. This is not surprising, because it is common knowledge that a single incident of food poisoning, broadcast to the world via the media, can mean the end of a restaurant. Sizzler restaurants and the

Jack in the Box chain received publicity for such incidents in the 1990s. In the case of Sizzler, the resulting bad publicity led to a loss in sales of 30 percent and, ultimately, the closing of 40 restaurants. Less-publicized incidents have occurred in less well-known operations. To be sure, restaurants have a real survival stake in food safety.

HAZARD ANALYSIS AND CRITICAL CONTROL POINTS. The best comprehensive approach to food safety and sanitation programs reflects a shift in thinking about sanitation from an inspection system that is largely reactive to one that takes a systematic approach to the prevention of food safety problems. In one sense, **hazard analysis and critical control points (HACCP)** is just the application of good common sense to the production of safe food. HACCP is designed to prevent, reduce, or eliminate potential biological, chemical, and physical food safety hazards.

As established by the FDA and originally developed by the National Aeronautics and Space Administration (NASA), the seven elements of an HACCP program are:

1. Analyze hazards.
2. Identify critical control points.
3. Establish preventive measures.
4. Establish procedures to monitor the critical control points.
5. Establish corrective action to be taken.
6. Establish procedures to verify that the system is working properly.
7. Establish effective record keeping to document the HACCP system. The HACCP approach is at the heart of both “ServSafe,” the sanitation training program developed by the National Restaurant Association’s Educational Foundation (mentioned earlier), and the inspection system for food products developed by the FDA. Consumers rely on food safety in restaurants as a basic article of faith. It takes hard and continuing effort to fulfill that trust.¹¹

ALCOHOL AND DINING

According to the National Highway Traffic Safety Administration, 59 people per hour, or 1 person every single minute of every day, are injured by a drunk driver, and some 20,000 are killed yearly by drunk drivers.¹² Accidents attributed to driving under the influence of alcohol have given the hospitality industry a wide-ranging set of problems. In many jurisdictions, restaurants and bars that sell drinks to people who are later involved in accidents are now held legally responsible for damages if they are negligent in their serving practices. The result has been, among other things, a great rise in liability insurance rates. Laws have been proposed—and in many jurisdictions passed—making illegal “happy hours” and other advertised price reductions on the sale of drinks. In addition, in a less strictly legal sense, operators have been concerned about the image of their operations and the industry

in general. Finally, many states and municipalities have passed legislation that requires managers and servers to receive training in responsible beverage service.

The industry's response to the increase in legislation has generally been swift and positive. One idea is "designated driver" programs. Designated drivers agree not to drink and to drive for the whole group. Many operators recognize designated drivers with a badge and reward them with free soft drinks—and a certificate good for a free drink at their next visit. Alcohol awareness training—teaching bartenders and servers how to tell when people have had too much to drink and how to deal with them—is also becoming more common (and is a requirement in certain jurisdictions). If you work in an operation that serves alcohol, be sure to find out what the establishment's policy is regarding service to guests who are or who might be intoxicated. You should do this not only because you will want to follow the house policy but because it will help you to understand better the industry's response to a complicated problem.

Consumers are drinking less, and this has posed problems for many operators. Because sales of alcoholic beverages usually carry a much higher profit than food sales, reduction in alcohol consumption has seriously affected profitability. The marketing

Many hotels have full-service bars offering a wide variety of beverages intended to enhance the customer experience and capture added revenue. (Courtesy Wyndham Hotel Group.)



response that has helped many operators is the development of a whole line of colorful and tasty “mocktails,” which are made without alcohol. Featuring “lite” beers and wines also caters to the guest’s desire to hold down caloric and alcohol intake and helps maintain sales. The biggest growth area has been in bottled water—bottled water not only replaces alcoholic beverages but is often drunk instead of other nonalcoholic beverages. There has been a tenfold increase in per-capita consumption of bottled water since the 1970s, when bottled water was thought of as something to drink in a foreign country, and consumption has tripled just since 1985. Perhaps due to the economy, bottle water sales slowed for the first time in two decades in 2008, when consumption dropped to 28.5 gallons per capita (down from 29 in 2007).¹³

FOOD SERVICE AND THE ENVIRONMENT

Preserving the natural environment generates a great deal of concern and enthusiasm—and rightly so. Our purpose here, however, is to narrow this view somewhat in looking at the impact of the environmental movement on food service. The view we will adopt, not surprisingly, is that of the business community, which looks at environmental proposals in terms of costs and benefits.

It can be difficult to discuss the environment because it is a sensitive issue for many and quickly becomes politicized. The concept can also be so broadly defined—for some, it includes water conservation, scaling back development, avoidance of animal testing by manufacturers of guest amenities, use of foods that have been naturally fertilized and have not been grown using pesticides, planting trees, and saving the rain forests. Such a broad and multifaceted notion of the environment makes it difficult to focus on the problems where food service can make a really strong contribution to the struggle to protect the environment. We certainly cannot afford to be indifferent to the problems of the environment as it is more globally defined. In this section, however, we want to examine and understand problems that are a threat and need to be dealt with at the unit level.

Restaurants and food service in general are basically a clean industry rather than a polluting one, at least when compared with the heavy manufacturing industries. In some settings, restaurants are faulted for creating traffic or noise problems. A few neighborhoods have objected to cooking odors coming from kitchen exhausts. These, however, are exceptional rather than everyday concerns. There are areas, however, in which food service faces, at the unit level, a serious environmental problem. As with other businesses and every household in America, **solid-waste disposal**—otherwise called garbage—is a food service problem whose time has come. Garbage is not only an environmental problem but an operational problem as well. The cost of conventional waste disposal is rising and, because of the scarcity of landfills, is more than likely to continue to increase.

THINKING ABOUT GARBAGE FROM DUMP TO WASTE STREAM

Not very long ago, garbage was taken to the dump, and nobody thought much about the management issues involved. As the pressure of population, an ever-richer economy, and a “throwaway society” interacted, however, problems of groundwater contamination, rodent infestation, toxic substances, and smell, to name a few, gave rise to a concern over the safety of what we now call a **sanitary landfill**. A first-class dump—that is, a sanitary landfill—costs something over \$500,000 an acre to build. Specialized facilities designed to handle toxic substances, such as ash from incinerators, cost even more. To prevent groundwater contamination, a sanitary landfill is lined with clay or a synthetic liner and is equipped with a groundwater monitoring system. Because rotting garbage produces methane, an explosive gas, landfills have methane collection systems. To keep down the smell as well as the insects and rodents, the day’s garbage is covered with a layer of dirt each night.

Sanitary landfills are expensive to build and maintain. More important, it is now hard to find new dump sites, because communities really don’t want them in their own backyards. In fact, the number of landfill sites has dropped dramatically in recent years.

Americans generate over 4 pounds of garbage per person every day (from 50 to 100 percent more than other countries with similar standards of living). That is over 100 pounds a week for a family of four, over 3 tons per year. To put this in perspective, the United States generates some 250 million tons of solid waste annually. The waste not only from businesses but from households puts an increasing load on a declining number of landfills. The “tipping cost” (the cost to tip the contents of a garbage truck into a landfill) has doubled in a number of cities. The range is quite wide, but fees are highest in the northeast (\$90 per ton is not unusual). The management of solid waste is a \$43 billion industry in the United States.

Just when the demand for landfill space is rising and the supply of such space is declining, another complication arises: public attitudes. The American public views environmental issues as one of the key issues of the day. Environmentally concerned citizens are also food service customers, and their strong views need to be taken into account. In fact, opinion surveys show that environmentally concerned people make up about half the population—and they are both the highest in income and the best educated. Restaurants’ interest in the solid waste problem, then, is driven by a concern to be responsible corporate citizens, by the concerns of their best customers, and by exploding waste-removal costs. As a result, we have replaced the concept of the dump, where things are dropped and forgotten, with that of a **waste stream**, which needs to be managed.

THE GREENING OF THE RESTAURANT INDUSTRY

Food service operations generate a disproportionately large amount of waste because they must discard not only the waste from food preparation but also plate waste not

eaten by consumers. A 2009 study published in the journal *Agriculture and Human Values* gives us a good idea of the composition of the food service waste stream. For example, table-service restaurants generate more than 12,000 pounds of waste per year, whereas quick-service establishments generate roughly 15,000 pounds per year.¹⁴

As we set out to consider how the waste stream is to be managed, a word of caution is in order. The public perception of environmentally effective action is not necessarily consistent from year to year. In some cases, popular environmental views don't always make physical sense. McDonald's switched hamburger wrappings in 1976 (from paper to polystyrene) and received positive press for its perceived interest in saving trees. When McDonald's switched back to paper 15 years later, it was again hailed as an environmental victory. Both public perception and scientific fact (as well as timing) need to be taken into consideration when making such decisions. Figure 8.1 reflects some of the changes that the McDonald's Corporation has made in an effort to reduce its waste stream.

The techniques available to deal with the waste stream can be summarized in three words: **reduce, reuse, and recycle**. These are the ideal solutions, but the facts of life require our list to be expanded to include **composting, incineration**, and the use of landfills.

1990:	Reduced thickness of sundae cups
1991:	Reduced size of napkins by 1 inch
1992:	Reduced basis weight of Happy Meal bag
1993:	Reduced back flap of fry carton
1994:	Reduced thickness of trash can liners
1995:	Replaced hash brown cartons with bags
1996:	Changed to thinner carry-out bags
1997:	Decreased weight of in-store trays
1998:	Converted to sandwich wraps for fish sandwich
1999:	Introduced insulated wraps for Quarter Pounder sandwich
2002–2004:	Continue to decrease the weight of paper napkins and cardboard packaging and to use a higher percentage of recycled materials in napkins
2005–present:	Slight changes to the Big Mac carton saved 423 tons of paper per year; newer building models that are more energy efficient; 82 percent of McDonald's consumer packaging is now made from renewable materials. In Europe, McDonald's recycles all of its used oil, sending 80 percent to biodiesel conversion, with Latin America and the United States expanding oil recycling programs as well.

Figure 8.1

Changes made to McDonald's packaging materials, 1990–today.

Source: www.mcdonalds.com.

REDUCE. Increasingly, the public is glad to be offered the possibility of receiving a product without wrapping or a bag, and some quick-service companies are offering customers sandwiches without their customary paper wrapping. Often it is possible to switch to a less bulky form of packaging—from cardboard to paper, for instance. Companies are also insisting that suppliers provide product in packaging that minimizes waste.

McDonald's switch back to paper reduced the volume of packaging waste by 90 percent. Even newer packaging is designed specifically to use more recycled material and to decay more rapidly.

REUSE. Another seemingly appealing strategy for many operations is a switch from disposables to permanent ware (reusable china or plastic dinnerware). This would reduce dramatically paper and plastic waste. The problems this "solution" creates, however, suggest once again how important it is not to oversimplify. Restaurants built to rely on disposables have no space to locate a dish room or china storage. If they remodeled to put it in, the cost would be exorbitant, and space would probably have to come from customer seating—with reduced sales as the result. A heavy expenditure resulting in reduced sales would bankrupt many restaurants. Even if we assume, implausibly, that such a development could take place, the result of all the additional water discharged would cause the city sewage system, quite literally, to explode. A dishwasher, after all, requires from 70 to 500 gallons of water per hour to operate. Such an increase in dishwashing would also result in thermal pollution of rivers from the hot water and chemical pollution from the very strong soaps used in dishwashing.

Other forms of reuse are more practical. Products can be bought in containers that can be returned to the manufacturers for reuse or reused in the operation.

Instead of discarding wooden pallets in a warehouse or commissary, most are now being built to stand up to reuse.

The major opportunities available from a strategy of reducing and reusing appear to lie with changes in the way products are purchased. Minimizing unnecessary packaging, eliminating the use of toxic dyes or other substances that make packaging hard to recycle, and using recycled products or recycling containers all contribute to a reduction in the total waste stream. One enterprising restaurant owner purchases extra flatware at garage sales to "lend" to customers when they purchase takeout meals from his restaurant. He only asks that they return it to the restaurant after using it. He finds that the cost is minimal and outweighs the cost of buying and supplying disposable flatware.

RECYCLE. A substantial amount of recycling is already going on across food service segments. Metal, paper, cardboard, plastic, and glass are already established as recyclables. We should note, however, that, in recycling, all metals are not equal. Steel cans can be and are usefully recycled, but the advantages are nowhere near as great as they

are for aluminum cans or plastic bottles. In fact, it's now cheaper to recycle aluminum than it is to mine bauxite, the ore from which aluminum is extracted.

The key factor in recycling is its economics. True, the materials in the waste stream have some value, but the basic driving force is the rise in landfill costs. Although some communities still have adequate landfill space, the evidence suggests that waste trucked in from distant cities will, in time, fill these. Overall, landfill costs, as we noted earlier, are rising, and for large metropolitan areas, landfill availability is disappearing.

Recycling, however, requires considerable effort. Think about the case of quick-service food waste. If we want to recycle, it will be necessary to sort the waste into recyclable categories. Some operators, particularly institutions, are using consumer sorting. Consumers may be asked to use different bins for glass, paper, plastic, and food waste. Let us assume that we decide to persuade our customers to sort paper, plastic, and food waste into separate containers. New bins—taking up additional floor space—must be installed and a suitable “training program” set up for our guests. This educational effort would almost certainly include special signage showing the guest what was expected, and tray liners and posters explaining why we're undertaking this effort. At least during the start-up period, some personal assistance to explain the process—and solicit people's support—would probably be required. The trash will then very likely have to be resorted by an employee, by the waste hauler, or by the recycler. Thus, sorting itself requires considerable time and effort. Plastics, moreover, will need to be further sorted according to resin type, using the codes shown in Figure 8.2.

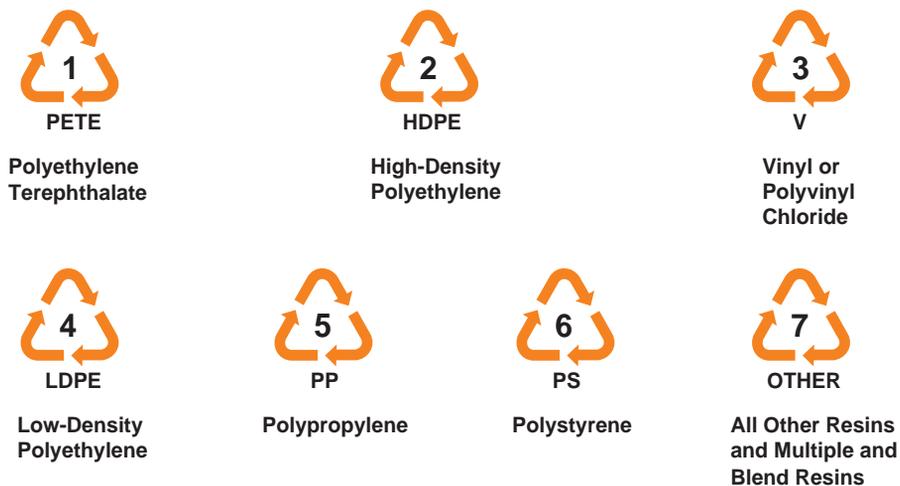


Figure 8.2

Society of the Plastics Industry (SPI) coding system. (Source: plasticsindustry.org, 2009.)

The storage we currently have is probably a Dumpster, with perhaps a second container for corrugated boxes. Under the new regimen, however, we will need separate containers for several categories of waste. They certainly won't fit into the current back of the house, so they will likely have to be crowded into the loading dock area, which may require some redesign to make everything fit and still have room for delivery trucks.

This is not the end of the complications. We probably now have only one hauler, a company that does everything for us with one type of truck. Under the new arrangements, different haulers might be required: one for paper, another for metal, and so forth. Even assuming one company does all of the work, the truck that does the hauling will have to have multiple compartments, or possibly the hauler will have to use more than one truck, each designed for different parts of the waste stream.

Because the technology of sorting garbage is changing rapidly, it may be that much more of the sorting will be done at recycling centers in future years. This could significantly reduce the restaurant's labor cost in sorting and make recycling more attractive.

As we have noted, the advantage to the restaurant of recycling is financial—the hauling fees for recycling are less than the tipping fees at the landfill. A further major advantage is that of public relations. Customers are concerned about the environment and are likely to react favorably to firms that are leaders or solid performers in the environmental arena.

COMPOST. The term *composting* refers to the collection and processing of food trimmings, scraps, and leftovers. Small-scale composting has been going on in rural areas (and backyards) for centuries. However, as a large-scale movement affecting all of society, it is still in its infancy.

Because of the wet, dense nature of food waste, it must be combined for composting with a bulking agent, such as leaves, wood chips, or shredded paper, to allow for air circulation. The material is placed in rows and, in most present-day applications, a front-end loader is used to turn the material periodically to maintain exposure to the air. More mechanized plants to manage the composting process will undoubtedly become common in the future. Finished compost can be used as potting soil or to enrich a garden or the soil around trees or bushes. Test programs have been successful in a number of municipalities, some of which report a reduction in garbage removal costs of 50 percent. It is also important to note that many operations, particularly in on-site food service, are using compostable utensils made of corn plastics. Although these products seemingly are attractive, the research is not conclusive yet as to whether these are better for the environment, as they take considerable time to degrade.

INCINERATE. Incineration (or combustion) provides yet another way to dispose of waste. Currently, 15 percent of all waste nationwide is disposed of in this manner. Some states, such as Florida and Maine, incinerate over 20 percent of their waste.¹⁵ Unfortunately, combustion of waste creates environmental problems of its own and, as a result, is subject to a great deal of controversy. One principal concern is air pollution; however, it appears that technical advances in scrubber systems and combustion control make it possible to overcome these problems in properly managed systems. As no management system is perfect, what this means is that, in practice, air pollution control may not be perfect. Because the air pollutants can include heavy metals, acid that leads to acid rain, and poisonous dioxin, this is no small issue.

A second problem is that 25 percent of the product remains as ash after combustion and must be placed in a landfill. Looked at another way, this means that combustion reduces waste by 75 percent (by weight). However, because the remaining ash contains toxic pollutants, the danger of eventual leaching into groundwater is a serious one. Specialized landfill sites with extra protection against leaching are needed.

A further concern put forward by environmentalists is the contribution that incineration can make to the greenhouse effect. Where the only alternative to incineration is dumping in a landfill, this concern is misplaced. Landfills generate methane, which traps heat radiation and, hence, contributes more to the greenhouse effect than would the gases given off by incineration. If, however, the alternative to incineration is recycling, recycling would be preferred both because of its environmental impact (air quality and elimination of ash) and because of its significantly lower cost to the community and to individual businesses.

LANDFILL. The least preferred, but most commonly used, method of disposal is the landfill. Fifty-seven percent of solid waste ends up in landfill sites.¹⁶ They are costly to construct and maintain and are potentially long-term environmental hazards. They hide rather than dispose of the trash, which decays only very slowly and imperfectly under the landfill's conditions of lack of oxygen and moisture. As noted, they can contribute to a worsening of the greenhouse effect. It appears that the scarcity of landfills may eventually drive the cost of this method of disposal beyond what most operations can afford.

Fortunately for food service operators, residential recycling programs being set up by municipalities and other governmental agencies are beginning to create the channels of collection, redistribution, and processing necessary to make large-scale recycling work. As our discussion makes clear, moving toward recycling is no simple matter, but at the same time, the amount of waste that is being recycled doubled over a 15-year period.¹⁷ Managing the waste stream will almost certainly be a concern that touches your career, so it is good to have a broad understanding of it.

TECHNOLOGY

Back in the 1970s, a researcher looked into the future of food service, and this is what he saw:

The restaurant of the future will be automated. One individual will be capable of running a 10,000-meal-a-day commissary. Computer-controlled, automated equipment will run the food processing operation from storeroom to cleanup as well as take care of inventory control and the reordering process. In addition, the computer will handle all records, write all necessary business reports (including the annual report), forecast requirements, and perform all cost accounting duties.

Customers will dine in a computer-manipulated environment of aromatic and visual stimuli. They will stand before lighted menus picturing various entrées and punch out selections at order stations. Within 2~HF minutes, they will be served the meal via a conveyor belt running with the wall and stopping at the proper table. Dish busing commences upon the customer arising from the seat. Dirty dishes move onto a conveyor belt within an adjacent wall. The dishwashing process is completely automated. A 200-seat restaurant will require four employees and a manager.¹⁸

If technology can put an astronaut on the moon, it can surely bus tables. However, it's not what is technically possible that counts; it's what makes economic sense. In the foreseeable future, even in the face of steeply rising wages, the 10,000-meal-a-day commissaries that come into use will require a good many more employees, because it will make economic sense. Although a computer-operated food production, storage, and cleanup system is theoretically possible, it would be like using a computer just to add up a grocery bill. Less expensive methods are available.

However, touch-screen ordering stations have become a common tool in restaurants, although they are more commonly used for servers to place orders than by guests. Even where they are available for use by guests, an alternative interpersonal ordering system is also available.

We have heard reports of "six-armed robots" being designed for use in food service for years, and it could be that they are finally coming to fruition. One of the most popular booths at the National Restaurant Association show in 2000 belonged to "Flipper." Previously employed by IBM for the purpose of assembling computers, the robot had been redesigned to work in restaurant kitchens and was later marketed by AccuTemp Products, Inc. The estimated cost at the time was \$150,000 for a five-year lease.¹⁹ As time has shown, however, that technology has yet to be embraced. Although the computerized



Technology is playing an increasingly important role in the management and operations of restaurants. (Courtesy of Micros Systems, Inc.)

environment described previously or a fully automated food production system is unlikely to emerge in the near future, labor costs make mechanization and automation appealing to operators. Much of the change in equipment is incremental; that is, small improvements make the kind of equipment we now use even better. These applications of technology include better energy control and more mechanization of existing equipment to make control of the production process easier. Examples include timers on fryers and moving belts in ovens. In addition, in almost every area of food service, the potentially revolutionary elements of technological change loom larger than they did just a few years ago. On another note, a product that brings together new technology with the need for improved waste management systems, Double T Equipment Manufacturing Ltd. has partnered with two Japanese companies to sell an organic waste disposal system called the GOMIXER. The GOMIXER “uses water and heat to biodegrade food industry leftovers in four days. The only output of the system is nutrient-rich water that can be disposed or diluted and used on lawns and flowerbeds.” Rey Rawlins, Vice President of Marketing for Advanced Biotechnology Inc., one of the partner companies, says that “the system is designed for restaurants, hospitals, hotels and other large facilities. By enabling these facilities to process food waste on site, the GOMIXER reduces or eliminates landfill use, landfill fees, and transportation costs.” The system was designed specifically for hospitality organizations and is being used by several resort hotels.²⁰

ENHANCING CUSTOMER SERVICE

GUEST ORDERING. Although we are not likely to see customers being waited on by anything resembling a robot (at least not in the near future), the ability to serve people is being enhanced by electronics and computerization. Handheld computer terminals are used by waitresses and waiters to take orders at tableside automatically and instantly convey them to the kitchen. Computers give servers more time to spend with guests or permit servers to serve more guests. Computer terminals are especially helpful where the service area is remote from the kitchen. Whatever kind of ordering terminals are used—whether handheld units or stationary touch screens used by several servers—they generate legible guest checks, avoid errors in addition, speed service, and improve productivity.

Another application of technology that affects the way customers use restaurants is a video-equipped drive-through order-taking system that permits a more personal interaction between order taker and guest. Evidence suggests that the system also improves transaction speed. Single-telephone-number systems in delivery firms use computerized guest histories to facilitate order taking. These computerized systems also enhance customer convenience for takeout and delivery and offer economies of scale as well as insight into customer ordering patterns through guest history computer files. Industry Practice Note 8.2 discusses one company that is leading the technology field in food service.

GUEST PAYMENT. Credit cards are convenient to the guest. Moreover, a study at one QSR chain showed that credit card customers spent well over 50 percent more than cash customers. Bank debit cards are also being used in more and more restaurants.

The credit card represents an important social technology supported in a number of ways by electronics. Credit cards are widely used in table-service restaurants. Their now-widespread use in fast food is an important service improvement that offers greater convenience to the customer and improvements in sales and efficiency for the operator.

From order to payment, customer interaction is being facilitated by technology. We can turn our attention now to how the production process is being improved.

TECHNOLOGY IN THE BACK OF THE HOUSE

FOOD PRODUCTION. Aside from Flipper the robot, described above, equipment is being improved by enhancing its energy efficiency both in terms of cooking and in terms of the effect on ventilation requirements. Safety improvements are also being made. The technologies that underlie these developments are impressive, but the impacts are

ESP Systems

ESP Systems is a company devoted to improving service in casual-dining restaurants through enhanced technology. Its business premise is that service represents the greatest opportunity for restaurants to improve the overall experience of customers.

Chief executive Devin Green suggests that restaurants have three components: (1) quality of service, (2) quality of food and beverage, and (3) quality of atmosphere. He feels that restaurants are becoming more and more similar with regard to atmosphere and that restaurants are already squeezed to get as much as they can out of food and beverage but that the greatest opportunity is in the area of service. This is why ESP's latest product was designed to help restaurants provide more attentive service to customers.

As its Web site states:

Simply put, ESP Systems' goal is to offer its restaurant clients a distinct, competitive advantage. Over the last several decades, with the casual-dining marketplace becoming more and more competitive, restaurants have continued to refine their food and atmosphere up to a point that—across concepts—these business components have become largely commoditized. Based on a number of demographic, competitive, and societal trends, the level of service a restaurant offers each guest remains today's greatest opportunity for differentiation, guest impact, and productivity gains . . . and up until now, service has been an invisible and highly inconsistent component of a restaurant's business.

Its systems provide a “wireless bubble” in which customers and service employees are brought closer together. It is an enhanced table management system that identifies service problems, such as neglected guests, as well as any deviations from preestablished service standards. It also allows restaurants to collect performance data on individuals, service teams, and entire shifts.

As has been discussed extensively in this book, the demographics of the country are changing, among both employees and customers. It could be argued that, at one time, both of these groups might have

marginal improvements in cost and operation. Some (relatively) new equipment, such as the combination steamer/oven, adds flexibility to the kitchen because it can be used in more than one process. Another innovation, the two-sided griddle, reduces cooking times by one-third to one-half or more and also reduces product shrinkage. Newer still, ranges that use induction heating (which uses a magnet that creates current) result in cooking surfaces that never get hot and work well for demonstration-style cooking. Portable induction units also are used for buffets.

REFRIGERATION. In the 1950s, frozen prepared foods were introduced into restaurants. Frozen entrées simplified delivery and inventory problems and reduced the level of skill needed while broadening the range of menu items that could be used in a kitchen lacking skilled cooks. The freezing process, however, has adverse effects on quality. Ice crystals

been resistant to technologies that involved the customer to such a great extent. (Older readers will recall the challenges when automated teller machines were first introduced.) ESP is taking advantage of the predisposition that younger employees and customers have toward technology. Employees are connected to the ESP System through watch-like devices on their wrists, which can show the status of a table or party at a glance. Guests are connected through monitors on their tables, which allow them to communicate with employees when the need arises.

The system allows restaurant management to capitalize on real-time information, management alerts when deviations occur, ongoing table status (where tables are labeled as Ready, Dining, Almost, and Busing), and performance reports. Because of the system's ability to help better manage service times, average table turns are reduced by approximately 10 percent. Finally, the system has applications for upselling. Restaurants using the system have experienced increases in their average guest check. Finally, the mere fact that restaurants are using the system creates a buzz where customers are likely to tell their friends, which, in turn, increases visits.

ESP provides the system to restaurants for a monthly fee, provides training and support, and will visit restaurants to update or change desired specifications. At this time, three restaurant chains are using the product, including Applebee's.

Devin Green indicates that ESP Systems is always working on a new generation of systems in an effort to be even more reactive to client needs. He further believes that point-of-sale systems are the "nucleus" of restaurant technology and that while much of the recent investment in technology has been in the back of the house, there is a shift occurring in which more attention is being paid to the front of the house. Finally, he sees additional possibilities and opportunities for guests to pay at different service points (such as at the table), guest loyalty programs, and co-marketing opportunities.

that form at the time of freezing cut tissue in the product, which changes the consistency of some foods. Also, when products are reconstituted, they lose flavor-filled juices.

The next advance in the use of refrigeration was the development of chilled prepared foods. Foods are held in the latent temperature zone, from 28 to 30 degrees Fahrenheit. In this temperature range, holding characteristics, in terms of both flavor and microbiological quality, remain at the level of the fresh product's quality.

There are two methods of chilling a product: tumble chill (cooked food is packaged in plastic and chilled in cold circulating water) and blast chill (food held in pans is chilled by exposure to high-velocity convected cold air). Foods chilled by cold water have a shelf life of up to 21 to 45 days, depending on the type of food product. Foods chilled by convected air have a shorter shelf life, up to 5 days, including the day of preparation and the day of use. Blast freezers are also being used with greater frequency.

A major advantage of this new storage technology is in the scheduling flexibility and productivity it gives the operation. Skilled cooks can be brought into a central facility to work from 9 A.M. to 5 P.M., Monday through Friday, preparing products to be held in inventory. Less skilled employees can be used during all the hours of operation to reconstitute a varied menu of high-quality products that have not lost flavor through the freezing process. The applications of cook-and-chill range from health care facilities, to cruise ships, to correctional facilities.

Finally, there are new uses of older technology. A good example of this is the development of refrigerated drawers, which are placed under workstations. This allows the food product to be right at the workstation while also keeping it at the correct temperature. Refrigerated drawers have applications in both quick-service and table-service restaurants. They are produced by companies such as Hobart.

Many new developments are being made in back-of-the-house equipment. Looking to the future, perhaps the most anticipated development will be the “smart kitchen,” as envisioned by the National Association of Equipment Manufacturers (NAFEM). According to a recent meeting of its members, “The smart kitchen will allow multiple pieces of equipment to communicate to a central intelligence area. Operators will be able to automatically manage everything from basic food safety to production and maintenance tasks. It will monitor equipment and enhance energy and labor efficiency of an operation, while improving food safety.”²¹ Understanding that a building’s kitchen uses five times more energy per square foot than the rest of the building combined, new kitchens will also be designed with sustainability in mind, with an environmentally friendly design.

TECHNOLOGY, THE INTERNET, AND FOOD SERVICE MARKETING

The Internet is an advertising medium of great power, and more and more restaurants are taking advantage of it. The most common approach to using the Internet is to use it for e-mail or to establish a Web site. In a blog on emerging technology, the author notes that every restaurant should have a Web site, and virtually all chain operations already do. Also, interactivity is key. Many sites already have games related to the product line; more advanced sites (Pizza Hut is a good example at pizzahut.com) allow you place orders, leave feedback, and create your own preference profile.²² Moreover, the Web site can offer electronic couponing, the ability to make reservations, and an online review of menu offerings.

Although Internet commerce has been around a relatively short time, there are clear indications that the restaurant industry has not begun to utilize the Internet to its full extent. Restaurants offering home delivery service are appearing on the Net

with increased frequency. Web sites typically use a shopping cart metaphor to allow surfers to browse product lines, select products for purchase, and complete payment.

TECHNOLOGY AND BANQUET SALES. Automatic sales and catering software makes it possible to combine management of an individual customer account with the overall management of group sales and catering. These systems are both accurate and more efficient in their use of people's time. A typical computerized sales and catering system includes a daily function summary showing space bookings for every day of the year, details on each function such as room setup and menu, and timing of meals and breaks. When the booking is complete, a contract reflecting the customer's requests is prepared automatically by the system. Where the restaurant is a part of a hotel or conference center, group rooms control is also provided.²³

TECHNOLOGY AND MANAGEMENT

Computerized point-of-sale (POS) systems not only make the service process easier for employees but save managers work by preparing routine reports; tracking inventory, stock levels, and costs; and determining which items are producing a profit. Some companies are linked directly to their suppliers' computers, and ordering is done automatically as product is used. Red Lobster's management system prepares a daily food use forecast that is adjusted by unit managers and used as a basis to bring product from locked storage to the preparation area for the day. The same usage report is transmitted to the chain's Orlando headquarters, where it is translated into orders to suppliers. These orders are transmitted from Orlando to suppliers across the United States and Canada. Notice that this process not only increases control chainwide but also saves a good deal of time for unit managers. Clearly, the impact of the Internet, and technology in general, is growing and can be seen in almost all areas of food service.

SUMMARY

This chapter has covered a wide range of topics, each of which is having an impact on the food service industry. The first issue that we discussed was consumers' concern for nutrition in restaurant food. Although consumers' concern about nutrition cannot be overlooked, there is an even stronger preference for taste. Operators try for balance with menu offerings to suit both preferences. Consumerists criticize food service for not following what they see as the path of virtue, but restaurants know that

they cannot force consumers to behave in a certain way despite all their advertising. Marketing does best when it follows the lead of the guest.

The Nutrition Labeling and Education Act limits the health claims restaurants can make and requires them to provide information on any nutrient or health claim they make. Although enforcement of the NLEA is very uneven, most restaurants were in compliance with the act before it was passed.

Sanitation is a major concern for the restaurant industry, and the Educational Foundation of the National Restaurant Association has certified several million workers and nearly a million managers in courses on that topic. The industry's interest is explained, in some part, by self-interest—bad publicity about sanitation can destroy a restaurant. The best approach to developing a sanitation program is to follow the principles and procedures of HACCP.

Environmental concerns about waste management can be acted on effectively at the unit level. The shrinking availability and mounting costs of sanitary landfills give a pragmatic basis for this concern, as do the sentiments of customers who are concerned about the environment. We discussed six ways to deal with solid waste: reduce, reuse, recycle, compost, incinerate, and landfill. Choosing cost-effective solutions is complicated by program costs, availability of support channels, and unwanted side effects. Some of the costs and other issues were addressed.

Technology is playing a growing role in food service, but it is still subject to economics and customer acceptance. Technology is being used to enhance guest services as well as to control costs and increase efficiency. The chapter discussed the uses of technology in the following areas: guest ordering and payment, food production and refrigeration, marketing (specifically on the Internet), managing banquet and catering departments, and management control and communication.

Key Words and Concepts

Healthy eating

Overweight

Dietary schizophrenia

**Nutritious food and
consumer demand**

Consumerism

**Nutrition Labeling and
Education Act (NLEA)**

Food and Drug

Administration (FDA)

Nutrient claim

Health claim

Food Safety

Sanitation

**Hazard analysis and critical
control points (HACCP)**

Solid-waste disposal

Sanitary landfill

Waste stream

Reduce, reuse, and recycle

Composting

Incineration

Review Questions

1. What is meant by *dietary schizophrenia*? What do you think of the way the industry is responding to it?
2. Which of the consumerist issues discussed in this chapter have you encountered as a customer or employee of food service? What are your views on these issues?
3. What is the status of landfill availability and cost in your community? What is its outlook? What is the outlook for recycling and composting in your area?
4. What are some of the steps that you think a restaurant operator can take to help with some of the solid-waste problems?
5. Using as an example an operation with which you are familiar, describe the steps necessary to make recycling possible in that unit.
6. What problems hinder the use of technology? What technological innovations do you think operations should be seeking?

Internet Exercises

1. **Site name:** Center for Science in the Public Interest
URL: www.cspinet.org
Background information: The Center for Science in the Public Interest (CSPI) is a nonprofit education and advocacy organization that focuses on improving the safety and nutritional quality of our food supply. CSPI seeks to promote health through educating the public about nutrition and alcohol; it represents citizens' interests before legislative, regulatory, and judicial bodies; and it works to ensure that advances in science are used for the public's good. It has been very active in targeting the restaurant industry with their public interest issues.
Exercises: Go to the "Newsroom" link and choose and read a current or previous article that targets a segment of the restaurant industry.
 - a. Discuss how the article you read might impact the restaurant industry. Do you think this article will persuade the restaurant industry to change? Why or why not?
 - b. If you worked with the CSPI, what would you list as your top three priorities?
2. **Site name:** CSPI Alcohol Policy
URL: www.cspinet.org/alcohol/index.html
Background information: In 1981, the CSPI launched the Alcohol Policies Project to help focus public and policy-maker attention on policy reforms to reduce the health and social consequences of drinking. Since then, the project has worked

with thousands of organizations and individuals to promote a comprehensive, prevention-oriented policy strategy to change the role of alcohol in society.

Exercises:

- a. Go to the “Take Action” link and choose an alcohol policy project issue. Describe in detail how you feel the issue impacts the restaurant industry, both positive and negative. There is no right or wrong answer for this—purely your opinion.
- b. Go to the “Fact Sheets” link and choose an alcohol policy project issue. List three facts that support your answer to #1B.

3. Site name: Center for Consumer Freedom

URL: www.consumerfreedom.com

Background information: The Center for Consumer Freedom is a nonprofit coalition of restaurants, food companies, and consumers working together to promote personal responsibility and protect consumer choices. The growing cabal of “food cops,” health care enforcers, militant activists, meddling bureaucrats, and violent radicals who think they know “what’s best for you” are pushing against our basic freedoms.

Exercises:

- a. Review the above site as well as both of the CSPI sites. Lead a class discussion on:
 - i. The goals of the Center for Consumer Freedom
 - ii. How do they differ from CSPI?
 - iii. After reviewing this Web site and CSPI, which one do you agree with most? Why?

4. Site name: Centers for Disease Control and Prevention

URL: www.cdc.gov/foodsafety/

Background information: The Centers for Disease Control and Prevention (CDC) is one of the 13 major operating components of the Department of Health and Human Services (HHS). Its mission is to be at the forefront of public health efforts to prevent and control infectious and chronic diseases, injuries, workplace hazards, disabilities, and environmental health threats.

Site name: Food and Drug Administration’s “Bad Bug Book”

URL: www.fda.gov/Food/FoodSafety/FoodborneIllness/FoodborneIllnessFoodbornePathogensNaturalToxins/BadBugBook/default.htm

Background information: This handbook provides basic facts regarding foodborne pathogenic microorganisms and natural toxins. It brings together in one place information from the FDA, the CDC, the USDA Food Safety Inspection Service, and the National Institutes of Health.

Site name: Fight Bac

URL: www.fightbac.org

Background information: Fightbac.org is the Web site of the Partnership for Food Safety Education (PFSE). PFSE is a not-for-profit organization that unites industry associations, professional societies in food science, nutrition and health, consumer groups, and the U.S. government to educate the public about safe food handling.

Exercises:

- a. Choose any three of the following pathogens that cause foodborne illnesses: *E. coli*, *Salmonella*, norovirus, hepatitis A, *Listeria*, and staphylococcal food poisoning. Collect the following information for each using the three Web sites above:
 - i. Name of the pathogen
 - ii. Foods typically associated with foodborne illness and this pathogen
 - iii. Duration of time after the contaminated food is eaten and symptoms begin to appear
 - iv. Symptoms typically caused by this pathogen
 - v. Duration of the illness (include the likelihood of death resulting from the illness)
- b. What can a food service manager do to prevent a foodborne illness caused by the three pathogens you selected?

5. Site name: News search engines/sources

URL: Google—www.google.com; Bing—www.bing.com; Yahoo!—www.yahoo.com

Background information: All the major search engines have a “News” tab that can be selected to search thousands of news sources worldwide on any topic entered by the user. Newspapers.com is a directory of all the newspapers in the United States regardless of size. On that site, you can search for a newspaper by title, state, or city.

Exercises: Choose a topic such as food safety, food sanitation, alcohol abuse, alcohol and restaurants, happy hours, menu legislation, Center for Science in the Public Interest, or a topic assigned by the instructor. Using a news search engine or a newspaper from your hometown, search for current news on a topic. If you use a news search engine, be careful to select only news from the country in which you are studying. Lead a class discussion on the news item to include the following:

- a. Describe the impact this news item has on the restaurant/food service industry.
- b. Indicate why this news is relevant to managers in the restaurant/food service industry.

- c. If you were a restaurant manager, how would your behavior change as a result of having this information? What would you do differently?
- d. Discuss what future changes you believe might occur in the restaurant/food service industry as a result of this news.

Notes

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5. National Chicken Council, www.eatchicken.com, November 1, 2009.
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