

Introduction to Food Production and Service

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Beth Egan



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Section 1 - Introduction to the Industry

FOOD SERVICE IN THE HOSPITALITY INDUSTRY

Chapter 1: FOOD SERVICE SEGMENTS

LEARNING OBJECTIVES

- To understand the importance of food service within the hospitality industry
- To differentiate between commercial and non-commercial food service establishments
- To identify segments within commercial food service and the factors used to differentiate segments
- To identify segments within non-commercial food service and the unique features of each segment
- To describe key trends impacting food service establishments
- To articulate professional career options within food service

CHAPTER OUTLINE

- Food service in the hospitality industry
- Commercial food service
- Non-commercial food service
- Trends and emerging issues in food service
- Professional careers in food service
- Conclusion

KEY TERMS

- **Casual Restaurants**
- **Casual Upscale Restaurants**
- **Commercial Food Service**
- **Family Restaurants**
- **Food Trucks/Street Food**
- **Hyper-Local Sourcing**
- **Non-Commercial Food Service**
- **Quick Casual Restaurants**
- **Quick Service Restaurants**
- **Theme Restaurants**
- **Upscale/Fine Dining Restaurants**

Food service is a dominant segment of the hospitality industry that represents a significant proportion of the economy. The restaurant industry is approximately an \$800 billion dollar industry. The average household spends nearly 50% of its food dollars in restaurants. Food service is also a significant employer. Approximately fifteen million individuals are employed in food service establishments, and 10% of the U.S. workforce is employed in restaurants. It is estimated that over one million food service establishments exist in the U.S. This statistic is noteworthy in and of itself, but also in comparison to the 53,000 U.S. lodging establishments.

Given its dominance and importance, students of hospitality management should possess a working understanding of the food service segment of the hospitality industry. As such, the purpose of this chapter is to educate the reader on different segments of food service. Most of this chapter is devoted to discussing commercial food service establishments. A commercial food service establishment is that whose main purpose is creating and selling food and beverage. Non-commercial food service establishments are discussed later in the chapter. A non-commercial foodservice establishment is embedded in an organization where food and beverage is not the primary business focus, such as in healthcare, education, the military, and transportation. Food service is continually evolving, and this chapter will highlight some of the notable trends and emerging issues. Finally, this chapter will discuss a variety of career options that might be of interest to those seeking to pursue a professional career in food service.

COMMERCIAL FOOD SERVICE

The majority of food service establishments are in the commercial sector. These establishments vary in numerous respects, and it is not an easy task to categorize the vast array of establishments into neatly defined segments. There were once clearly defined segments, but today lines across segments are blurred in many respects. These limitations notwithstanding, we will discuss eight primary segments: 1) quick service 2) food trucks/street food 3) quick casual 4) family 5) casual 6) themed 7) casual upscale 8) upscale/fine dining. Each segment will be differentiated by service level, quality of menu offerings, and price point. These attributes will be discussed within each segment along with other unique characteristics.

With McDonald's alone spending nearly one billion dollars on advertising each year, readers are certainly familiar with the quick-service segment. Quick service restaurants (QSRs), commonly known as fast food by the general public, are those where the customer orders at a counter, pays prior to receiving the product, and picks food up at the counter. Drive-thru service is also commonplace in the QSR segment. The service level is minimal, fast, and efficient. The food quality is low-cost value with average checks under \$8.00. QSR establishments may be open for all three meal periods (breakfast, lunch, and dinner) with some operations providing 24-hour service. In 2015, McDonald's began offering breakfast all day, although the verdict on the success of this rollout is still out. QSR establishments are unquestionably chain dominated and are they child friendly with specific children's menus. Most "pizza shops" fall into the

QSR segment as well. Some establishments may be coined *QSR-Plus*, such as Chick-fil-A, Five Guys Burgers and Fries, and Shake Shack, who provide higher quality offerings and realize higher check averages. Traditionally, McDonald's, Burger King, and Wendy's dominated the QSR segment, but dominance has begun to shift. McDonald's still occupies the number one position in sales, but the number two and three spots go to Starbucks and Subway.³ Subway tops the list with the most number of units/restaurants. Today there is more competition among key players within QSR, and QSR establishments are competing with the quick casual segment as well.

Years ago, food trucks and street food vendors would not have been included in a textbook chapter, but today they are a popular and steadily growing segment. The famous Halal Guys food cart on 53rd Street and 6th Avenue in New York City is rumored to generate over one million dollars in annual sales. Similar to QSR establishments, food truck/street service is counter-based and limited, due to their small street-side presence. Patrons order and pay at the counter, take their food away, eat right on the sidewalk, or may sit at a few tables nearby. These operations typically have a limited menu; they find a few things to do very well (e.g., falafel, grilled cheese, or crepes). These establishments are not necessarily the hot dog and pretzel stands they once were with a reputation of serving poor quality food ("roach coaches"). Some may still provide lower quality food, but others provide a higher-end menu, sometimes with gourmet offerings. In fact, the trend in food trucks/street food is toward the higher end. Check averages span a few dollars to over \$20. Pepe, a Washington DC-based food truck inspired by Jose Andres, a Spanish trained chef who worked at El Bulli, the number one ranked

restaurant in the world for several years, offers a sandwich priced at \$20. Unlike QSRs, food trucks/street food vendors are typically independents, but chains are beginning to emerge, such as The Taco Truck in New York, Massachusetts, and New Jersey. Food trucks and street vendors have been innovative using social media as a marketing strategy. Kogi is a famous taco truck in Los Angeles that has utilized social media to amass a cult-like following by tweeting their various locations numerous times throughout a day.

The quick casual (also known as fast casual) segment is fast-growing, exciting, and is taking market share from QSR and the family and casual dining segments. Much of the growth in this segment can be attributed to dominant players such as Chipotle and Panera. Other key players in this segment include Noodles and Company and Pei Wei Asian Market. Service is limited similar to QSR. One of the major points of distinction of quick casual vis-à-vis QSR is the quality of their menu. Chipotle cooks from raw ingredients and prepares items like guacamole from scratch. Panera offers high-quality sandwiches, soups, and salads and fresh baked goods daily. An emphasis is placed on freshness, and many items are prepared in front of the customer. These establishments often have metal versus plastic cutlery, ceramic plates and bowls, and more upscale and trendier décor to further differentiate themselves from QSR. Millennials and other customers are demanding higher quality food, and they are willing to pay a little more for it, choosing quick casual over fast food. Average guest checks for quick casual typically span \$8.00 to \$12.00. The quick casual segment is largely dominated by chains.

The five segments to be discussed next are full-service

establishments. Customers no longer order at a counter and take their own food to a table. Rather, they are seated, typically receive menus, and are waited on by servers, who are central in orchestrating the dining experience. Food may now be delivered in courses (appetizer, main course, and dessert). Payment occurs at the end of the meal, and gratuities (tips) are now expected. We see alcohol served in many full-service establishments, although in some states alcohol is served at Chipotle.

Family restaurants include a mix of chains and independents. Notable examples of family restaurant chains include Bob Evans, Cracker Barrel, Denny's, Friendly's, IHOP, and Perkins. You will also find many independent restaurants, local diners, and "mom and pops" in this segment. Homestyle cooking dominates this segment, and family-style restaurants are typically open for breakfast, lunch, and dinner. With respect to family restaurant chains, there is limited or no alcohol service, most offer breakfast all day, and many are open 24 hours. These establishments focus on value, and average checks range from \$6.00 to \$12.00. Buffet restaurants can also fall into this category. With the increasing popularity of quick-casual restaurants and greater health consciousness among many Americans, buffet restaurants have been declining in certain regions of the U.S. While Americans once valued the all-you-can-eat for a fixed price concept, they are now more health-conscious than ever before.

In turn, casual restaurant establishments position themselves with a relaxed atmosphere (relative to upscale establishments), moderately priced food, and higher quality than QSR. Typically lunch and dinner are served in casual restaurants, but not breakfast as with family-style establishments. Alcoholic beverages are now introduced

broadly in this segment. Popular casual chain restaurants include Applebee's, Chili's, Olive Garden, Outback Steakhouse, Red Lobster, Red Robin, and TGI Friday's. On the independent side, many ethnic restaurants, such as Chinese and Mexican, and sports bars fall within the casual restaurant segment. Casual restaurants focus heavily on tabletop marketing pieces to entice patrons to order appetizers and specialty alcoholic beverages. In a similar vein, servers are trained and encouraged to "up-sell" appetizers, desserts, and alcoholic beverages. Average guest checks are generally in the range of \$8.00 for lunch and \$15.00 for dinner. While popular, casual restaurants are losing market share to quick casual establishments.

Theme restaurants are an extension of casual restaurants. The major distinction is that theme restaurants focus on a specific theme. For example, Hard Rock Café focuses on rock-and-roll memorabilia, Rainforest Café centers on a jungle theme, and T-Rex is a Prehistoric themed restaurant. These restaurants are chain dominated, but there are a few independents, such as the Jekyll & Hyde Club in New York City. These establishments do serve alcohol, but many are child-focused given their themes. A major focus is on décor and architecture over food and beverage. In fact, some of these establishments cost as much as \$15 million to build. These restaurants are often found in major shopping malls and major tourist areas so they can draw on high volume. Given the high costs of building these restaurants and the high cost of real estate, theme check averages are notably higher than casual establishments (in the range of \$13.00 for lunch and \$23.00 for dinner).

The casual upscale (also known as polished casual) segment is a minor step below upscale restaurants. This

segment is arguably one of the most difficult segments for individuals to grasp conceptually. Restaurants in this segment are similar to upscale restaurants in service and food quality with average checks in the range of \$16.00 for lunch and \$50.00 for dinner. A major distinction is that they turn tables quickly in comparison to upscale restaurants where the dining pace is more leisurely. Casual upscale restaurants generally serve lunch and dinner; whereas upscale fine dining restaurants typically only serve dinner. Casual upscale establishments have expensive decor, some may use linen, they have a full bar and a high-quality wine list, and most items are prepared from scratch with the highest quality ingredients. There are numerous independently owned and operated casual upscale restaurants. However, the major players in this segment are chains, including Great American Restaurants, Hillstone Restaurant Group, and J. Alexander's. For the most part, chain restaurants in this segment do not want the connotation of being a part of a chain, but rather would like to be perceived as unique independent restaurants. Hillstone Restaurant Group, for example, varies the names of its restaurants (e.g., Houston's, Bandera, and R+D Kitchen), menu, and décor based on location to help achieve a unique independent feel.

Upscale fine dining establishments are at the top of the restaurant "food chain." Upscale fine dining restaurants have a strong focus on providing the highest level of product and service, and their décor has an upscale look and feel. Upscale restaurants will often have a wine cellar to meet guests' expectations. (Some wine cellars are rumored to have more than \$7 million worth of inventory.) Upscale establishments employ highly trained professional servers who are typically only responsible for one or two tables at

the same time. Average checks can easily exceed \$500.00. Unlike casual upscale, independents dominate the upscale fine-dining segment. High-end steakhouses, such as Pappas Bros. Steakhouse, Peter Lagers, and Ruth's Chris Steak House, fall into this segment. Alinea in Chicago and Eleven Madison Park in New York City are other examples of independent upscale fine dining. Many restaurants in this segment have an à la carte or a fixed price (prix fixe) menu. An à la carte menu prices each item separately; whereas everything is included for one price with a fixed price menu. Thomas Keller's The French Laundry fixed price menu is over \$295 per person at the time of writing this chapter. The French Laundry menu also has several "add-ons" that could easily extend the average check to over \$500, excluding alcohol. Many upscale dining establishments and their chefs strive to earn a coveted Michelin Star, a top spot in one of the several international lists, or a positive review online. Such accolades help these establishments maintain their exclusive status in a highly competitive business environment.

NON-COMMERCIAL FOOD SERVICE

Non-commercial food service can be defined as food service operations where food and beverage are not the primary focus of a business, but rather where food and beverage are present to support or supplement a "host." A variety of labels have been used for this segment over the years, including *institutional*, *non-commercial*, *contract feeding*, *on-site food service*, and most recently *managed services*. Organizations can choose to manage food service themselves, which is referred to as self-operated (self-op), or they can

contract food service out to a company that specializes in feeding and related services. Three of the dominant players today in non-commercial food service include Aramark, Compass, and Sodexo. While the success of a commercial restaurant is often determined by its sales volume in dollars, non-commercial success is often rated by participation (volume of people). This is especially true in cases where food is free or partially subsidized by the host company for its employees.

The segment is somewhat misunderstood and sometimes has the connotation of only serving school lunches, hospital food, and meals in a nursing home. This segment does serve these operations, but is more diverse and spans everything from elementary school meals to fine dining. This segment also sometimes has had a reputation of only serving uninspired food. However, companies like Google have highly trained chefs that prepare and serve very high-quality food. They focus on local, organic, and sustainable offerings. Apple Inc., at its new multi-billion dollar headquarters, features a garden where chefs are able to select fruits, vegetables, and herbs from the property. This emerging trend has been coined *hyper-local sourcing*.

A wide variety of businesses and other organizations house non-commercial food service operations. These segments are discussed briefly below.

- *Business and Industry (B & I)*. When we think B & I, employee cafeterias may come to mind. Clients range from manufacturing plants, remote site feeding (e.g., oil fields on the North Slope in Alaska), to Goldman Sachs in New York City. Services may include vending, self-service

convenience stores, cafeterias feeding hourly employees, dining rooms feeding managerial and other white-collar employees, and upscale catered events.

- *College and university.* The amount and types of food service operations in higher education depend on the size and type of school. Traditionally universities had dining halls where students would go through cafeteria-style filling up their tray as they went through the line. Now there are more options, more stations, and more made-to-order food. We also see smaller tables to mimic eating in a restaurant. Many universities use food service offerings as a recruiting tool to lure prospective students, and it is not uncommon for students and parents to tour state-of-the-art food service facilities during campus visits. In the past, different dining halls on the same campus were basically the same. Today dining halls try to differentiate themselves and compete for student patronage. Universities can be self-operated, or they may contract out their food service operations. Many universities also have retail dining areas or food courts similar to a mall where students can find many familiar QSR brands.
- *K-12 education.* Kindergarten through twelfth-grade food service primarily involves providing lunches in both public and private schools. These programs are subsidized to various degrees by the U.S. federal government, and nutritional requirements, set by federal regulations, must be

met to receive federal dollars. Many schools also offer breakfast and after school snacks, and some even offer dinner to ensure nourishment throughout the day. School nutrition programs are focusing more on purchasing local products and doing nutrition education to help improve the eating behaviors of students. Programs also offer snack foods and catering for school functions to help increase sales. School food service may be either self-operated or contracted out.

- *Healthcare.* Healthcare feeding in a traditional hospital setting includes patient feeding, employee feeding, and guest feeding. Hospitals may also have catering that can range from casual to large upscale fundraising events. The size and scope of offerings largely depend on the size and location of the hospital. Rehabilitation clinics, long term care facilities, and traditional nursing homes also provide patient feeding.
- *Continuing care retirement communities (CCRCs).* CCRCs are a relative newcomer and are becoming more important with the Baby Boomers at or nearing retirement age. Nursing homes may come to mind when you think of a CCRC, but a CCRC is closer to a resort. Many guests are still very active, and CCRCs fulfill individuals' needs for activities, accommodations, and fine food. There is a growing need for management talent in CCRCs, and many hospitality programs are adding courses in this area to their curricula.
- *Sports and entertainment arenas.* Sports and

entertainment arenas typically contract out their food service operations. Offerings range from popcorn and peanuts to fine dining full-service restaurants. There may also be catering in the box suites. Often the food at an arena mimics an area's most popular and unique items. In Pittsburgh's Heinz field, for example, you can find the famous Primanti Bros. sandwich, which is stuffed with coleslaw and fries. AT&T Park's \$8 Gilroy garlic fries in San Francisco have become famous in their own right. For the Olympics, Aramark is the food service provider, feeding athletes, coaches, staff, officials, and the press. This is food service on a grand scale serving over 3.5 million meals and 10,000 people per hour with diverse dietetic and cultural needs.⁵

- *Parks and recreation.* U.S. national parks such as Yellowstone and Yosemite contract their food service out to companies like Aramark, Sodexo, or Xanterra, which is the largest operator of park-based hotels, restaurants, and stores. Concessions, upscale dining, and catering are commonly found at most parks. There is an emphasis on sustainability and fitting in with the overall look and feel of a park. Food service at a theme and amusement park may be self-operated or contracted out. Their offerings are as varied as the park themselves, but typically include snack food or "park fare," casual sit down dining, and upscale formal restaurants.
- *Corrections.* Correctional facilities must feed

inmates and employees, and they typically forbid individuals from bringing food into a facility from the outside. Accordingly, non-commercial food service is an important component of a jail or prison system. Furthermore, food plays an important role in maintaining inmate morale in this environment.

- *Military.* This segment involves feeding military troops and affiliated support organizations. While much of the feeding is in “mess halls,” there are more upscale dining options offered in officer’s clubs. There are also balls and galas that can be upscale in nature as well. Higher ranking officers such as Generals are often assigned their own culinary team to prepare daily meals and cater to special events.
- *Airline.* The airline industry has food service in airports, ranging from fast food to casual sit-down restaurants. The Burger King or Subway in the airport is most likely managed by a contracted food service company. In-flight food service is, of course, another area that falls in this category. Two of the major in-flight food service providers are Gate Gourmet and Sky Chefs.
- *Trains.* Onboard dining options can range from snacks to full-service meals in the dining car, often requiring reservations. On many long-distance trains there may be an attendant with a snack cart who travels from car to car. Bar-buffet cars are a unique part of the train experience, where the quality of the food and wine can rival that of a

gourmet restaurant.

- *Cruises*. One of the first questions asked of someone returning from a cruise is, “How was the food?” Dining on cruise ships has evolved over the years to allow for more options and flexibility with some outlets open 24 hours. Royal Caribbean’s *The Allure of the Seas* is currently the world’s largest cruise ship with more than 20 dining options, ranging from casual snacks to fine dining (and everything in between). We are now also see branding on cruise ships with concepts like Starbucks.

TRENDS AND EMERGING ISSUES IN FOOD SERVICE

One of the newest trends is the “experience”. Customers now are expecting an authentic interactive experience while patronizing our restaurants. It is no longer enough to merely provide a great product and service. The experience must also be present in everything we do.

Menus and food preferences are always evolving. Today guests are more knowledgeable about food and more adventurous than ever before. This trend is due in part to the proliferation of television programming specifically tailored to food and celebrity chefs (see the *Food Network* for example). In line with this trend, we now see more adventurous items on today’s menus, such as bone marrow gratin and pig’s blood pappardelle, just to name a few. The National Restaurant Association highlights that we now see

a focus on the sustainability, quality, wholesomeness, and calorie content of menu offerings.⁶ As an example, Sweetgreen is a concept built around serving high quality organic and sustainable products. Sweetgreen promotes its brand by asserting, “We source local and organic ingredients from farmers we know and partners we trust, supporting our communities and creating meaningful relationships with those around us.”

While the human element is still very important in service delivery, technology is continually reshaping the experience. For example, many restaurants already offer services such as mobile payments which enable customers to use their smartphones to pay their bills.⁸ Radiofrequency Identification (RFID) is another type of technology being used at various resorts. Disney uses RFIDs in the form of *MagicBands*, which allow guests to leave their wallets elsewhere because everything from bill paying (charging) capabilities to food preferences will be orchestrated through the RFID chip embedded into a wrist band.⁹ In addition, many restaurants are using electronic tablets for payment and ordering tableside. The ability to pay the bill at the table speeds up the service cycle and helps to ensure the privacy of credit card data.

A hot topic in restaurants is no tipping for front-of-house employees. Danny Meyer, CEO of Union Square Hospitality Group (which includes Union Square Cafe, Gramercy Tavern, Blue Smoke, Jazz Standard, and The Modern) recently introduced a “hospitality included” policy in select restaurants. Danny Meyer sought a way to achieve greater pay equity between front-of-house and back-of-house employees. At Meyer’s restaurants, the tip will now be built into the price of each and every menu item. Criticism

notwithstanding, other restaurants have begun to follow suit. For example, Joe's Crab Shack has recently announced that it will pilot a no-tipping concept in 18 of its restaurants.

Another hot topic is having restaurant patrons purchase tickets for their dining experience. For the most part, restaurant pricing is the same on a Monday as it is on Saturday regardless of demand. Hotels, airlines, and live theatre all charge different amounts based on supply and demand. Nick Kokonas, cofounder of Alinea and Next developed Tock Tickets, a company that handles the ticketing process for restaurants.¹⁰ With Tock Tickets, patrons pay in advance for their reservation much like they would for a concert or Broadway show. The ticket prices vary (dynamic pricing) depending on the time of day or day of the week. This concept enables restaurants with a high demand to maximize their revenues and minimize "no-shows."

PROFESSIONAL CAREERS IN FOOD SERVICE

Given the diversity of segments within commercial and non-commercial food service, there are a variety of career options available to students. The most common upon graduation is a restaurant manager or assistant manager in a standalone restaurant. Usually, entry-level management positions are divided into front- or back-of-the-house. One can also pursue entry-level management positions in a hotel or resort as a restaurant, bar, food and beverage, or banquets manager. Individuals then progress toward becoming a general manager in a restaurant or a director of food and beverage in a hotel or resort setting. The next step would be an area or regional manager, followed by an executive

position in a corporate office. Recent college graduates also have many opportunities to work in the non-commercial segments of the industry for one of the large managed service companies and move up the career ladder within those organizations. Many also choose to become restaurant entrepreneurs where they can create and implement their own ideas and philosophies.

There are also various options for students who choose not to work in restaurants or foodservice operations. Micros, which is now owned by Oracle, provides many of the point-of-sale terminals throughout the U.S. and worldwide. Micros often hires recent graduates to work in a sales/support role. Ecolab is another company that is often behind the scenes in many restaurants by supplying cleaning and sanitizing equipment and chemicals. Ecolab also typically hires recent graduates to work in a sales/support role. Sysco is the largest foodservice food supplier in the U.S. with over 425,000 customers.¹¹ Recent graduates may begin a career with Sysco in either a sales or sales trainee role to promote Sysco's various products and services.

CONCLUSIONS

Food and beverage without question is a key component of the hospitality experience. Moreover, food service establishments are a dominant player in the U.S. economy. As this chapter highlights, there is a great variety in establishments and segments within commercial and non-commercial food service. These different segments provide unique experiences for customers and guests, and they offer a wealth of career options for those seeking a career in food and

beverage. Food service is a challenging and exciting business, and we hope this chapter has provided a useful overview of the breadth of diversity in food service establishments.

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REVIEW QUESTIONS

- What is the difference between commercial and non-commercial food service?
- What are the key segments within commercial food service? What are examples of restaurants within each segment? What factors can be used to differentiate each segment?
- What are examples of establishments within non-commercial food service?
- What are the key trends impacting food service establishments today?
- What are examples of professional careers within food service?

REVIEW EXERCISES



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BETH EGAN

REVIEW QUESTIONS



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Chapter 2 - Introduction: Revenue and Expense

Learning Objectives:

- Define key terms and recognize basic financial principles related to managing revenue and expense
- Apply the basic formula used to determine profit and ideal expense
- Describe various revenue sources for foodservice operations
- Describe typical expense categories for foodservice operations.
- Calculate cost percentages (express both expenses and profit as a percentage of revenue)
- Compare actual operating revenue and expenses with budgeted operating results
- Calculate performance to budget figures
- Appreciate a realistic expected profit figure

(percentage) for the restaurant industry.

Key Terms:

- Revenue
- Upselling
- Loyalty programs
- Expense
- Controllable expenses
- Non-controllable expenses
- Profit
- Profit and Loss Statement
- Budget
- Cost percentage
- Ideal expense
- Performance to budget

INTRODUCTION TO REVENUE AND EXPENSE

It is not enough to merely provide outstanding products and services in the foodservice industry. Managers must also create and maintain profitable food service operations. Simply put, driving revenue, while controlling expenses.

In the most basic terms, revenue is money or dollars brought in to the operation, also known as sales. Expenses are the costs associated with doing business and must be paid out

to suppliers, the landlord, local government, etc. The basic formula is as follows:

$$\text{Revenue} - \text{Expense} = \text{Profit}$$

All foodservice operations have expenses, but not all have “sales.” Some non-profit onsite foodservice operations provide their products to guests as part of a larger operation. For example, patients in the hospital don’t pay for each of their meals individually, prisoners don’t pay for their meals, and a few businesses provide an employee cafeteria where the food and beverage are free to the employee. In these situations, the revenue comes from some overall organization budget and participation may be measured instead of revenue. Even in these kinds of operations, managers typically must still work within their revenue budgets.

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REVENUE STREAMS

Sales of food and alcohol

The selling of food and beverage is obviously the main source of revenue. Proper marketing of the foodservice operation is also vital. Simply put, there are four different ways to make more money in the food service industry.

1) Bring in more customers. 2) Get them to come back,

or purchase more often. 3) Get them to bring others with them. 4) Get them to spend more while they are there (increase the average check).

Upselling

Employees should be trained in proper techniques as they relate to upselling. Upselling is when we get customers to order “extra items”. An example of unsellable items would be: appetizers, desserts, coffee, both alcoholic, and non-alcoholic beverages, or menu add-ons, like mushrooms for their steak, extra or higher priced sides for their meal, such as fries instead of chips, etc. Can you think of a time when a server practiced upselling on you?

Meeting Room Rental Space, or “Buy-outs”

One way that a foodservice operation can bring in more revenue is by collecting money for private dining rooms. Buy-outs are another way that a restaurant can make more money. A buy-out is where the food service operation sells the entire property for the evening. It is important to understand what you would charge on a particular day, to ensure that this would make financial sense.

Off-Premise Catering

Off-premise catering is another area where the operator can bring in additional revenue. Off-premise catering is where the restaurant brings the food, beverage, and service to another location. Another benefit is that the event does not utilize seats in the restaurant. Off-premise catering is also a great way to build the reputation of your business.

Delivery, drive-up

Delivery is a popular service to offer to your customers. Another benefit of delivery is that it does not take up any space in your dining room. Many restaurants offer delivery, and third party delivery is a growth area in the foodservice

industry. Many restaurants also take advantage of drive-up as well. This is where the customer can order their food by phone, or online and drive to the property and be met by an employee when they pull up. The employee then brings the food to the car, and can process the payment via a wireless system.

Service Charge

For tax purposes, tips and service charges are two completely different things. A service charge can be added to the guest check, and typical amounts can vary from 15-20%. Often times a portion of the service charge goes to the employee and a portion stays with the “house”. The portion that stays with the house can be considered revenue, and can be utilized in any manner the owner or manager wishes. This money is often used to off-set sales and marketing costs, and can also be added to the employees compensation in the form of “gratuity.” Tips, on the other hand, are money left for the server, should not technically be pooled, nor should a portion be held back from the server. Tips would not be considered a revenue source for the foodservice operation.

Merchandise

Many restaurants bring in additional revenues through the selling of merchandise. This can be as simple as selling hats and t-shirts at the cashier’s station, to operating elaborate stores and online purchases in places like Hard Rock Café, and Cracker Barrel.

Gift Cards

Gift cards are another great way to bring in additional revenue. Many restaurants offer gift cards, and this can be particularly popular during the holiday season, and can also be an “up-sell” item. Another benefit could be that many of

the gift cards sold will never be redeemed, and would then be nearly 100% profit.

Revenue/Yield Management

In the past, the prices of menu items were the same whether it was on a Friday or a Monday. Now, restaurants are applying a similar dynamic pricing strategy that is utilized by the airline industry, and hotels. In this model foodservice operations can charge different amounts based on supply and demand. They can even separate the cost of the seating from the food and beverage. For instance, you might pay a premium price for a certain table based on the day of the week, and/or time of the day.

Some foodservice operations even sell “tickets” for a particular time slot. The ticket price would vary based on supply and demand. Foodservice operations can use a company such as Tock Tickets [link to Tock Tickets](#), to handle the ticket purchase/distribution. Typically, this model only works if your restaurant is in high demand such as Per Se, or Eleven Madison Park in NYC.

Some other examples would be non-peak, and seasonal promotions. The classic “early-Bird-special” is one example where a lower price point is offered to entice customers to come in during slower time periods. An operation that is catering to a seasonal crowd like a ski resort, or beach setting, may lower or raise prices depending on the season.

Guest Loyalty Programs

Loyalty programs are structured [marketing strategies](#) designed by [merchants](#) to encourage customers to continue to shop at or use the services of [businesses](#) associated with each program. [1] These programs exist for most types of commerce, each one having varying features and rewards schemes.

In [marketing](#), generally, and in [retailing](#) more specifically, a **loyalty card**, [rewards card](#), [points card](#), **advantage card**, or **club card** is a plastic or paper card, visually similar to a [credit card](#), debit card, or digital card that identifies the cardholder as a participant in a loyalty program. [2] Loyalty cards (both physical and digital) relate to the [loyalty business-model](#).

Source: [loyalty program page on Wikipedia](#)

Definition of Expense

An expense is an outflow of money to pay for a product or service. The following section describes the most pertinent expenses as they relate to the foodservice industry. Labor and food costs are typically the most significant of all expenses. A manager should possess the knowledge and skill to both understand and control their expenses. Below we will look at the various expenses associated with the food service industry

TYPES OF EXPENSES

Food Cost – The cost associated with preparing food for sale. Not only do we need to account for entrees, and side dishes, but we also need to account for make-up costs as well. Make-up costs are all those little extras that come with a dish, or can be requested by the customer. These can range from the ketchup, mustard, and pickle spear that may come with a sandwich, to the roll and butter that might accompany an entrée. We need to look at the full picture of our costs before we can price an item on our menu appropriately.

Beverage Cost – The cost associated with preparing a beverage for sale, and in many cases we are referring to alcoholic beverages. We need to account for make-up costs

here as well. An example may be the olives garnishing a martini, the soda in a mixed drink, or the celery in a bloody Mary.

Labor Cost– Labor is one of the two highest expenses of any foodservice operation. Examples of labor costs would be salaries, wages, benefits, unemployment taxes, and any applicable bonuses. If our labor costs are too high then profits will suffer. If our labor costs are too low then customer service will suffer. A skilled manager will be able to determine the amount of labor needed on a daily basis and adjust as needed.

One easy way to see if you need to cut labor is by monitoring the first and last hour of the business day. If employees are standing around, then you could consider staggering in your employees at the start of each day, “punching in” instead of bringing them all in at once. The use of time and attendance software and hardware can also help by setting limits on how early an employee can “punch in” before each shift. You could also have them “punch out” on a staggered basis.

Controlling overtime will also be vital to control labor costs. Managers should only allow employees to go into overtime if it is truly warranted. In many cases, overtime may be warranted, and therefore budgeted accordingly.

Labor costs are on the rise, and attracting, and maintaining a steady workforce is more challenging than ever before. Many operations are investing in equipment that can automate as many tasks as possible. Robotics, which were one time only considered a thing of the future, are now finding their way into operations in many forms.

Other Cost – Other expenses are any expenses except food, beverage, and labor. Together these costs can represent

nearly 15% or more of your operation's revenues. Some examples of other expenses: equipment (both small and large), furniture, tableware, occupancy expenses, repairs and maintenance (deferred and preventative maintenance), administrative costs, and associated marketing costs. Most of the costs will either fall into one of the two categories: "Controllable" or "non-controllable" expenses.

Controllable expenses (aka non-fixed, or variable) – Are expenses that vary depending on how busy or slow the operation is. Food and beverage costs, for instance, should go up when you are busy and serving more customers, and down when you are slower and serving fewer guests. Hourly wages would be another example. An operation would typically have more labor when they are busy than when slow. Utilities, for the most part, should also vary depending on how busy or slow the operation is.

As a manager, you will be responsible for controlling and in many instances reducing the cost of controllable expenses.

If for example, your food cost percentage is higher than it should be, you will need to determine why, and fix the issue. Some things to look at would be:

- are you charging enough for the items?
- are you purchasing correctly?
- do you have excessive waste?
- are you utilizing leftovers effectively?
- are you over-portioning?
- do you have any theft?

Non-controllable (aka fixed, or non-variable) expenses are expenses that remain the same despite the volume of business

the operation experiences. Salaried managers, for example, are paid the same despite the volume of business. Rent in most cases would be another example of fixed costs. Landscaping and a monthly pest control service would also be examples of fixed costs.

PROFIT

Profit (aka the bottom line) is the benefit that is gained when revenue exceeds expenses. Revenue minus expense equals profit. The owner, or owners, will decide whether, or how much will be invested back into the operation. Typically the general manager will earn a bonus tied to profits. This creates an incentive to drive revenues while controlling costs. In non-profit onsite foodservice operations revenue exceeding expenses is typically not called profit, but something like net excess/deficit.

Two Basic Financial Documents

Profit and Loss Statement (P&L) or Statement of Activities

A foodservice operation's profit and loss statement show the revenue (sales) and expenses (costs) for a specific time. This statement can be used weekly, monthly, quarterly, or yearly. The foodservice operation's profit and loss statement typically have three sections.

1. A detailed breakdown of revenues. This will help to determine where there are variances from the budget. For instance, if revenues are down, where are they down? Catering? Food? Beverage? Or perhaps a particular day part, such as breakfast, lunch or dinner?

2. A list of your cost of goods sold, as well as your salaried, and hourly wages.
3. A final section, which includes your operating expenses: insurance, and occupancy costs. This section will vary in non-profit foodservice operations.

The Budget

The budget is simply an estimate of expected revenue, expenses, and profit. This is your “plan” or “roadmap” for the week, month, quarter, or year. This will determine how much revenue you expect to bring in, and how much you expect to spend. Typically foodservice managers are expected to bring in more revenue each year. There are of course exceptions. Will the operation be closing down for a renovation, are new competitors entering the same market, or maybe a major event will not be returning to the area, think Olympics, or a Super Bowl. In these situations, you may actually be budgeting to make less money than you did the prior year. In the onsite foodservice segment, school enrollments could be increasing or decreasing, a business dining operation might be experiencing company growth or a health care facility might be expanding. A formula similar to the one explained earlier also applies to budgeted revenue and expense.

$$\text{Budgeted Revenue} - \text{Budgeted Expense} = \text{Budgeted Profit}$$

A manager needs to be constantly monitoring the budget and adjusting accordingly. If for example, revenues are down from what was budgeted, then spending would need to be reduced as well.

SOME BASIC FINANCIAL ANALYSIS RATIOS & CALCULATIONS

Calculating Cost Percentages (Ratios)

One of the most important ratios used in foodservice operations is the cost percentage of revenue. This ratio compares expenses to revenue to identify what percentage of revenue is going to the different categories of expenses. To calculate any cost percentage the dollar cost (expense) is divided by the revenue dollars for the same period. An example of a common cost percentage that is calculated on a regular basis is food cost percentage. If the food cost for a given month is \$20,000 and the revenue for the same month is \$64,000, the food cost percentage would be 31.25%.

$$\text{\$ Cost divided by \$ Revenue} = \text{Cost Percentage}$$

Profit can also be expressed as a percentage of revenue. The calculation is basically the same as above. Many people are surprised to learn that the profit percentage for commercial foodservice operations is in the range of 2% to 7% (3). Sometimes those in the industry say the average profit is a “nickel on the dollar.”

$$\text{Profit Dollars divided by Revenue Dollars} = \text{Profit Percentage}$$

(3) Biery, M.E. , Forbes, Jan 26, 2018 retrieved from [Forbes article](#)

Calculating Ideal Expense

Sometimes it is valuable to be able to figure out how much you can spend on a particular category of expenses or on a menu item given financial goals of the operation. If a foodservice manager has a profit goal and revenue forecast,

or a price and a desired cost percentage, then a figure termed **ideal expense** can be calculated. This is the amount that can be spent on all costs to produce the full menu or just an item.

Example: If the desired profit for the chicken entrée is \$2.00 and the selling price is \$12.00, then the ideal total expense for the chicken entree is \$10.00.

$$\text{Revenue minus Profit} = \text{Ideal Expense}$$

Example: If the selling price of the chicken entrée is \$12.00 and the desired food cost percentage is 30%, then the ideal food expense for the chicken entrée would be \$3.60

$$\text{Selling price multiplied by desired cost percentage} \\ = \text{Ideal Expense}$$

Calculating Performance to Budget (Ratios)

Since the budget is a plan for an operation's financial performance, it is useful to monitor the budget from time to time, often on a monthly basis, though it might be done more frequently. One analysis typically performed is a performance to budget calculation. This compares actual revenue and actual expenses to the same categories in the budget for a given time period. The actual amount is divided by the budgeted amount to calculate the performance to budget ratio. An example would be to look at the actual amount spent on labor for a given month, and then compare that to the budget figure for labor in the same month. If a higher amount was spent on labor than was budgeted, then the performance to budget figure would be above 100%. If less money was spent on labor than was budgeted, the performance to the budget would be under 100%.

**Actual expense (or revenue) divided by Budgeted expense (or revenue)
equals Performance to Budget ratio**

This calculation might also be used to analyze actual revenue and expenditure performance for a portion of a yearly budget. Example: If 50% of the year has passed, has 50% (or more or less) of the budget been spent or has at least 50% of the revenue been received? This type of analysis allows the foodservice manager to make adjustments in the operation during the fiscal year rather than finding out at the end of the year that not enough revenue was generated or too much was spent and there is no profit or net excess for the business.

Summary

This chapter provides a basic overview of the types of revenue, expenses and financial documents that a typical foodservice operation would generate and use as well as some simple calculations that might be performed. All of these topics will be explored in more depth in later sections of this book.

REVIEW QUESTIONS:

1. What are some of the key revenue sources for restaurants and other foodservice operations?
2. What are some ways to increase revenue in a foodservice operation?
3. What are the key categories of expenses of foodservice operations, and which are considered controllable, and which are considered non-controllable?
4. Dollars spent are important, but why is it also

important to calculate and monitor cost percentages in a foodservice operation?

5. If the performance to budget food expense is over 100% for a particular month, what other data would you want to take a look at when completing your monthly budget analysis?

REVIEW EXERCISES



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A simplified annual P & L statement for The Downtown Bakery is shown below.

Use this chart to answer questions 9–12.

P&L STATEMENT FOR THE DOWNTOWN
BAKERY

Description	Dollars	Percentages
Revenues	\$500,000	-
Food & Beverage Costs	\$185,000	-
Labor Costs	\$200,000	-
Other Costs	\$95,000	-
Total Expense	-	-
Profit	-	-



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Chapter 3 - Sales History and Forecasting

Chapter Outline:

- Importance of forecasting
- Using sales history
- Food, beverage and labor forecasting
- Factors affecting forecasting
- Forecasting in the “big picture”

Learning Objectives:

- Define terms related to sales history and forecasting, such as sales, guest count, check average, etc.
- Explain the importance of sales history data, including the types of data to collect
- Explain the importance of forecasting to effectively managing a foodservice operation.
- Describe the use of a popularity index for

forecasting production.

- List factors that affect forecasting in a foodservice operation.

Key Terms:

- Sales history
- Customer count or covers
- Guest check average
- Food cost percent
- Popularity index
- Beverage cost percent
- Labor Cost percent
- Over/Under-pouring
- Emergency stock
- Table turns

**FORECASTING IN THE FOODSERVICE
OPERATIONS**

The ability to accurately forecast sales and expenses is a necessary skill for a manager or owner to possess. In this chapter, we will look at ways to help you to become more proficient in forecasting both your sales and expenses.

Using the history of past sales in your foodservice operation is critical when attempting to accurately forecast future sales. But, as the famous investing quote states “Past Performance does not guarantee future results”. It is not enough to only look at the past to predict the future. There

are just too many variables that can positively or negatively affect our operation. In this unit, we will look at several ways food service operations can attempt to accurately forecast.

Two important figures to track in a foodservice operation's sales history, in addition to overall sales, are customer count or number of "covers" and check average. Many operations record these figures hourly and use them daily to control both food production and labor usage. These figures are likely part of a computerized sales and accounting system and can be saved for multiple years. Looking back at these records is often the basis for predicting future sales and customer counts. Guest check average is also useful in comparing performance from one time period to another or one unit to another. Guest check average, past customer counts and sales are also critical to developing budgets and other plans for future operations.

Calculating the guest check average is quite simple as long as the proper records are being kept. The check average is just what it says, the average of what each guest spends. It is calculated by dividing the total food and beverage sales by the total number of guests (or covers) in a particular time period. Challenging operators, managers, and even servers to increase the guest check average over a period of time or during a particular meal period can be a way to motivate everyone in the operation to help increase revenue and "grow" the business.

As managers or owners, we must walk a fine line between having enough product or labor, while not having too much. Many companies are now grading individual units based on how much inventory they have on hand, or how much they spent on labor. If you have too much you would be "in the red". Each company would have its own formula

to decide what is too much. It is typically based on how many weeks worth of inventory you have (calculations for this will be covered in a later chapter.) Of course, having a certain “emergency stock” on hand to account for inaccurate forecasts, unexpected crowds (think tour bus), weather emergencies, delays or missed deliveries is usually a good idea, especially before the business is well established. Also, the more remote your property the more emergency stock you would need to keep on hand. Think remote lodge or an oil field on the north slope in Alaska. These facilities would obviously need a great deal of “emergency stock” on hand.

Labor will be judged by how much you spent versus how much revenue you brought in. The productivity of labor should be calculated and evaluated on a regular basis. Setting benchmarks for labor productivity can also help an operator schedule employees based on sales history. Think about food or labor cost percent (from the previous chapter) and the foodservice manager being “graded” on how well these two business ratios are managed.

Why is it important to accurately forecast?

Food – If we order, and prepare too much food it will negatively affect our bottom line. Waste will attribute to a high food cost, and high food cost %. Even worse, it would be overproducing and serving food that is not at its optimum, which will lead to customer dissatisfaction. Portion control also can affect our forecasting. If we over portion, then we can run out of food. If we under portion, then we short-change our customer. Constantly running out of products can ruin the reputation of your food service operation. Many operations use a concept called a “popularity index” to assist in forecasting how much of each menu item to produce given an overall customer count forecast. Example: The

percentage of the total number of entrees sold for each individual entrée is established based on sales history. Then that percentage is applied to the total customer count predicted to be served for a specific meal or day.

A calculation example of a popularity index:

Entree	Average daily number sold this week	Percent of total entrees sold	Number to produce for forecast of 1200 guests
Chicken	400	40%	480 chicken entrees
Fish	200	20%	240 fish entrees
Beef	350	35%	420 beef entrees
Vegetarian	50	5%	60 vegetarian entrees
Total	1000	100%	1200 total entrees

Chapter 3, Figure 1

If the forecast of total customers for a particular day is set at 1200, then the percentage for each entrée is applied to this total forecast (see the right-hand column in chart above.)

Beverage – Accurately forecasting beverage is also vital and in many ways similar to food. There are of course numerous differences as well. Bartenders may “under pour” alcoholic beverages on purpose so they can build up an excess of inventory, and eventually not ring in an item, and pocket the money. They can also intentionally “over pour” in the hopes of getting a bigger tip in return. This will, of course, affect the liquor costs, and liquor cost percent. There are legal ramifications as well. Intentionally over-pouring a beverage can lead to lawsuits if the customer is involved in an accident. Many beverages have expiration dates, and if not used in

time, would need to be discarded. This would, of course, negatively impact our bottom line.

Labor – As the cost of labor keeps rising and there is pressure to increase the minimum wage, there has never been a more important time to control labor. Having too much labor will negatively affect food service operation's profitability. Not having enough labor, will negatively affect the customer service experience. A skilled manager will strive to have just the right amount of labor needed at any given time. Many restaurants will schedule extra servers because they do not cost the restaurant as much as other employees since their wage is low due to receiving tip credit. However, we have to be careful because if we constantly have too many servers on a shift then they will not make as much money, and may eventually leave for a better situation.

FACTORS AFFECTING FORECASTING

Using the past to predict the future – One of the first places to look when forecasting is our sales history along with inventory and production records. What did we do on a particular year, quarter, month, week, day, or meal period compared to the prior year, or years, month, or day, even the prior hour or hours?

Weather

To take things even further, we need to look at weather and how it affects forecasting. It is always a good practice to keep track of the weather with our sales history so we can compare one day or period to another. Typically weather will have a negative effect on your operation. There are of course exceptions to this rule. An example is a hotel that is connected by a walkway to a large office building. If the weather is

bad, the hotel restaurant gets particularly busy because many employees of the neighboring office building choose to eat at the hotel so they did not have to go outside. Another example is a restaurant with outdoor seating. Rain would decrease the number of customers, but beautiful weather would likely increase sales as the restaurant can serve more customers with the increased seating capacity and because the customer chooses this operation for its patio ambiance. It is a good practice to keep notes about the weather as it relates to your menu mix and sales history.

The Economy

Next, we would consider the economy, especially at the local level. Did we lose or gain any new customers? Is our area or region growing? Are there new housing developments, new industry, new businesses coming to our area or are businesses moving out or closing down around us? Do customers have more or less disposable income than they did in the previous year?

City-wide events

It is important to understand what is going on in your market. A city-wide event could change the dynamic of your business. It can directly or indirectly add, or take away business from your establishment. For example, if there is a college or professional sports team and stadium in your area, game day will bring more potential customers. The better the team is performing the more attendees a stadium would have, thus a higher demand for food and beverages. Can you attract them to your business? It will depend on your menu offerings, the time of the game, and many other factors, but it's important to know when events such as this, concerts, festivals, etc. are happening in your local area. In

sports arenas, we would look at how well the team is doing in comparison to attendance.

Competition

What about a new restaurant opening in your area? Competition or lack thereof will also affect your forecasting. Did you gain or lose competition in your market set? A new chain restaurant will have a formula and model based on previous openings. A first-time non-chain restaurant obviously will have no history to rely on and will need to just make a “best guess” on customers for the first couple of weeks or even months. In this case, you will need to have an estimate of your guest check average, and how many times you plan to turn over your tables. Breaking this down into days of the week and meal periods is recommended. You will typically have more table turns on the weekends than you will during the week. The entrance of new competition into your marketplace may be a time to consider some additional initiatives in your operation related to bringing in and retaining customers.

Operation Initiatives

Any new initiatives or programs implemented in your operation (or by a regional or national chain) are likely to affect your customer counts and forecasting. Most will hopefully increase the number of covers and perhaps the average check with the end result being higher sales/increased revenue. Marketing programs and promotional efforts are designed to increase guest counts, so these need to be taken into consideration when forecasting. Price changes, particularly price increases, can cause a decrease in customer counts or even a reduction in average check and should be carefully monitored, so this type of initiative is usually best paired with a marketing or promotional effort. Other

initiatives that can affect forecasting include an improvement in service quality, facility renovations, or “green” initiatives, such as more sustainable sourcing, use of compostable supplies, etc.

Repeat group business

Group business can demonstrate reoccurring trends. In hotels, for instance, there are repeat groups that often develop specific traits that can be used to more accurately forecast their spending habits. Some groups only eat at the hotel restaurant, while others rarely do. Some groups patronize the bar, while other groups do not. By gathering and recording all the information regarding group visits operations can more accurately forecast future visits.

An example of understanding the dynamics of particular groups: One hotel that I worked at was the main hotel for the Arnold Schwarzenegger sports festival. The biggest names in bodybuilding and powerlifting stayed there during this week-long event. The restaurant could barely keep enough chicken breast and sweet potatoes in the house. The amount of food consumed during that week was unreal. The chef carefully forecasted based on previous years in an attempt to have enough food in house. On the last day of the event, when most athletes already competed the menu changed again. Bodybuilders that were eating clean and cutting weight for weeks, and months now ate pizza, burgers, and ice cream with reckless abandon. If the chef failed to acknowledge the difference in the quantity, and types of foods consumed by these athletes vs a typical group he would have some upset hungry athletes. Contributed by Mr. George Ruth

Segment focus: On-site foodservice

How does all this forecasting information apply to on-site

foodservice segments of the industry? The basic principles are the same. Sales histories need to be maintained and food, beverages and labor all need to be forecasted. Since the customer base may be more consistent, things like labor hours scheduled are often more consistent as well. In fact, many operations have unionized employees who are guaranteed a set schedule and a certain number of work hours each pay period. Segments in education such as K-12 and college and university foodservice operations need to look at school enrollments, the academic calendar, current participation rates, and even the exact menu offering of the day could change the forecast for food. Think pizza versus meatloaf (if it's even served anymore.) If students don't like a particular item they may elect to brown bag their meal or visit the convenience store on the college campus. The affluence of a school district and its residents may also affect the participation rate from one school to another. School policies can also affect forecasting. For example, does the school permit students to go off-campus to eat during lunch?

A foodservice operation housed within a corporation (business and industry dining) may also look more at participation rates (customer counts) instead of dollar amounts of revenue. Often corporations want to encourage their employees to "stay on campus" or in the building to reduce the amount of time workers are away from their desks. Health care foodservice operations use the "patient census" as the basis for forecasting patient meals, along with percentages typically on special diets, etc. Employee dining operations need to forecast for 24/7 availability of some sort of foodservice. Other on-site operations such as corrections, sporting venues, and convention centers each have their own considerations for forecasting, but on the whole, accurate

forecasting is vitally important for all types of foodservice operations

Forecasting in the “big picture”

The better the forecasting, the more efficient and effective the foodservice operation. Whether it be predicting revenue, expenses, amount of food and beverage needed, or working hours to be scheduled. Accurate forecasting also means more efficient production schedules, improved purchasing, maintenance of proper inventory levels and inventory turnover. Budgets are more accurate if long term forecasting is on target and this can lead to more dollars available for projects such as facility maintenance and growth of the operation. If a foodservice operation is effective at forecasting, profits can increase and the customer likely also gains from lower menu prices and better service. This chapter is just a brief introduction to the importance of forecasting and some of the factors that must be considered. Students of foodservice management will most certainly benefit from further study of forecasting methods, models and strategies.

REVIEW EXERCISE 1



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BETH EGAN

REVIEW EXERCISE 2



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Section 2 - Menus and Recipes

Chapter 4 - Menus

Chapter Outline:

- Importance of the menu
- Types and categories of menus
- Advantages and disadvantages of different types of menus
- Principles of menu planning and factors to consider
- Steps in planning menus
- Menu psychology
- Accuracy in menus

Learning Objectives:

- Recognize the importance and use of menus as a management control tool
- Describe categories and characteristics of different types of menus

- List advantages and disadvantages of cycle menus, standard (static) menus, and daily menus
- Describe effective menu planning principles
- Describe various factors to consider when planning menus for customers in a foodservice operation's target market
- Order the steps in menu planning from start to finish
- Recognize examples of menu psychology common in the industry
- Recall "truth in menu" and menu labeling guidelines for writing menus

Key Terms:

- **Dietary Guidelines for Americans**
- **Cycle menu**
- **Daily (or single-use) menu**
- **Static menu**
- **Theme menu**
- **Sociocultural factors**
- **Aesthetics**
- **Cross-utilization**
- **"Truth in menu"**
- **Menu labeling**
- **Menu psychology**

IMPORTANCE OF THE MENU

You are a foodservice manager. What is the first thing that comes to mind when you hear the following: appetizers, entrees, desserts, daily specials, ethnic cuisine, fine or casual dining, pricing psychology, trends, cut food costs, reduce your staff, dietary guidelines, government regulations, sustainability, special diets, food delivery, marketing, equipment, customer demand?

Each of the above words probably brought quite a few different thoughts to mind. One word, however, affects—and is affected by—every term on the list: **THE MENU**.

The importance of the menu to a foodservice operation cannot be emphasized too often or too much. The fact that it is an early topic in this book underscores its importance for those studying the management of foodservice operations. The menu is also called “the driver” of a foodservice operation. This descriptive term indicates that every part of a foodservice operation is affected by the menu and stresses how the menu is a managerial tool for controlling many aspects of a foodservice operation. As you learn more about menus and menu planning, keep in mind menus from your favorite restaurants or your recent meals in other types of foodservice operations.

TYPES AND CATEGORIES OF MENUS

Menus can be categorized in a variety of different ways and there are different types of menus, which are often associated

with particular types of foodservice operations. A classic way to categorize menus is by how often they repeat.

Static menus are those that basically stay the same every day and are most typically used in quick service to upscale casual restaurants. These types of menus may be presented on a menu board or in some type of printed format, sometimes laminated so it is easily cleaned, that is handed to the customer. Typical sections of a lunch or dinner static menu include appetizers, salads, entrees (often further divided), sides, desserts and beverages. Choices may be limited, as they are in some quick service, such as McDonalds or Five Guys, and quick casual restaurants, such as Panera and Chipotle, or choices may be extensive requiring a menu that resembles a small book, such as the Cheesecake Factory.

Cycle menus are most often used in non-commercial foodservice operations that serve the same group of customers every day, such as corporate dining (business and industry), healthcare, schools, and long-term care or CCRCs. A cycle menu follows a particular pattern designed to meet the needs of the operations customers and repeats on a regular basis. The length of the cycle should be set with the customer in mind. For instance, a hospital can typically use a shorter cycle menu, perhaps five to seven days, for patients, since most do not stay in the facility for many days. However, a foodservice operation in a continuing care retirement community may need a cycle as long as six weeks since customers may be eating in the CCRC dining room on a daily basis. Cycle menus are often planned seasonally so an operation might have a spring, summer, and fall/winter cycle.

Daily (or single-use) menus change on a daily basis or may be planned for a special event with a one-time use. Daily menus are often used in fine dining or for foodservice

operations that feature locally sourced products, which are available in the market on a given day. Alice Water's Chez Panisse restaurant uses a daily menu to highlight seasonal and locally available foods with a "farm to table" approach. Single-use menus are planned for catered events like banquets or parties, and are also used in many operations for "daily specials."

Other ways to categorize menus

Menus can also be categorized in a variety of other ways including any of the following:

Function of the menu – such as a tasting menu, catering, hotel room service, dessert, wine or drinks

Meal/Time Period – such as breakfast, lunch, happy hour, or dinner

Style of service – such as American, French (table side cooking), or Russian (platter service)

Pricing styles – such as a la carte (each item is individually priced), table d'hôte (a selection of complete meals offered at set prices), prix fixe (one price for the entire menu), and most commonly seen in U.S. restaurants, a combination of pricing styles to best cater to the target customer of the operation.

Amount of selection – selective (customer has many choices typical of a family or casual restaurant), non-selective (no choice as with many tasting menus, hospital special diet menus, or sit-down banquets), or limited or semi-selective (typical of small operations, fine dining or themed restaurants)

ADVANTAGES AND DISADVANTAGES OF VARIOUS TYPES OF MENUS

These different categories overlap among each other and types of foodservice operations, both commercial and non-commercial, and offer both advantages and disadvantages to management and control. For example, static menus would be easiest for forecasting, purchasing and labor scheduling since they are the same every day, but cycle menus have those same advantages over daily menus. However, it can take restaurant chains a year or more to plan or make a change to a static menu. Daily menus are the most flexible and can be easily changed to adjust to product or market price changes. Static, and to an extent cycle menu, offer the customer a predictable dining experience, but daily menus offer a new dining adventure with every visit to the foodservice operation. Of course, foodservice operations often combine elements of these different types of menus to gain the advantages offered by each. For example: many restaurants using a static menu offer daily specials or features, which give some flexibility to offer menu items that are seasonal, or trendy, or use product that needs to be sold and not wasted.

MENU PLANNING PRINCIPLES AND FACTORS TO CONSIDER

Menu planning principles include balance, nutritional quality, aesthetics, and variety, including color, texture, flavors, shapes and sizes of food. The equipment and personnel available to produce and serve the menu are also important considerations in planning the menu. Along with all of these considerations, the effective foodservice manager

also has to consider costs, production and other management issues.

Factors affecting menu planning can be organized into two main areas: **customer satisfaction** and **management decisions**. Both of these areas must be considered when menus are planned. Having a menu without customers is like having 1000 acres of land for sale—in Antarctica. At the same time, a menu with items that cannot be produced at an acceptable cost will simply put a foodservice operation out of business or drive a noncommercial operation into the red. Most foodservice directors know that this could mean the end of their job.

Four factors related to customer satisfaction include **sociocultural background**, **food habits and preferences**, **nutritional influence**, and **aesthetics**.

Customer satisfaction. Knowing your customers (and your potential customers) is obviously a key to planning and designing menus. Think about *yourself* as the customer. What are some of the reasons you like or dislike a menu? You probably have certain preferences—certain foods and combinations of foods—from your experiences growing up. Many of us only like the way mom makes spaghetti sauce or the way dad grills the steaks; or we think that grandma’s sugar cookies are definitely the best. We almost can’t eat tomato soup without grilled cheese sandwiches or meatloaf without mashed potatoes AND gravy. Collecting some market research on our customers and studying food and menu trends can help menu planners to keep the menu fresh and satisfying for our customers. Always keep the **sociocultural background** and **food habits and preferences** of the customer in mind when planning menus.

The influence of nutrition and government regulations

Increasingly, our knowledge of nutrition is influencing the way we eat. The U.S. government issues Dietary Guidelines with recommendations about how people should eat. Many nutrition trends, such as smaller portions, ethnic foods, and gluten-free diets also affect menu planning. Think about the new food products that have become available in your grocery store or your local restaurants in the last year. Many of these new items have some nutritional claim that has brought them to the store shelf or the plate. Noncommercial foodservice operations, particularly in schools and in health care settings, have a nutrition mandate from both the government and the customer. When it comes to feeding children and the elderly, many other different issues surface. Some of these issues involve foods and surroundings unfamiliar to kids, and the ability of older patients to chew and swallow. The list goes on. Sometimes customers may be misinformed about nutrition; then we have the bigger job of educating them, as well as trying to feed them a well-balanced, healthy diet. In some settings, the menu also serves as a nutrition education tool.

A few key points to remember for the non-commercial sector:

- A “textbook” approach to menu planning is not enough. As a foodservice or dietetic professional, you have to recognize those unique factors that significantly affect each individual consumer.
- You must design your menus to ensure a balanced, nutritious diet that reflects more of the recipient’s values than your own. The introduction of unusual

or unfamiliar foods may cause a customer to lose interest in eating altogether.

- A noncommercial foodservice menu can be used to help a consumer adjust to a new, unfamiliar regimen. But this educational function usually requires an increased menu variety with a greater food production effort and perhaps higher costs.

Aesthetics

Not to be forgotten is the issue of aesthetics. You've heard it many times before: we *do* eat with our eyes. How our food is presented, along with texture, consistency, color, shape, and the preparation method, influences how we feel and what we think about a menu. It can even influence our appetite and our interest in eating.

MANAGEMENT DECISIONS

When the menu is thought of as a management tool, a number of other factors related to menu planning enter the picture. To plan a good menu you need to consider the following factors:

- food cost and budgetary goals of the foodservice operation
- production capability, including available equipment and personnel
- type of service and food delivery system
- availability of foods
- the philosophy of the business and foodservice

operation

Each one of us has probably had at least one experience in our lives when the menu planner failed to consider all of the above factors. One common to many may be Thanksgiving dinner—either at home or in your foodservice operation—and production capability. The oven(s) is full of roasting turkey and perhaps the bread stuffing has been squeezed into the side. Now, what will we do with the baked sweet potatoes, the baked corn, *and* the green bean casserole, plus the pies and rolls that need to be baked? The experienced and wise menu planner considers production capability and adjusts the menu accordingly. Perhaps the sweet potatoes, corn, and green beans can all be steamed instead of baked, and the pies and rolls can be baked ahead of the turkey.

Another effective menu planning principle to consider is called cross-utilization. This “best practice” involves using one food product in multiple ways. Let’s consider a standard chicken breast as an example. A teriyaki-glazed chicken breast could be a center of the plate item, while a home-style chicken noodle soup, a Napa almond chicken salad, and buffalo chicken pizza could also be menu offerings. This allows the operation to purchase just one product, saving time and reducing costs, while offering a large variety of different dishes. More expensive and more perishable food items, such as fresh meats, poultry, fish and produce items, should be cross-utilized as much as possible when menus are planned to reduce waste and better control costs.

Be sure to think carefully and keep in mind the capabilities of your operation, your production capacity, food availability, employee skills and financial goals when planning menus.

SUGGESTED STEPS IN MENU PLANNING

Once it's time to actually plan the menu, the conventional wisdom is to start with a menu pattern that fits your operation and then work through breakfast, then lunch, then dinner. For instance, if you are planning a lunch menu, will you have soups, salads, sandwiches, pizzas, full platters, sides, desserts, and beverages? How many selections will you offer in each of your chosen menu categories? Will you have daily specials? Are there any other special options you might want to offer your customers?

Once you establish your menu categories, it is recommended to plan the main entrees (platters) first, then the sides that go with the entrees. Other entrees, such as sandwiches and entrée salads are planned next, followed by soups, appetizers, additional sides, and any planned daily specials. Desserts and beverages finish off the categories. This sequence of working through the menu categories helps make sure the most expensive dishes are chosen first so the lower-priced items can better fit in the plan and complement the choices offered. Typically the more limited the menu choices, the easier it is to control costs, so it's not surprising that many successful operations serve only pizza and a few Italian selections while others specialize in burgers and fries, or even just ice cream and frozen treats with a few sandwiches. The menu planner can consider factors such as cross-utilization of products, balance, variety, customer preferences and trends, as well as all those management factors for the entire menu mix. In a later chapter another management tool, menu engineering, a way to analyze the

menu offerings and their popularity and profitability, will be discussed.

MENU PSYCHOLOGY

Once the menu is planned, it is typically published in one form or another. This can be anything from a simple menu board or a printed sheet of paper that is easily changed to a lengthy, multiple page laminated “book” that might be used for 18–24 months before any changes are made. Menus are often published on an operation’s website, shared on social media, and reviewed by customers on user-generated content websites, such as TripAdvisor and Yelp. When menus are published, operators have the opportunity to use “menu psychology” in their menu design to try to influence customer choices and purchases. Increasing sales by raising the average check of a restaurant or overall participation or promoting healthier choices for an onsite foodservice operation are typically the overall goals of using menu psychology.

Menu psychology involves using a variety of techniques typically based on research about how people read a menu and make choices about spending money. Some examples of menu psychology in menu design include:

- placing menu items where the customer’s eyes tend to go first or last (see the URL links below),
- using graphics such as boxes and borders to draw attention to menu items,
- displaying prices in a way to encourage customer spending, or

- not using dollar signs, leader dots, or column pricing (where all prices are lined up), which can cause guests to spend less, and
- using descriptive terms for menu items to encourage sales.

[Menu Font Style Article](#)

[Eye Movement Article](#)

TRUTH IN MENU BEST PRACTICES

Menu writers and foodservice operators often use detailed merchandising terms to describe menu items in the hopes of increasing sales of those menu items or commanding higher prices. Using these expressive sales tactics is fine, as long as the terms and descriptions used are true.

“Truth in Menu” also referred to as “accuracy in menus” is a best practice in planning and sharing menus. Though there is no federal law regarding accuracy in menus, in general, there are regulations addressing this issue in various states around the country. Accuracy in menus addresses any and all of the following:

- quantity
- quality
- price
- brand names
- production identification
- points of origin
- merchandizing terms

- food preparation
- verbal and visual presentation, and
- dietary & nutritional concerns

While operators are certainly allowed to merchandize on their menus to encourage sales, lying about the food being offered is not acceptable. Of course, there will always be those operators who stretch the truth with items like mile high meatloaf, or man-hole size nacho platter, and there are items such as English muffins and French toast that obviously aren't sourced from England or France.

MENU LABELING AND CONSUMER ADVISORY REGULATIONS

There are some federal rules and regulations that all foodservice operations must be aware of and follow.

Retail Food Establishment Consumer Advisory Requirements

If meat, fish, poultry, shellfish or eggs are served raw, undercooked, or cooked to order, a disclosure identifying the foods, plus a reminder in 11 pt type, must appear on the menu or in a written disclosure declaring that eating the specified types of animal products as raw or undercooked “may increase your risk of food-borne illness”. (1)

Food Labeling Rules

In 2014, the U.S. Food and Drug Administration (FDA) issued food labeling rules for restaurants and similar retail food establishments. The summary of the rule states:

“To implement the nutrition labeling provisions of the Patient Protection and Affordable Care Act of 2010

(Affordable Care Act or ACA), the Food and Drug Administration (FDA or we) is requiring disclosure of certain nutrition information for standard menu items in certain restaurants and retail food establishments. The ACA, in part, amended the Federal Food, Drug, and Cosmetic Act (the FD&C Act), among other things, to require restaurants and similar retail food establishments that are part of a chain with 20 or more locations doing business under the same name and offering for sale substantially the same menu items to provide calorie and other nutrition information for standard menu items, including food on display and self-service food. Under provisions of the ACA, restaurants and similar retail food establishments not otherwise covered by the law may elect to become subject to these Federal requirements by registering every other year with FDA. Providing accurate, clear, and consistent nutrition information, including the calorie content of foods, in restaurants and similar retail food establishments will make such nutrition information available to consumers in a direct and accessible manner to enable consumers to make informed and healthful dietary choices.”

(2)

CONCLUSION

Menu planning is a learned skill improved through practice. Effective menus are critical to the financial health of a foodservice operation and serve as a “driver” of the business. Their importance to a successful foodservice operation can not be overstated.

References:

- (1) [Truth in Menus: Managing Hospitality Risk](#). Retrieved

from: https://www.ultrariskadvisors.com/wp-content/uploads/2012/07/MHR_Menus.pdf

(2) [Food Labeling: Nutrition Labeling of Standard Menu Items in Restaurants and Similar Retail Food Establishments](https://www.federalregister.gov/documents/2014/12/01/2014-27833/food-labeling-nutrition-labeling-of-standard-menu-items-in-restaurants-and-similar-retail-food), (2014, Dec. 1). Retrieved from: <https://www.federalregister.gov/documents/2014/12/01/2014-27833/food-labeling-nutrition-labeling-of-standard-menu-items-in-restaurants-and-similar-retail-food>

REVIEW EXERCISE 1



An interactive or media element has been excluded from this version of the text. You can view it online here:

<https://psu.pb.unizin.org/hmd329/?p=78>

REVIEW EXERCISE 2



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<https://psu.pb.unizin.org/hmd329/?p=78>

REVIEW EXERCISE 3



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<https://psu.pb.unizin.org/hmd329/?p=78>

Chapter 5 - Process HACCP for Recipes

Chapter Outline:

- Why HACCP?
- Retail foodservice operations that should implement HACCP
- Food safety hazards
- HACCP as a food safety management system
- HACCP principles for use in retail foodservice operations
- Process HACCP

Learning Objectives:

- Identify TCS (potentially hazardous) foods that require time and temperature control for safety.
- Use HACCP processes to identify critical control points and limits in the foodservice system
- Describe how to use process HACCP to

incorporate critical control points and limits in recipes.

Key Terms:

- **HACCP – Hazard Analysis Critical Control Points**
- **TCS foods (time temperature control for safety)**
- **Critical control points (CCPs)**
- **Critical limits**

The Food Code clearly establishes that the implementation of HACCP at retail (foodservice operations) should be a voluntary effort by industry.

If, however, you plan on conducting certain specialized processes that carry a considerably high risk, you should consult your regulatory authority to see if you are required to have a HACCP plan. Examples of specialized processes covered in Chapter 3 of the Food Code include formulating a food so that it is not potentially hazardous or using performance standards to control food safety.

Federal performance standards define public food safety expectations for a product usually in terms of the number of disease-causing microorganisms that need to be destroyed through a process. For example, instead of cooking chicken to 165 °F for 15 seconds as dictated in the Food Code, performance standards allow you to use a different combination of time and temperature as long as the same level of public safety is achieved. The use of performance standards allows you to use innovative approaches in producing safe products.

What are the retail and food service industries?

Unlike many food processing operations, the retail and food service industries are not easily defined by specific commodities or conditions. These establishments share the following characteristics:

- These industries have a wide range of employee resources, from highly trained executive chefs to entry level front line employees. Employees may have a broad range of education levels and communication skills. It may be difficult to conduct in-house training and maintain a trained staff because employees may speak different languages or there may be high employee turnover.
- Many are start-up businesses operating without the benefit of a large corporate support structure. Having a relatively low-profit margin means they may have less money to work with than other segments of the food industry.
- There is an almost endless number of production techniques, products, menu items, and ingredients used. Suppliers, ingredients, menu items, and specifications may change frequently.

What are food safety hazards?

Hazards are biological, physical, or chemical properties that may cause food to be unsafe for human consumption. The goal of a food safety management system is to control certain factors that lead to out-of-control hazards. Because many foods are agricultural products and have started their journey to your door as animals and plants raised in the environment,

they may contain microscopic organisms. Some of these organisms are pathogens, which means that under the right conditions and in the right numbers, they can make someone who eats them sick. Raw animal foods such as meat, poultry, fish, shellfish, and eggs often carry bacteria, viruses, or parasites that can be harmful to humans. (These types of foods have been labels as TCS, time and temperature control for safety, foods.

The use of HACCP as a food safety management system

Since the 1960s, food safety professionals have recognized the importance of HACCP principles for controlling risk factors that directly contribute to foodborne illness. The principles of HACCP embody the concept of active managerial control by encouraging participation in a system that ensures foodborne illness risk factors are controlled.

The success of a HACCP program (or plan) is dependent upon both facilities and people. The facilities and equipment should be designed to facilitate safe food preparation and handling practices by employees. Furthermore, the FDA recommends that managers and employees be properly motivated and trained if a HACCP program is to successfully reduce the occurrence of foodborne illness risk factors. Instilling food workers and management commitment and dealing with problems like high employee turnover and communication barriers should be considered when designing a food safety management system based on HACCP principles.

Properly implemented, a food safety management system based on HACCP principles may offer you the following other advantages:

- Reduction in product loss
- Increase in product quality
- Better control of product inventory
- Consistency in product preparation
- Increase in profit
- Increase in employee awareness and participation in food safety

How can HACCP principles be used in retail and food service operations?

Within the retail and food service industries, the implementation of HACCP principles varies as much as the products produced. The resources available to help you identify and control risk factors common to your operation may also be limited. Like many other quality assurance programs, the principles of HACCP provide a common-sense approach to identifying and controlling risk factors. Consequently, many food safety management systems at the retail level incorporate some, if not all, of the principles of HACCP. While a complete HACCP system is ideal, many different types of food safety management systems may be implemented to control risk factors. It is also important to recognize that HACCP has no single correct application.

WHAT ARE THE SEVEN HACCP PRINCIPLES?

1. Perform a Hazard Analysis. The first principle is about understanding the operation and determining what food safety hazards are likely to occur. The manager needs to understand how the people, equipment, methods, and foods all affect each other. The processes and procedures used to

prepare the food are also considered. This usually involves defining the operational steps (receiving, storage, preparation, cooking, etc.) that occur as food enters and moves through the operation. Additionally, this step involves determining the control measures that can be used to eliminate, prevent, or reduce food safety hazards. Control measures include such activities as an implementation of employee health policies to restrict or exclude ill employees and proper handwashing.

2. Decide on the Critical Control Points (CCPs). Once the control measures in principle #1 are determined, it is necessary to identify which of the control measures are absolutely essential to ensuring safe food. An operational step where control can be applied and is essential for ensuring that a food safety hazard is eliminated, prevented or reduced to an acceptable level is a critical control point (CCP). It is important to know that not all steps are CCPs. Generally, there are only a few CCPs in each food preparation process because CCPs involve only those steps that are absolutely essential to food safety.

3. Determine the Critical Limits. Each CCP must have boundaries that define safety. Critical limits are the parameters that must be achieved to control a food safety hazard. For example, when cooking pork chops, the Food Code sets the critical limit at 145 °F for 15 seconds. When critical limits are not met, the food may not be safe. Critical limits are measurable and observable.

4. Establish Procedures to Monitor CCPs. Once CCPs and critical limits have been determined, someone needs to keep track of the CCPs as the food flows through the operation. Monitoring involves making direct observations

or measurements to see that the CCPs are kept under control by adhering to the established critical limits.

5. Establish Corrective Actions. While monitoring CCPs, occasionally the process or procedure will fail to meet the established critical limits. This step establishes a plan for what happens when a critical limit has not been met at a CCP. The operator decides what the actions will be, communicates those actions to the employees, and trains them in making the right decisions.

6. Establish Verification Procedures. This principle is about making sure that the system is scientifically-sound to effectively control the hazards. Designated individuals like the manager periodically make observations of employees' monitoring activities, calibrate equipment and temperature measuring devices, review records/actions, and discuss procedures with the employees.

7. Establish a Record Keeping System. There are certain written records or kinds of documentation that are needed in order to verify that the system is working. These records will normally involve the HACCP plan itself and any monitoring, corrective action, or calibration records produced in the operation as a part of the HACCP system.

FDA endorses the voluntary implementation of food safety management systems in retail and food service establishments. Combined with good basic sanitation, a solid employee training program, and other prerequisite programs, HACCP can provide you and your employees a complete food safety management system. The goal in applying HACCP principles in retail and food service is to have you, the operator, take purposeful actions to ensure safe food. You and your regulatory authority have a common objective in mind – providing safe, quality food to consumers.

Managing food safety should be as fully integrated into your operation as those actions that you might take to open in the morning, ensure a profit, or manage cash flow. By putting in place an active, ongoing system, made up of actions intended to create the desired outcome, you can achieve your goal of improving food safety. The application of the HACCP principles provides one system that can help you accomplish that goal.

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Check with your local regulatory agency

The FDA Food Code identifies TCS foods and temperatures necessary for keeping food safe. These include receiving and cold holding temperatures, minimum internal cooking temperatures for a variety of foods and cooking methods, hot holding and cooling temperatures. The federal food code is based on scientific evidence and recommended for adoption by states in the U.S., however exact temperatures can vary by states and health departments, so be sure to check the specific regulations in your area.

APPLYING HACCP PRINCIPLES TO RETAIL AND FOOD SERVICE

What is the process approach?

Since the early 1980s, retail and food service operators and regulators have been exploring the use of HACCP in restaurants, grocery stores, and other retail food establishments. Most of this exploration has centered on the question of how to stay true to the definitions of HACCP yet still make the principles useful to an industry that encompasses a very broad range of conditions. Through this

exploration, HACCP principles have been slightly modified to apply to the varied operations found at retail.

When conducting the hazard analysis, food manufacturers usually use food commodities as an organizational tool and follow the flow of one product. This is a very useful approach for producers or processors since they are usually handling one product at a time. By contrast, in retail and

food service operations, foods of all types are worked together to produce the final product. This makes a different approach to the hazard analysis necessary. Conducting the hazard analysis by using the food preparation processes common to a specific operation is often more efficient and useful for retail and food service operators. This is called the “Process Approach” to HACCP.

The process approach can best be described as dividing the many foods flows in an establishment into broad categories based on activities or stages in the flow of food through your establishment, then analyzing the hazards, and placing managerial controls on each grouping.

What is the flow of food?

The flow of food in a retail or food service establishment is the path that food follows from receiving through service or sale to the consumer. Several activities or stages make up the flow of food and are called operational steps. Examples of operational steps include receiving, storing, preparing, cooking, cooling, reheating, holding, assembling, packaging, serving, and selling. Keep in mind that the terminology used for operational steps may differ between food service and retail food store operations.

What are the three food preparation processes most often used in retail and food service establishments?

Most food items produced in a retail or food service

establishment can be categorized into one of three preparation processes based on the number of times the food passes through the temperature danger zone between 41 °F to 135 °F:

- **Process 1:** Food Preparation with No Cook Step

Example flow: Receive – Store – Prepare – Hold – Serve

(other food flows are included in this process, but there is no cook step to destroy pathogens)

- **Process 2:** Preparation for Same Day Service

Example flow: Receive – Store – Prepare – Cook – Hold – Serve

(other food flows are included in this process, but there is only one trip through the temperature danger zone)

- **Process 3:** Complex Food Preparation

Example flow: Receive – Store – Prepare – Cook – Cool – Reheat – Hot Hold – Serve

(other food flows are included in this process, but there are always two or more complete trips through the temperature danger zone)



Figure 5.1 – A graph with 3 arrows depict 3 separate trips through the danger zone. Image from the [Food and Drug Administration](#) (April 2006).

Long description: A graph with Y axis that goes from 41 degrees Fahrenheit to 135 degrees. 3 arrows are shown. The left arrow is labeled No cook and has a zero above it. It starts on the X axis, goes less than halfway up, then curves and comes back down to the X axis. The middle arrow is labeled Same Day and starts on the X axis and goes straight up and off the graph. The number 1 is beside it. The arrow on the right is composed of 3 separate arrows labeled 1, 2 and 3. Arrow 1 goes straight up and off the graph. Arrow 2 starts at the top where arrow 1 ended and comes down diagonally to the X axis. Arrow 3 is dashed and starts where arrow 2 ended. It goes diagonally up and off the graph.

End long description.

A summary of the three food preparation processes in terms of number of times through the temperature danger zone can

be depicted in a Danger Zone diagram. Note that while foods produced using process 1 may *enter* the danger zone, they are neither cooked to destroy pathogens, nor are they hot held. Foods that go through the danger zone only once are classified as Same Day Service, while foods that go through more than once are classified as Complex food preparation.

The three food preparation processes conducted in retail and food service establishments are not intended to be all-inclusive. For instance, quick service facilities may have “cook and serve” processes specific to their operation. These processes are likely to be different from the “Same Day Service” preparation processes in full-service restaurants since many of their foods are generally cooked and hot held before service. In addition, in retail food stores, operational steps such as packaging and assembly may be included in all of the food preparation processes prior to being sold to the consumer.

It is also very common for a retail or food service operator to have a single menu item (i.e. chicken salad sandwich) that is created by combining several components produced using more than one kind of food preparation process. It is important for you to remember that even though variations of the three food preparation process flows are common, the control measures – actions or activities that can be used to prevent, eliminate, or reduce food safety hazards – to be implemented in each process will generally be the same based on the number of times the food goes through the temperature danger zone.

THE HAZARD ANALYSIS

In the “process approach” to HACCP, conducting a hazard

analysis on individual food items is time and labor-intensive and is generally unnecessary. Identifying and controlling the hazards in each food preparation process listed above achieves the same control of risk factors as preparing a HACCP plan for each individual product.

Example: An establishment has dozens of food items (including baked chicken and meatloaf) in the “Preparation for Same Day Service” category. Each of the food items may have unique hazards (See Annex 3, Table 1), but regardless of their individual hazards, control via proper cooking and holding will generally ensure the safety of all of the foods in this category. An illustration of this concept follows:

- Even though they have unique hazards, baked chicken and meatloaf are items frequently grouped in the “Same Day Service” category (Process 2).
- *Salmonella* and *Campylobacter*, as well as spore-formers, such as *Bacillus cereus* and *Clostridium perfringens*, are significant biological hazards in chicken.
- Significant biological hazards in meatloaf include *Salmonella*, *E. coli* O157:H7,
 - *Bacillus cereus*, and *Clostridium perfringens*.
- Despite their different hazards, the control measure used to kill pathogens in both these products should be cooking to the proper temperature.
- Additionally, if the products are held after cooking, then proper hot holding or time control is also recommended to prevent the outgrowth of spore-formers that are not destroyed by cooking.

As with product-specific HACCP, critical limits for cooking remain specific to each food item in the process. In the scenario described above, the cooking step for chicken requires a final internal temperature of 165 °F for 15 seconds to control the pathogen load for *Salmonella*. Meatloaf, on the other hand, is a ground beef product and requires a final internal temperature of 155 °F for 15 seconds to control the pathogen load for both *Salmonella* and *E. coli* O157:H7. Note that there are some operational steps, such as refrigerated storage or hot holding, that have critical limits that apply to all foods.

The following table further illustrates this concept. Note that the only unique control measure applies to the critical limit of the cooking step for each of the products. Other food safety hazards and control measures may exist:

Example products	Meatloaf	Chicken
Example Biological Hazards	Salmonella	Salmonella
Example Biological Hazards	E. coli O157:H7	Campylobacter
Example Biological Hazards	Clostridium perfringens	Clostridium perfringens
Example Biological Hazards	Bacillus cereus	Bacillus cereus
Example Biological Hazards	Various fecal-oral route pathogens	Various fecal-oral route pathogens
Example Control Measures (there may be others)	Cooking at 155 °F for 15 seconds	Cooking at 165 °F for 15 seconds
Example Control Measures (there may be others)	Refrigeration 41 °F or below	Refrigeration 41 °F or below
Example Control Measures (there may be others)	Hot Holding at 135 °F or above OR Time Control for 4 hours or less	Hot Holding at 135 °F or above OR Time Control for 4 hours or less
Example Control Measures (there may be others)	No bare hand contact with RTE food, proper handwashing, exclusion/restriction of ill employees	No bare hand contact with RTE food, proper handwashing, exclusion/restriction of ill employees

Chapter 5, Figure 2

DETERMINING RISK FACTORS IN PROCESS FLOWS

Several of the most common risk factors associated with each food preparation process are discussed below. Remember that

while you should generally focus your food safety management system on these risk factors, there may be other risk factors unique to your operation or process that are not listed here. You should evaluate your operation and the food preparation processes you use independently.

In developing your food safety management system, keep in mind that active managerial control of risk factors common to each process can be achieved by either designating certain operational steps as critical control points (CCPs) or by implementing prerequisite programs. This will be explained in more detail in Chapter 3. The HACCP plans that you will develop using this Manual, in combination with prerequisite programs, will constitute a complete food safety management system.

Facility-wide considerations in order to have active managerial control over personal hygiene and cross-contamination, you must implement certain control measures in all phases of your operation. All of the following control measures should be implemented regardless of the food preparation process used:

- **No bare hand contact with ready-to-eat foods (or use of an approved, alternative procedure)** to help prevent the transfer of viruses, bacteria, or parasites from hands
- **Proper handwashing** to help prevent the transfer of viruses, bacteria, or parasites from hands to food
- **Restriction or exclusion of ill employees** to help prevent the transfer of viruses, bacteria, or parasites from hands to food
- **Prevention of cross-contamination** of ready-to-eat food or clean and sanitized food-contact surfaces with soiled cutting boards, utensils, aprons, etc. or raw animal foods

Food Preparation Process 1 – Food Preparation with No Cook Step

Example Flow: RECEIVE – STORE – PREPARE – HOLD – SERVE

Several food flows are represented by this particular process. Many of these food flows are common to both retail food stores and food service facilities, while others only apply to retail operations. Raw, ready-to-eat food like sashimi, raw oysters, and salads are grouped in this category. Components of these foods are received raw and will not be cooked prior to consumption.

Foods cooked at the processing level but that undergo no further cooking at the retail level before being consumed are also represented in this category. Examples of these kinds of foods are deli meats, cheeses, and other pasteurized products. In addition, foods that are received and sold raw but are to be cooked by the consumer after purchase, i.e. hamburger meat, chicken, and steaks, are also included in this category.

All the foods in this category lack a kill (cook) step *while at the retail or food service establishment*. In other words, there is no complete trip made through the danger zone for the purpose of destroying pathogens. You can ensure that the food received in your establishment is as safe as possible by requiring purchase specifications. Without a kill step to destroy pathogens, your primary responsibility will be to prevent further contamination by ensuring that your employees follow good hygienic practices.

Cross-contamination must be prevented by properly storing your products away from raw animal foods and soiled equipment and utensils. Foodborne illness may result from ready-to-eat food being held at unsafe temperatures for long periods of time due to the outgrowth of bacteria.

In addition to the facility-wide considerations, a food safety management system involving this food preparation process should focus on ensuring that you have active managerial control over the following:

- **Cold holding or using time alone** to inhibit bacterial growth and toxin production
- **Food source** (especially for shellfish due to concerns with viruses, natural toxins, and *Vibrio* and for certain marine finfish intended for raw consumption due to concerns with ciguatera toxin) (See Annex 2, Table 1)
- **Receiving temperatures** (especially certain species of marine finfish due to concerns with scombrototoxin) (See Annex 2, Table 2)
- **Date marking** of ready-to-eat PHF held for more than 24 hours to control the growth of *Listeria monocytogenes*
- **Freezing** certain species of fish intended for raw consumption due to parasite concerns (See Annex 2, Table 3)
- **Cooling** from ambient temperature to prevent the outgrowth of spore-forming or toxin-forming bacteria

Food Preparation Process 2 – Preparation for Same Day Service

Example Flow: RECEIVE – STORE – PREPARE – COOK – HOLD – SERVE

In this food preparation process, food passes through the

danger zone only once in the retail or food service establishment before it is served or sold to the consumer. Food is usually cooked and held hot until served, i.e. fried chicken, but can also be cooked and served immediately. In addition to the facility-wide considerations, a food safety management system involving this food preparation process should focus on ensuring that you have active managerial control over the following:

- **Cooking** to destroy bacteria and parasites
- **Hot holding or using time alone** to prevent the outgrowth of spore-forming bacteria

Approved food source, proper receiving temperatures, and proper cold holding prior to cooking are also important if dealing with certain marine finfish due to concerns with ciguatera toxin and scombrototoxin. Consult Annex 2 of this Manual for special considerations related to seafood.

Food Preparation Process 3 – Complex Food Preparation

Example Flow: RECEIVE – STORE – PREPARE – COOK – COOL – REHEAT – HOT HOLD – SERVE

Foods prepared in large volumes or in advance for next day service usually follow an extended process flow. These foods pass through the temperature danger zone more than one time; thus, the potential for the growth of spore-forming or toxigenic bacteria is greater in this process.

Failure to adequately control food product temperatures is one of the most frequently encountered risk factors contributing to foodborne illness. In addition, foods in this category have the potential to be recontaminated with *L. monocytogenes*, which could grow during refrigerated storage.

FDA recommends that food handlers minimize the time foods are at unsafe temperatures.

In addition to the facility-wide considerations, a food safety management system involving this food preparation process should focus on ensuring that you have active managerial control over the following:

- **Cooking** to destroy bacteria and parasites
- **Cooling** to prevent the outgrowth of spore-forming or toxin-forming bacteria
- **Hot and cold holding or using time alone** to inhibit bacterial growth and toxin formation
- **Date marking** of ready-to-eat PHF held for more than 24 hours to control the growth of *Listeria monocytogenes*
- **Reheating** for hot holding, if applicable

Approved food source, proper receiving temperatures, and proper cold holding prior to cooking are also important if dealing with certain marine finfish due to concerns with ciguatera toxin and scombrototoxin. Consult Annex 2 of this Manual for special considerations related to seafood.

[FDA link](#)

SUMMARY

Implementing a HACCP plan in retail and onsite foodservice operations is not always required by regulation, but it is considered a “best practice.” The menu drives the type of systems that need to be implemented. Recipes for each menu item need to be standardized and “HACCP-itized” for each

individual operation based on the flow of food, equipment and employees. Effective foodservice managers understand the importance of establishing a food safety culture and HACCP plan within an organization, and also how doing so will help reduce risks, control costs, and improve operations overall.

Definitions from the 2017 U.S. Food Code:

[F D A link](#)

“Critical control point” means a point or procedure in a specific FOOD system where loss of control may result in an unacceptable health RISK.

“Critical limit” means the maximum or minimum value to which a physical, biological, or chemical parameter must be controlled at a CRITICAL CONTROL POINT to minimize the RISK that the identified FOOD safety HAZARD may occur.

“HACCP plan” means a written document that delineates the formal procedures for following the HAZARD Analysis and CRITICAL CONTROL POINT principles developed by The National Advisory Committee on Microbiological Criteria for Foods.

“Hazard” means a biological, chemical, or physical property that may cause an unacceptable CONSUMER health RISK.

“Time/temperature control for safety food” means a FOOD that requires time/temperature control for safety (TCS) to limit pathogenic microorganism growth or toxin formation.

“Time/temperature control for safety food” includes:

(a) An animal FOOD that is raw or heat-treated; a plant FOOD that is heat-treated or consists of raw seed sprouts, cut melons, cut leafy greens, cut tomatoes or mixtures of

cut tomatoes that are not modified in a way so that they are unable to support pathogenic microorganism growth or toxin formation, or garlic-in-oil mixtures that are not modified in a way so that they are unable to support pathogenic microorganism growth or toxin formation.

REVIEW EXERCISE 1



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REVIEW EXERCISE 2



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Chapter 6 - Standardized Recipes

Chapter Outline:

- Standardized recipes explained
- Components of a standardized recipe
- Benefits of using standardized recipes
- Recipe yield
- Standard portions
- Kitchen Measurements
- Converting and adjusting recipes

Learning Objectives:

- List the parts of a well-written standardized recipe
- Explain the importance of standardized recipes as a management tool
- Explain advantages of using standardized recipes
- Describe common measurements used on recipes for food production

- Convert recipe and ingredient amounts from one yield to another yield (both larger and smaller)

Key Terms:

- **Standardized recipe**
- **Standard yield**
- **Standard portion**
- **Mise en place**
- **Count**
- **Volume measurement**
- **Weight measurement**
- **Conversion factor**
- **Conversion factor method**

STANDARDIZED RECIPES

All recipes are not created equal. Some recipes have missing ingredients, faulty seasonings, insufficient or poor instructions causing more work, and some are simply not tested.

A **standardized recipe** is a set of written instructions used to consistently prepare a known quantity and quality of food for a *specific location*. A standardized recipe will produce a product that is close to identical in taste and yield every time it is made, no matter who follows the directions.

A good standardized recipe will include:

- Menu item name – the name of the given recipe that should be consistent with the name on the

menu

- Total Yield – number of servings, or portions that a recipe produces, and often the total weight or volume of the recipe
- Portion size – amount or size of the individual portion
- Ingredient list/quantity – exact quantities of each ingredient (with the exception of spices that may be added to taste)
- Preparation procedures – Specific directions for the order of operations and types of operations (e.g., blend, fold, mix, sauté)
- Cooking temperatures and times, including HACCP critical control points and limits to ensure the dish is cooked properly and safely
- Special instructions, according to the standard format used in an operation
- Mise en place – a list of small equipment and individual ingredient preparation
- Service instructions, including hot/cold storage
- Plating/garnishing

In addition to the list above, standardized recipes may also include recipe cost, nutritional analysis, variations, garnishing and presentation tips, work simplification tips, suggested accompaniments or companion recipes, and photos.

Standardize recipes can help with work simplification and incorporate HACCP into procedures. Many facilities preparing food in large quantities also batch cook, so the

standardized recipes will incorporate those procedures into the instructions. The skill level of employees should also be taken into account when writing recipe procedures or directions. Terminology within the standardized recipes should be at the skill level of employees, for example, instruct an employee to melt butter and whisk with flour instead of saying “make a roux”, if more appropriate for a specific operation. Finally, cooking equipment, temperatures, time, etc. are adjusted for the facility.

A short side note on **mise en place** – a key component to efficiently producing menu items from recipes is to have “everything in its place.” Many kitchens will have work stations with a standard mise en place set up, which might include a cutting board, salt and pepper, tasting spoons, composting containers, etc. Standardized recipes can help employees produce menu items most efficiently if they also list mise en place for small equipment needed for the recipe, such as measuring tools, preparation tools (knives, peeler), holding pans, cooking utensils, etc. Employees can gather everything they need before starting recipe preparation thus reducing traveling around the kitchen during preparation, kitchen congestion, loss of focus from frequent starting and stopping, and errors from interruptions to their work. Detailing the mise en place for individual ingredients, such as peeling and cutting, with each ingredient can also improve the clarity and efficiency of recipe preparation. Example: Raw white potato, peeled, ½ in. dice

Some things to remember when writing a standardized recipe:

- If you are starting with a home/internet recipe – make it first!

- Standardized recipes are a training tool for employees
- A good recipe is like a well-crafted formula – it has been tested and works every time
- S.A.M.E. – Standardization Always Meets Expectations

Recipes as a Control Tool

Standardized recipes are an important control tool for food service managers and operations. A standardized recipe assures not only that consistent quality and quantity, but also a reliable cost range. In order for an operation to set a menu selling price that allows the operation to make a profit, it's vital that the cost of each recipe and portion is calculated and relatively consistent.

Benefits of using a standardized recipe include:

- a consistent quality and quantity
- standard portion size/cost
- assuring nutritional content and addressing dietary concerns, such as special diets or food allergies
- helping ensure compliance with “Truth in Menu” requirements
- aiding in forecasting and purchasing
- fewer errors in food orders
- incorporating work simplification principles and aids in cross-training
- assisting in training new employees
- incorporating HACCP principles

- reducing waste
- more easily meeting customer expectations

Arguments often used against standardized recipes can include:

- take too long to use
- employees don't need them, they know how to do things in establishment
- chef doesn't want to reveal their secrets
- take too long to write/develop

An effective foodservice manager knows that these arguments against using standardized recipes, even if true in some cases, cannot deter an operation from developing and consistently using standardized recipes. Our profits depend on this very important practice. Our customers must be able to rely on a consistent nutritional quality and allergen content at a minimum, but our customers also deserve to receive the SAME product every time they order a menu item they like and appreciate.

STANDARD YIELDS

The **yield** of a recipe is the number of portions it will produce. Yields can also be expressed as a total volume or total weight the recipe produces. An example would be a soup recipe that yields 24, 8 oz. portions which could also be stated as a yield of six quarts or a 1 ½ gallon. A weight example would be a recipe that yields 20, 4 oz. portions of taco meat or a total yield of 5 pounds.

Standard yields for the main, often higher cost, ingredients such as meat, may also take into consideration portion cost and be determined in part by calculating the cost per cooked portion.

For example, an 11 pound roast might be purchased for \$17 a pound. The cooked roast is to be served in 8 ounce portions as part of a roast beef dinner. After trimming and cooking, the roast will not weigh 11 pounds, but significantly less and will thus yield fewer than 22 portions (11 pounds multiplied by 2 – figuring that a pound (16 ounces) would yield two 8 oz portions.) By running a yield test, the number of portions, cost per portion and unit weight, and the standard yield and yield percentage, can be determined. Yield testing will be discussed later in this book.

STANDARD PORTIONS

A standard recipe includes the size of the portions that will make up a serving of the recipe. Controlling portion size has two advantages in food management:

- portion costs for the item will be consistent until ingredient or labor costs change, and
- customers receive consistent quantities each time they order a given plate or drink.

Standard portions mean that every plate of a given dish that leaves the kitchen will be almost identical in weight, count, or volume. Only by controlling portions is it possible to control food costs. If one order of bacon and eggs goes out with six strips of bacon and another goes out with three strips, it is impossible to determine the actual cost of the menu item.

Adhering to the principles of standard portions is crucial to keeping food costs in line. Without portion control, there is no consistency. This not only could have drastic effects on your food costs (having no real constant costs to budget for) but also on your customers. Customers appreciate consistency. They expect that the food you prepare will taste good, be presented properly, and be the same portion size every time they order it. Consider how the customer would feel if the portion size fluctuated with the cook's mood. A cook's bad mood might mean a smaller portion or, if the cook was in a good mood because the workweek was over, the portion might be very large.

It may be hard to grasp the importance of consistency with one single portion, but consider if fast-food outlets did not have portion control. Their costs, as well as their ordering and inventory systems, would be incredibly inaccurate, all of which would impact negatively on their **profit** margin.

Strict portion control has several side benefits beyond keeping costs under control. First, customers are more satisfied when they can see that the portion they have is very similar to the portions of the same dish they can see around them. Second, servers are quite happy because they know that if they pick up a dish from the kitchen, it will contain the same portions as another server's plate of the same order.

Simple methods to control portion include weighing meat before it is served, using the same size juice glasses when juice is served, counting items such as shrimp, and portioning with scoops and ladles that hold a known volume. Another method is using convenience products. These products are received usually frozen and are ready to cook. Portions are consistent in size and presentation and are easily costed out on a per

unit basis. This can be helpful when determining the standard portion costs.

Note: Using convenience products is usually more costly than preparing the item in-house. However, some chefs and managers feel that using premade convenience products is easier than hiring and training qualified staff. But always keep in mind that if the quality of the convenience item is not comparable to an in-house made product, the reputation of the restaurant may suffer.

Standard portions are assured if the food operation provides and requires staff to use such tools as scales, measured ladles or spoodles, and standard size scoops. Many operations use a management portion control record for menu items. The control record is posted in the kitchen so cooks and those who plate the dishes know what constitutes standard portions. Some operations also have photographs of each item posted in the kitchen area to remind workers what the final product should look like.

TYPES OF MEASUREMENTS USED IN THE KITCHEN

There are three types of measurements used to measure ingredients and to serve portions in the restaurant trade.

Measurement can be by volume, by weight, or by count.

Recipes may have all three types of measurement. A recipe may call for 3 eggs (measurement by count), 8 ounces of milk (measurement by volume), and 1 pound of cheese (measurement by weight).

There are formal and informal rules governing which type

of measurement should be used. There are also specific procedures to ensure that the measuring is done accurately and consistently.

Number or Count

Number measurement is only used when accurate measurement is not critical and the items to be used are understood to be close in size.

For example, “3 eggs” is a common measurement called for in recipes, not just because 3 is easy to count but also because eggs are graded to specific sizes. Most recipes call for large eggs unless stated otherwise.

Numbers are also used if the final product is countable. For example, 24 pre-made tart shells would be called for if the final product is to be 24 filled tart shells.

Volume

Volume measurement is usually used with liquids or fluids because such items are awkward to weigh. It is also used for dry ingredients in home cooking, but it is less often used for dry measurement in the industry.

Volume is often the measure used when portioning sizes of finished product. For example, portion scoops are used to dole out vegetables, potato salad, and sandwich fillings to keep serving size consistent. Ladles of an exact size are used to portion out soups and sauces. Often scoops and ladles used for portioning are sized by number. On a scoop, such a number refers to the number of full scoops needed to fill a volume of one quart. Ladles and spoodles are sized in ounces.

Weight

Weight is the most accurate way to measure ingredients or portions. When proportions of ingredients are critical, their measurements are always given in weights. This is particularly true in baking where it is common to list all

ingredients by weight, including eggs (which, as mentioned earlier, in almost all other applications are called for by count). Whether measuring solids or liquids, measuring by weight is more reliable and consistent.

Weighing is a bit more time consuming and requires the use of scales, but it pays off in accuracy. Digital portion scales are most commonly used in industry and come in various sizes to measure weights up to 11 lbs. This is adequate for most recipes, although larger operations may require scales with a larger capacity.

The reason weight is more accurate than volume is because it takes into account factors such as density, moisture, and temperature that can have an effect on the volume of ingredients. For example, 1 cup of brown sugar (measured by volume) could change drastically depending on whether it is loosely or tightly packed in the vessel. On the other hand, 10 oz of brown sugar, will always be 10 oz. Even flour, which one might think is very consistent, will vary from location to location, and the result will mean an adjustment in the amount of liquid needed to get the same consistency when mixed with a given volume.

Another common mistake is interchanging between volume and weight. The only ingredient that will have the same volume and weight consistently is water: 1 cup water = 8 ounces water.

There is no other ingredient that can be measured interchangeably because of gravity and the density of an item. Every ingredient has a different density and different gravitational weight, which will also change according to location. This is called **specific gravity**. Water has a specific gravity of 1.0. Liquids that are lighter than water (such as oils that float on water) have a specific gravity of less than

1.0. Those that are heavier than water and will sink, such as molasses, have a specific gravity greater than 1.0. Unless you are measuring water, remember not to use a volume measure for a weight measure, and vice versa.

CONVERTING AND ADJUSTING RECIPES AND FORMULAS

Recipes often need to be adjusted to meet the needs of different situations. The most common reason to adjust recipes is to change the number of individual portions that the recipe produces. For example, a standard recipe might be written to prepare 25 portions. If a situation arises where 60 portions of the item are needed, the recipe must be properly adjusted.

Other reasons to adjust recipes include changing portion sizes (which may mean changing the batch size of the recipe) and better utilizing available preparation equipment (for example, you need to divide a recipe to make two half batches due to a lack of oven space).

Conversion Factor Method

The most common way to adjust recipes is to use the conversion factor method. This requires only two steps:

1. Finding a conversion factor
2. Multiplying the ingredients in the original recipe by that factor.

Finding Conversion Factors

To find the appropriate conversion factor to adjust a recipe, follow these steps:

1. Note the yield of the recipe that is to be adjusted. The number of portions is usually included at the top of the recipe (or formulation) or at the bottom of the recipe. This is the information that you HAVE.
2. Decide what yield is required. This is the information you NEED.
3. Obtain the conversion factor by dividing the required yield (from Step 2) by the old yield (from Step 1). That is, $\text{conversion factor} = (\text{required yield})/(\text{recipe yield})$, $\text{conversion factor} = \text{what you NEED} \div \text{what you HAVE}$

If the number of portions and the size of each portion change, you will have to find a conversion factor using a similar approach:

1. Determine the total yield of the recipe by multiplying the number of portions and the size of each portion.
2. Determine the required yield of the recipe by multiplying the new number of portions and the new size of each portion.
3. Find the conversion factor by dividing the required yield (Step 2) by the recipe yield (Step 1). That is, $\text{conversion factor} = (\text{required yield})/(\text{recipe yield})$

ADJUSTING RECIPES USING CONVERSION FACTORS

Now that you have the conversion factor, you can use it to adjust all the ingredients in the recipe. The procedure is

to multiply the amount of each ingredient in the original recipe by the conversion factor. Before you begin, there is an important first step:

- **Before converting a recipe, express the original ingredients by weight whenever possible.**

Converting to weight is particularly important for dry ingredients. Most recipes in commercial kitchens express the ingredients by weight, while most recipes intended for home cooks express the ingredients by volume. If the amounts of some ingredients are too small to weigh (such as spices and seasonings), they may be left as volume measures. Liquid ingredients also are sometimes left as volume measures because it is easier to measure a quart of liquid than it is to weigh it. However, a major exception is measuring liquids with a high sugar content, such as honey and syrup; these should always be measured by weight, not volume.

Converting from volume to weight can be a bit tricky and will require the use of tables that provide the approximate weight of different volume measures of commonly used recipe ingredients. A resource to use in converting volume to weight is the *Book of Yields*. Once you have all the ingredients in weight, you can then multiply by the conversion factor to adjust the recipe. Often, you must change the quantities of the original recipe into smaller units, then multiply by the conversion factor, then put back into the largest unit that makes sense for the recipe. For example, pounds may need to be expressed as ounces, and cups, pints, quarts, and gallons must be converted into fluid ounces. Example:

Table 6.1 Ingredient Information.

Ingredient	Original amount	Common unit	Conversion Factor	New amount	New amount expressed in largest unit on recipe
Skim milk	1 ½ cup	12 fl. oz.	8	96 fl. oz. or 12 cups	3 quarts
Cheddar cheese	2 ¼ lbs	36 oz.	3	108 oz.	6 ¾ lbs. or 6 lbs. 12 oz.
Olive Oil	1 qt.	32 fl. oz.	.5	16 fl. oz.	1 pt.

Table 6.1 Ingredient Information

CAUTIONS WHEN CONVERTING RECIPES

When converting recipes, conversion calculations do not take into account certain factors:

- Equipment
- Mixing and cooking times – this can be affected if the equipment used to cook or mix is different from the equipment used in the original recipe
- Cooking temperatures
- Shrinkage – the percentage of food lost during its storage and preparation
- Recipe errors

Some other problems that can occur with recipe conversions are:

- Substantially increasing the yield of small home cook recipes can be problematic as all the

ingredients are usually given in volume measure, which can be inaccurate, and increasing the amounts dramatically magnifies this problem.

- Spices and seasonings must be increased with caution as doubling or tripling the amount to satisfy a conversion factor can have negative consequences. If possible, it is best to under-season and then adjust just before serving.

The fine adjustments that have to be made when converting a recipe can only be learned from experience, as there are no hard and fast rules. Generally, if you have recipes that you use often, convert them, test them, and then keep copies of the recipes adjusted for different yields.

S.A.M.E.

Remember – Standardization Always Meets Expectations. Foodservice operations need to meet the expectations of their customers, every time they visit. Foodservice operations need to meet expectations for employees, their skill level and training. Foodservice businesses need to meet expectations for costs and profit for all menu items. Standardized recipes are critical to the foodservice industry. They are simply good business!

REVIEW QUESTIONS (THINK ABOUT):

Why is using standardized recipes an important cost control tool for foodservice operations?

What are the benefits of using standardized recipes in a foodservice business operation?

Why is it important to understand the difference between volume and weight measurements when developing recipes?

REVIEW EXERCISE 1



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REVIEW EXERCISE 2



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Think about this: When you produce the expanded chicken tortilla soup recipe in Café Laura, you run out of soup after serving only 30 customers? What are some possible reasons that this happened?



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Chapter 7 - Recipe and Menu Costing

This chapter is remixed from [*Basic Kitchen and Food Service Management*](#) by The BC Cook Articulation Committee.

Outline:

- Standard portion costs
- Costing Individual Items on a Plate
- Yield Testing
- Using Yield to Calculate Food Costs
- Yield Tests and Percentages
- Cooking Loss Test
- Calculating quantities to purchase

Learning Objectives:

- Calculate standard portion costs
- Calculate APQ (as purchased quantity) ingredient amounts for both costing and food ordering purposes
- Calculate yield and waste percentages (for both

trimming and cooking losses)

- Determine edible portion cost (EPC) or “true cost” of recipe ingredients and menu items
- Determine portions available to serve from (APQ) as purchased quantity
- Complete volume to weight conversions to calculate (APQ) as purchased amounts and (APC) as purchased cost of ingredients

Key Terms:

- **Portion cost**
- **As purchased**
- **Edible portion**
- **Yield**
- **Yield percentage**
- **Waste**
- **Waste percentage**
- **Edible portion cost (“true cost”)**

STANDARD PORTION COSTS

A standard recipe served in standard portions has a standard portion cost. A standard portion cost is simply the cost of the ingredients (and sometimes labor) found in a standard recipe divided by the number of portions produced by the recipe. Standard portion costs change when food costs change, which means that standard portion costs should be computed and verified regularly, particularly in times of high inflation.

If market conditions are fairly constant, computing standard portion costs need not be done more than every few months. Details about recipe costs are not usually found on a standard recipe document but on a special recipe detail and cost sheet or database that lists the cost per unit (kilogram, pound, milliliter, ounce, etc.) and the cost per amount of each ingredient used in the recipe or formula. The standard portion cost can be quickly computed if portions and recipes are standardized. Simply determine the cost of each ingredient used in the recipe and ingredients used for accompaniment or garnish. The ingredients in a standard recipe are often put on a recipe detail sheet (Figure 1). The recipe detail sheet differs from the standard recipe in that room is provided for putting the cost of each ingredient next to the ingredient. Recipe detail sheets often have the cost per portion included as part of their information and need to be updated if ingredient costs change substantially. They can also be built in a POS system database or spreadsheet program that is linked to your inventory to allow for the updating of recipe costs as ingredient costs change.

Menu item: Seafood Newburg

Yield: 10 portions

Portion size: 125 g of seafood

Selling price: \$12.99

Cost/portion: \$4.07

Food cost %: 31.3%

Then include...

Table 7.1 Recipe Details and Cost for Seafood Newburg

Ingredient	Quantity	Units	Cost/ Unit	Extension
Lobster Meat	500g	kg	\$38.00	\$19.00
Scallops	250g	kg	\$25.00	\$6.25
Shrimps	250g	kg	\$14.00	\$3.50
Sole	250g	kg	\$8.50	\$2.13
Cream, heavy	250mL	L	\$4.00	\$1.00
Fish Velouté	750mL	L	—	\$1.00
Butter	250g	500g	\$2.85	\$1.43
Pepper and Salt	—	—	—	—
Paprika	5g	—	—	\$00.15
Sherry	250mL	750mL	\$12.00	\$4.00
Egg yolks	6	12	\$2.00	\$1.00
Patty shells	10	each	\$00.12	\$1.20
Total	—	—	—	\$40.66

Table 7.1 Recipe Details and Cost for Seafood Newburg

Note that the portion cost and selling price used in Table 7.1 is for the Seafood Newburg alone (a true à la carte price) and not the cost of all accompaniments found on the plate when the dish is served. For example, the cost of bread and butter, vegetables, and even garnishes such as a wedge of lemon and a sprig of parsley must be added to the total cost to determine the appropriate selling price for the Seafood Newburg.

Costing Individual Items on a Plate

If you need to determine the total cost of a plate that has multiple components, rather than a recipe, you can follow the procedure in the example below.

Example

Standard order of bacon and eggs: the plate contains two eggs, three strips of bacon, toast, and hash browns.

The cost of ingredients used for accompaniment and garnish can be determined by using the standard portion cost formula, which is the purchase price of a container (often called a unit) divided by the number of portions in the container. That is,

standard portion cost = unit cost/portions in the unit

An example is a carton of eggs. If eggs cost \$2.00 a dozen and a standard portion in a menu breakfast item is two eggs, the standard portion cost can be found.

Recall the equation:

standard portion cost = unit cost/portions in the unit

Now, find the portions in the unit.

portions in the unit = number in unit/number in a portion
= 12/2
= 6

That is, there are six 2-egg portions in a dozen eggs.

Substitute the known quantities into the equation.

standard portion cost = unit cost/portions in unit
= \$2.00/6
= \$0.33

You could get the same answer by calculating how much each egg in the dozen is worth ($\$2.00/12 = \0.17) and then multiplying the cost per egg by the number of eggs needed ($\$0.17 \times 2 = \0.34). No matter what method is used, the standard portion of two eggs in this order of bacon and eggs has a standard portion cost of \$0.34.

You can find the standard portion cost of the bacon in the

same way. If a 500 g package of bacon contains 20 rashers and costs \$3.75, the standard portion cost of a portion consisting of four rashers can be found quickly:

portions in the unit = $20/4$

= 5

standard portion cost = unit cost/portions in unit

= $\$3.75/5$

= \$0.75

The bacon and eggs on the plate would have a standard portion cost of \$1.09. You could determine the cost of hash browns, toast, jam, and whatever else is on the plate in the same manner.

Often, restaurants will serve the same accompaniments with several dishes. In order to make the costing of the entire plate easier, they may assign a “plate cost,” which would include the average cost of the standard starch and vegetable accompaniments. This makes the process of pricing daily specials or menu items that change frequently easier, as you only need to calculate the cost of the main dish and any specific sauces and garnishes, and then add the basic plate cost to the total to determine the total cost of the plate. Tables 7.2 and 7.3 provide an example for calculating the basic plate cost and the cost of daily features.

Table 7.2 Individual Costs of One Plate

Mashed potatoes, one serving	\$0.50
Mixed vegetables, one serving	\$0.75
Demi-glace, one serving	\$0.30
Herb garnish	\$0.20
Total basic plate cost	\$1.75

Table 7.2 Individual Costs of One Plate

Table 7.3 Calculated Cost of Daily Features Using a Basic Plate Cost

Day	Feature	Feature Cost per Portion	Basic Plate Cost	Total Cost
Monday	Roast Beef	\$5.00	+ \$1.75	<u>\$6.75</u>
Tuesday	Pork Chop	\$3.75	+ \$1.75	<u>\$5.50</u>
Wednesday	Half Roast Chicken	\$4.00	+ \$1.75	<u>\$5.75</u>

Table 7.3 Calculated Cost of Daily Features Using a Basic Plate Cost

Yield Testing

Yield in culinary terms refers to how much you will have of a finished or processed product. Professional recipes should always state a yield; for example, a tomato soup recipe may yield 4 gallons or 15 L, and a muffin recipe may yield 24 muffins. Yield can also refer to the amount of usable product after it has been processed (peeled, cooked, butchered, etc.) For example, you may be preparing a recipe for carrot soup. The recipe requires 2 lbs or 1 kg of carrots, which you purchase. However, once you have peeled them and removed the tops and tips, you may only have 1.6 lb or 800 grams of carrots left to use. In order to do accurate costing, yield testing must be carried out on all ingredients and recipes. When looking at yields, you must always consider the losses and waste involved in preparation and cooking. There is always a dollar value that is attached to vegetable peel, meat and fish trim, and packaging like brines and syrups. Any waste or loss has been paid for and is still money that has

been spent. This cost must always be included in the menu price. Note: Sometimes, this “waste” can be used as a by-product. Bones from meat and fish can be turned into stocks. Trimmings from vegetables can be added to those stocks or if there is enough, made into soup. All products must be measured and yield tested before costing a menu. Ideally, every item on a menu should be yield tested before being processed. Most big establishments will have this information on file, and there are many books that can also be used as a reference for yields, such as *The Book of Yields: Accuracy in Food Costing and Purchasing*.

The procedure for testing for yields

1. Record the original weight/volume of your item. This is your raw weight or as purchased (AP) weight.

- A) Whole tenderloin – 2.5 kg
- B) Whole sockeye salmon – 7.75 kg
- C) Canned tuna flakes in brine – 750 mL

2. Process your product accordingly, measure and record the waste or trim weight.

- A) Tenderloin fat, sinew, chain, etc. – 750 g tenderloin trim
- B) Salmon head, bones, skin, etc. – 2.75 kg salmon trim
- C) Brine – 300 mL canned tuna waste

3. Subtract the amount of trim weight from the AP weight and you will have what is referred to as your processed or edible product (EP) weight. The formula is: AP weight – waste = EP weight.

- A) $2500\text{ g} - 750\text{ g} = 1750\text{ g}$ processed tenderloin
- B) $7750\text{ g} - 2750\text{ g} = 5000\text{ g}$ processed salmon

C) $750 \text{ mL} - 300 \text{ mL} = 400 \text{ mL}$ processed canned tuna

4. Get your yield percentage by converting the edible product weight into a percentage. The formula is $\text{EP weight} \div \text{AP weight} \times 100 = \text{yield \%}$.

A) $(1750 \div 2500) \times 100 = 70\%$ for the tenderloin

B) $(5000 \div 7750) \times 100 = 64.51\%$ for the salmon

C) $(400 \div 750) \times 100 = 53.33\%$ for the canned tuna

Yield percentage is important because it tells you several things: how much usable product you will have after processing; how much raw product to actually order, and the actual cost of the product per dollar spent.

Using Yield to Calculate Food Costs

Once you have your yield percentage, you can translate this information into monetary units. Considering the losses incurred from trimmings and waste, your actual cost for your processed ingredient has gone up from what you originally paid, which was your raw cost or AP cost. These calculations will provide you with your processed cost or EP cost.

The Procedure for Determining EP Cost

1. Record the AP cost, what you paid for the item: A) Whole tenderloin – \$23.00/kg

B) Whole sockeye salmon – \$5.00/kg

C) Canned tuna flakes in brine – \$5.50/750 mL can

2. Obtain your factor. This factor converts all your calculations into percentages. The formula is:

$100 \div \text{yield \%} = \text{factor}$

A) $100 \div 70 \text{ tenderloin} = 1.42$

B) $100 \div 64.51 \text{ salmon} = 1.55$

C) $100 \div 53.33$ canned tuna = 1.875

3) Once the factor has been determined, it is now an easy process to determine your EP cost. The formula is:
factor x as purchased cost per (unit) = edible product cost per (unit)

A) Tenderloin $\$23.00 \times 1.42 = \$32.66/\text{kg}$

B) Salmon $\$5.00 \times 1.55 = \$7.75/\text{kg}$

C) Canned tuna $\$5.50 \times 1.875 = \$10.78/750 \text{ mL}$

Alternatively, the purchased cost per unit (APC/unit) can be divided by the corresponding yield percentage to calculate the edible portion cost per unit.

Example #1: If the whole turkey costs \$.99 per pound and the EP yield is 36%, then

\$.99 divided by .36 equals \$2.75 per pound. This is also referred to as the “true cost” of the turkey to serve the customer.

If we plan to serve a 5 oz. portion, then we can calculate the edible portion cost per ounce. Divide \$2.75 by 16 = \$.172 per oz. then multiple by 5 oz. = \$.86 or 86 cents.

Example #2: If a whole head of cauliflower costs \$1.29 per pound and the EP yield is 60%, then \$1.29 divided by .60 equals \$2.15 per pound. A 4 oz. portion served to the customer would cost \$.5375

There could be a considerable difference in costs between the raw product and the processed product, which is why it is important to go through all these steps. Once the EP cost is determined, the menu price can be set.

Yield Tests and Percentages

Meat and seafood products tend to be the most expensive part of the menu. They also have significant amounts of waste, which must be accounted for when determining

standard portion cost. When the meat is delivered, unless it has been purchased precut, it must be trimmed and cut into portions. The losses due to trimming and cutting must be accounted for in the portion cost of the meat. For example, if a 5 kg roast costing \$8 a kilogram (total cost is \$40) is trimmed of fat and sinew and then weighs 4 kg, the cost of usable meat (the EP cost), basically, has risen from \$8 a kilogram to \$10 a kilogram (\$40/4 kg). The actual determination of portion cost is found by conducting a meat cutting yield test. The test is conducted by the person who breaks down or trims the wholesale cut while keeping track of the weight of the parts. The information is placed in columns on a chart, as shown in Table 7.5. The column names and their functions are discussed below.

Table 7.4 Header for a Larger Table Oriented Around the Yield of Cutting a Pork Tenderloin

Item:	Pork Loin	Grade:	A-1	Date:	_____
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Table 7.4 Header for a Larger Table Oriented Around the Yield of Cutting a Pork Tenderloin

Table 7.5 Prices and Percentages for the Meat Cutting Yield Test

<i>Part</i>	Weight	% of Total	Value per Kg	Total Value	Cost Factor	EP Cost(per kg)	Portion Size	Portion Cost
Whole Piece(AP)	2.5 kg	—	\$12.14	\$30.35	—	—	—	—
Breakdown	—	—	—	—	—	—	—	—
Fat & Gristle	850 g	34%	\$0.20	\$0.17	—	—	—	—
Loss in cutting	100 g	4%	0	—	—	—	—	—
Trim	250 g	10%	\$7.49	\$1.87	—	—	—	—
Usable Meat	1300 g	52%	—	\$28.31	1.79	\$21.78	250 g	\$5.45

Table 7.5 Prices and Percentages for the Meat Cutting Yield Test

The parts of the meat are listed on the yield test sheet under the heading “Breakdown.” In the example in Table 7.5, a pork loin has been broken down into fat and gristle, loss in cutting, trim, and usable meat. Various measures and calculations are then recorded in the different columns: • **Weight:** Next to the breakdown column the weights of the individual parts are listed. • **Percentage of total weight:** The third column contains the percentage of the original piece by weight. The column is headed “% of total weight,” which reminds us how to calculate the percentages. That is, % of total weight = weight of part/total weight. For example, in Table 7.5, the fat and gristle weigh 850 g (or 0.850 kg). The total weight of the pork loin before trimming is 2.5 kg.

Note: The next few charts show meats measured in kg, but this would be the same process if the meat was measured in pounds.

Percentage of Fat and Gristle Equation

$$\begin{aligned}
 \% \text{ of fat and gristle} &= \text{weight of part} / \text{total weight} \\
 &= 0.850 \text{ kg} / 2.5 \text{ kg} \\
 &= 0.34 \\
 &= 34\%
 \end{aligned}$$

Using the same procedure, you can calculate:

$$\begin{aligned}
 \% \text{ of loss in cutting} &= 0.100 \text{ kg} / 2.5 \text{ kg} \\
 &= 0.04 \\
 &= 4\%
 \end{aligned}$$

$$\begin{aligned}
 \% \text{ of trim} &= 0.250 \text{ kg} / 2.5 \text{ kg} \\
 &= 0.1 \\
 &= 10\%
 \end{aligned}$$

$$\begin{aligned}
 \% \text{ of usable meat} &= 1.300 \text{ kg} / 2.5 \text{ kg} \\
 &= 0.52 \\
 &= 52\%
 \end{aligned}$$

Note: The percentage of usable meat is an important concept. It is often referred to as the yield percentage or yield factor. It will be looked at in some detail later in this chapter.

- **Value per kg:** This column of Figure 4 lists the value of the parts per unit of weight. These values are based on what it would cost to purchase similar products from a butcher shop. The tidbits are quite valuable although they are too small to be used as medallions. They might be used, however, in stews or soups. Notice that no value is given to any weight lost in cutting.
- **Total value:** This is determined by multiplying the value per kg column by the weight column. This has to be done carefully as the units must match. For example, the temptation is to simply multiply the weight of the fat and gristle (850 g) by \$0.20 and get \$170 instead of converting

the grams into kilograms (850 g = 0.850 kg) and then multiplying to give the actual value of \$0.17.

The entry for the “Usable Meat” in the total value column is determined by subtracting the value of the breakdown parts from the total cost of the pork loin (\$30.35). The total cost is found by multiplying the weight of the whole piece (2.5 kg) by the value per kg (\$12.14).

The total value of the usable meat equation

$$\begin{aligned}\text{total value of usable meat} &= \text{total cost} - \text{total value of} \\ &\text{breakdown parts} \\ &= \$30.35 - (\$0.17 + \$1.87) \\ &= \$30.35 - (2.04) \\ &= \$28.31\end{aligned}$$

- Cost of usable kg (or EP cost): cost of a usable kilogram is determined by dividing the total value of the usable meat by the weight of the usable meat as measured in kilograms (see below).

Cost of usable kg (or EP cost) equation

$$\begin{aligned}\text{cost per usable kg} &= \text{total value of usable meat/kg weight of} \\ &\text{usable meat} \\ &= \$28.31/1.3 \text{ kg (remember } 1300 \text{ g} = 1.3 \text{ kg)} \\ &= \$21.78\end{aligned}$$

Notice the difference between the wholesale cost (\$12.14 kg) and the cost of usable meat (\$21.78). This difference shows why the basic formula for determining standard portion costs

will not work with meat. • Portion size and portion cost: The last two columns in Figure 4 show portion size and portion cost. Portion size is determined by management; in this example, individual portions of the pork loin weigh 250 g (or 0.250 kg).

The portion cost is determined by multiplying the cost of a usable kg by the portion size.

That is,

$$\text{portion cost} = \text{portion size} \times \text{cost of usable kg}$$

Using the correct units is very important. The portion size should be converted into kilograms or pounds as the cost per usable kg has been found.

Portion size equation

$$\begin{aligned} \text{portion cost} &= \text{portion size} \times \text{cost of usable kg} \\ &= 0.250 \text{ kg} \times \$21.78/\text{kg} \\ &= \$5.44 \end{aligned}$$

- Cost factor: If the price of pork loin changes, the monetary values entered on the meat cutting yield sheet become invalid. This column in Figure 4 attempts to reduce the chance that all this work is suddenly for naught. The cost factor will probably not change drastically but the wholesale cost of purchasing the meat might. By having a cost factor on hand, you can quickly apply it to the wholesale price of the purchased product and determine what an appropriate selling price should be. The cost

factor per kilogram is determined by dividing the cost per usable kg by the original cost per kilogram (see below).

Cost factor equation

cost factor per kg = cost per usable kg/original cost per kg

In this example,

$$\begin{aligned}\text{cost factor per kg} &= \text{cost per usable kg/original cost per kg} \\ &= \$21.78/\$12.14 \\ &= 1.79\end{aligned}$$

This cost factor can be used to find the cost of a usable kg or lb if the wholesale cost changes with the following formula.

Finding the cost of usable kg if wholesale cost changes

new cost of usable kg = cost factor per kg x new wholesale cost

For example, if the cost of pork loin should rise to \$13.00 a kilogram from the \$12.14 per kilogram given on the cutting yield test sheet, the new cost per usable kg can be quickly calculated:

$$\begin{aligned}\text{new cost of usable kg} &= \text{cost factor per kg} \times \text{new wholesale cost} \\ &= 1.79 \times \$13.00 \\ &= \$23.27\end{aligned}$$

Notice the size of the increase is in usable kg cost. The wholesale cost rose by $(\$13.00 - \$12.14)$ \$0.86 a kg, but the new cost of usable meat rose by \$1.49 a kg.

Chart: Cost factor per portion equation

The cost factor per portion is found by multiplying the portion size by the cost factor per kilogram. In this example,

$$\begin{aligned}\text{cost factor per portion} &= \text{portion size} \times \text{cost factor per kg} \\ &= 0.250 \text{ kg} \times 1.79 \\ &= 0.45\end{aligned}$$

The cost factor per portion is important because it can be used to find the cost per portion from the wholesale cost of meat. This is done by multiplying the two quantities. For example, if the wholesale price of pork loin should rise to \$13.00 a kg, the portion cost will become:

$$\begin{aligned}\text{new portion cost} &= \text{cost factor per portion} \times \text{new wholesale cost} \\ &= 0.45 \times \$13.00 \\ &= \$5.85\end{aligned}$$

The cost factor per kilogram or pound and the cost factor per portion are the most important entries on a meat cutting yield test as they can be used to adjust to changing wholesale costs. Today, the meat cutting yield test is losing some of its popularity because of the introduction of pre-portioned meats. But there remain several benefits to performing meat cutting tests:

- Exact costs are determined so menu pricing can be more accurate.
- Tests done periodically verify that the meat wholesaler is providing meat to stipulated specifications. If the amount of trim and waste rises, so do food costs.
- By comparing the results from two or more wholesalers who have provided the same sample cuts, a critical evaluation can be done to determine which one is supplying better meat.
- Comparing yields between people doing the cutting will tell you who is being the most efficient.
- Since individual pieces

of meat or fish may vary slightly, doing yield tests on several of the same items and taking an average will give you the best idea of your standard yield.

Cooking Loss Test

Some meats cannot be accurately portioned until they are cooked. This applies particularly to roasts, which shrink during cooking. The amount lost due to shrinkage can be minimized by incorporating the principles of low-temperature roasting, but some shrinkage is unavoidable.

The cooking loss test serves the same function as the meat cutting yield test. Their similarities and differences will become evident in the discussion below. Figure 5 shows a sample cooking loss test form. **Cooking Loss Test**

Item: Leg of Lamb **Portion:** 125g **Cost factor:** 0.2931

Number cooked: One

Time: 2 hours and 30 minutes

Temperature: 175°C

Table 7.6 Cooking Loss Test Form for a Leg of Lamb

<i>Breakdown</i>	Weight	% of Total	Value (per kg)	Total Value	EP Cost(per kg)	Portion Size	Portion Cost	Cost Factor (per kg)
Original Weight	3750g	100%	\$6.50	\$24.38	—	—	—	—
Trimmed weight	2850 g	76.00%	—	\$24.38	—	—	—	—
Loss in Trimming	900 g	24%	—	0	—	—	—	—
Cooked weight	2350 g	62.67%	—	\$24.38	—	—	—	—
Loss in cooking	500 g	13.33%	—	0	—	—	—	—
Bones and trim	750 g	20.00%	—	0	—	—	—	—
Saleable weight	1600 g	43.00%	—	\$24.38	\$15.24	125g	\$1.91	2.3446

Table 7.6 Cooking Loss Test Form for a Leg of Lamb

When using a cooking loss test form, note the following, referring to Table 7.6:

- The form specifies the time and temperature of the roasting.
- The column headings are similar to the column headings on the meat cutting yield test form (Table 7.5), as you are measuring similar things.
- The first line in Table 7.6 lists the weight and wholesale cost of the roast (total value).
- The trimmed weight is the weight of the

roast that is placed in the oven. Some fat and gristle have been trimmed off in the kitchen. In the example, about 900 g have been trimmed. Technically, if the trim has some value, it should be used to reduce the total value of the roast. However, for simplicity, it is ignored in this example.

- After cooking for 2 hours and 30 minutes (the time stated on the test form), the roast is weighed and the cooked weight is entered on the form.
- The weight loss in cooking is determined by subtracting and the value entered on the form.
- The cooked roast is then deboned and trimmed. The weight of this waste is recorded.
- The weight of the remaining roast is determined. This is the amount of cooked roast you have available to sell and which can be divided into portions.
- Notice that the total value (that is, the cost) of the roast remains the same throughout the process. Only the weight of the roast changes.
- The percentage of total weight figures are calculated in the same way they were determined in Figure 4.

- The cost of usable kg is determined by dividing the saleable weight into the total value of the roast.
- Portion size is determined by restaurant managers, and the portion cost is calculated by multiplying the cost of usable kg and the portion size. This is the same procedure used to determine portion cost on the meat cutting yield test form.
- The cost factor per kg is the ratio of the cost of usable kg and the original value per kg.

Equation

$$\begin{aligned}\text{cost factor per kg} &= \text{cost of usable kg/value per kg} \\ &= \$15.24/\$6.50 \\ &= 2.3446\end{aligned}$$

- The cost factor per portion is again found by multiplying the cost factor per kg by the portion size

As with the meat cutting yield test, the most important entries on the cooking loss test sheet are the portion cost and the cost factor per kg as they can be used to directly determine the portion and kilogram costs if the wholesale cost unit price changes.

Yield percentages are the ratio to total weight values found for usable meat on the meat cutting yield test sheet and the

saleable weight found on the cooking loss test. Once found, yield percentages (or yield factors as they are sometimes called) are used in quantity calculations.

The general relationship between quantity and yield percentage can be seen in the following equation:

quantity needed = (number of portions x portion size)/yield percentage

Equation

Find the quantity of pork loin needed to serve 50 people 250-g portions if the yield percentage is 52% as in Figure 4. The solution is: quantity needed = (number of portions x portion size)/yield percentage

$$= (50 \times 0.250 \text{ kg})/52\%$$

$$= 12.5 \text{ kg}/0.52$$

$$= 24.03 \text{ kg}$$

You need just over 24 kg of untrimmed pork loin to serve 50 portions of 250 g each.

The yield formula can be restated in other ways. For example, if you needed to find how many 125 g portions of lamb can be served from 12 kg of uncooked lamb given a yield factor of 43%, you could use the following procedure:

Equation

number of portions = (quantity on hand x yield percentage)/portion size

$$= (12 \text{ kg} \times 0.43)/0.125 \text{ kg}$$

$$= 5.16 \text{ kg}/0.125$$

= 41.28

As with the inventory sheets, using a spreadsheet to help calculate the yields and factors is helpful. Some sample tools are provided in the Appendix.

Volume to Weight Conversions

Recipes, particularly home size, are often written using volume measures rather than weight measures. When recipes are expanded and used in large quantities, it is more typical and accurate to use weight as the measure for many ingredients. It's very important to understand that though liquid volumes are measured in fluid ounces (8 fl. oz. in a cup, 32 fl. oz. in a quart, etc.) fluid ounces are not equivalent to "weight" ounces. When ingredient volumes have to be converted to weight for calculating purchase quantities or recipe costing, a volume to weight conversion must be done. The correct weight of each ingredient to use for this conversion can be found in a resource, such as *The Book of Yields: Accuracy in Food Costing and Purchasing*.

Example: If an Apple Crisp recipe requires 25 cups of peeled, diced Macintosh apples, the weight would be preferred and more accurate for producing the apple crisp. According to *The Book of Yields*, referenced above, the weight of peeled, diced Macintosh apples is 4 oz. per cup. To convert 25 cups to weight, multiply each cup in the recipe by the weight per cup.

25 cups x 4 oz/cup = 100 oz. This would then be divided by 16 (ounces per pound)

100 divided by 16 = 6.25 lbs. or 6 lbs 4 oz. One of these would be the new amount listed on the recipe.

Additionally, apples are typically purchased by weight (lbs.), so this same volume to weight conversion is done to

calculate the edible portion amount of apple that needs to be purchased. Since apples that are peeled and diced have a waste factor, the yield percentage would be used to calculate the APQ (as purchased quantity.) According to the Book of Yields, the yield percentage for peeled, diced Macintosh apples is 72.25%. Following the procedure discussed earlier in this chapter, the edible portion of 6.25 lbs. of apples would be divided by .7225 to get the APQ (as purchased quantity), which equals 8.65 lbs.

Summary

The content in this chapter can seem confusing when it's first introduced, but observing some examples of trimming meat or produce, actually weighing the waste and edible portion, and practicing the EPQ to APQ calculations will improve understanding of these concepts. It's important to be able to do these calculations to develop accurate portions costs for recipes and menu items. Once the cost of recipes and menu items are established, the next step to building an operation's menu is to set menu prices.

REVIEW QUESTIONS

- Why is it important to be able to calculate the difference between as purchased (AP) quantities and edible portion (EP) quantities?
- What is the difference between yield percentage and waste percentage?
- What does it mean to calculate the "true cost" of a food product?
- How do you compare the actual price difference between the edible portion of a whole, raw

product and a pre-prepared “ready to eat” product.

- What information covered in this chapter is needed to accurately calculate the amount of product to purchase for a forecasted customer count?

REVIEW EXERCISE 1



An interactive or media element has been excluded from this version of the text. You can view it online here:

<https://psu.pb.unizin.org/hmd329/?p=231>

REVIEW EXERCISE 2



An interactive or media element has been excluded from this version of the text. You can view it online here:

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Chapter 8 - Menu and Recipe Pricing

This chapter is remixed from [*Basic Kitchen and Food Service Management*](#) by The BC Cook Articulation Committee.

Chapter Outline:

- What to consider when pricing a menu
- Calculating menu items costs
- Using food cost percentage to set a menu price
- Calculating and using a mark-up factor
- Calculating menu prices
- Contribution margins

Learning Objectives:

- Describe factors to consider when pricing menu items
- Explain importance of the price/value relationship
- Explain purpose and process of using a blended pricing strategy
- Calculate “base” or minimum selling price for

menu items

- Pricing an “all you can eat” menu, such as a buffet or salad bar
- Describe the purpose and use of special pricing situations – bundling, coupons, and value pricing

Key Terms:

- **Price/value relationship**
- **Ambiance**
- **Menu mix**
- **Blended pricing**
- **Food cost percent**
- **Mark up factor**
- **Contribution margin**
- **Plate cost**
- **Bundling**
- **Coupons**
- **Value pricing**

PRICING CONSIDERATIONS

Once the total cost and portion cost of a recipe has been established, it's time to set prices for the menu. There are a multitude of factors to consider, many of which we've discussed in previous chapters. Obviously we have to consider our costs, since we are in business to make money (or at least meet our budget or breakeven in the case of some onsite

segments.) We have to consider our customers. What do they consider a good value? We know the restaurant business is not just about the food, but also the service, the experience, the ambiance. Customers are typically willing to pay more for a menu item if there are other “added value” features such as convenience (i.e. food that is delivered), superb service (i.e. fine dining, cooking at the table), ambiance (i.e. rotating restaurant with a view of the city), or a special experience (i.e. dinner with a show or a table in the kitchen.) It’s all about the price/value relationship for each individual customer.

The location also affects what customers are willing to pay. Think about the difference in the price of just a bottle of water in a restaurant, a vending machine, or a sporting venue! Prices in the airport are usually higher even for the exact same food from a chain restaurant. Prices usually vary, even for the same menu item, during different meal periods with lunch typically less expensive than dinner. Portions sizes, product quality, and the menu mix are also factors to consider. We will further explore some of these issues in the discussion about menu analysis. Think about how all of these factors affect the setting of menu prices.

Many onsite segments of the industry also have to price a part or all of their menu offerings, with various considerations. K-12 typically sets a meal price at the beginning of the school year and sticks with it all year. Colleges and universities may offer “all you can eat” dining options and set the price at least for a full semester, if not the entire academic year. Hospitals set menu prices for their employee and visitor cafeterias but may try to keep prices low as a sort of employee benefit. Business and industry also may offer menus at very reasonable, below market value, prices to encourage employees to eat on site. Remember that each

foodservice operation will be a bit different, so management will have to research and be aware of all the various pricing considerations that apply to that specific operation and the local environment.

Setting the Menu Price

Although you likely have a target overall food cost in your establishment, not every menu item will carry exactly the same food cost percentage. Some items are more costly than others, but most establishments will have a range of prices that all the menu items fit into. Consequently, it is important to balance the menu so that the low and high food cost items work together to help you reach your target food cost. This process is called “blended pricing” and results from using menu engineering or menu analysis. Menu engineering means balancing the high and low food cost items; it also includes strategically featuring or promoting items to help reach your targets.

Calculating Menu Item Costs

The cost per portion derived from yield tests done on the main ingredient of a menu item usually represents the greatest part of the cost of preparing the item (see the section above on yield tests for more information).

However, of equal importance is the portion cost factor. For example, the portion cost factor can be used to determine the cost of a portion of the main ingredient regardless of the price of the meat (which is often the main cost factor) charged by the supplier as long as the restaurant’s preparation of the meat remains unchanged. The cost per portion is determined by multiplying the portion cost factor by the packing house’s price per kilogram (or pound).

Quite often the cost per portion of the main ingredient is used by itself to determine the selling price of a menu

item. This works well with items on an à la carte menu as the basic main ingredient (such as a steak) is sold by itself and traditional add-ons (such as a baked potato and other vegetables) are sold separately.

As discussed earlier in this book, in many cases, some of the components will be the same, so a basic plate cost can be used to add to the cost of the main protein to get a total cost for the dish.

In dishes where the main ingredients are not sold as entities but as part of a prepared dish, the cost of all the items in the recipe must be determined to find an accurate portion cost price. In this case, a recipe detail and cost sheet is used to determine the cost price of menu items. (Refer back to the section on costing individual menu items for more information.)

Once the potential cost of a menu item is determined, the selling price of the item can also be calculated by using the food cost percentage.

Food Cost Percentages

As you may recall, food cost percentage is determined by dividing the portion cost by the selling price:

Food cost percentage

If the portion cost is \$4.80 and the selling price is \$14.00, the food cost percentage is:

$$\begin{aligned}\text{food cost percentage} &= \text{portion cost/selling price} \\ &= \$4.80/\$14.00 \\ &= 0.34285 \\ &= 34.285\% \\ &= 34\% \text{ (rounded off)}\end{aligned}$$

Another way of expressing the food cost is as a cost mark-up.

Cost mark-up

The cost mark-up is determined by reversing the food cost percentage equation:

$$\text{cost mark-up} = \text{selling price/portion cost}$$

The cost mark-up can also be determined by dividing the food cost percentage into 1. The equation then becomes:

$$\text{cost mark-up} = 1/\text{food cost percentage}$$

In the example above, where the portion cost is \$1.20 and the selling price is \$3.50, the cost mark-up can be solved in the following ways:

$$\text{cost mark-up} = \text{selling price/portion cost}$$

$$= \$14.00/\$4.80$$

$$= 2.9166$$

$$= 2.92$$

$$\text{or cost mark-up} = 1/\text{food cost percentage}$$

$$= 1/34.285\%$$

$$= 1/0.34285$$

$$= 2.91674$$

$$= 2.92$$

The cost mark-up can be used to determine a selling price when a portion cost is known by multiplying the cost mark-up and the portion cost:

Determine a selling price

selling price = portion cost x cost mark-up. For example, if the ingredients for a portion of soup costs \$1.05 and the

restaurant has a cost mark-up of 3.6, the menu price of the soup is:

$$\begin{aligned}\text{selling price} &= \text{portion cost} \times \text{cost mark-up} \\ &= \$1.05 \times 3.6 \\ &= \$3.78\end{aligned}$$

The restaurant would charge at least \$3.78 for the menu item if it wants to keep its mark-up margin at 3.6, which is about a 28% food cost percentage. This price might be adjusted because of competition selling the same item for a different price, price rounding policies of the restaurant or the whims of management. For example, many restaurants have prices that end in 5 or 9 (such as \$4.99 or \$5.95). Prices on such menus tend to be rounded to the nearest number ending in 5 or 9. No matter what the final menu price is, at least a base price has been established.

The problem with the above approach is it doesn't explain how to select a food percentage or a selling price from which to derive the percentage. In many cases, the food percentage is based on past experiences of the manager, or by a supposed awareness of industry averages. For example, many people simply set their food percentage at 30% and never work out a more appropriate figure. Similarly, the selling price of a menu item is often the product of guessing what the market will bear: \$4.50 for a bowl of soup may seem like a good deal or as much as a reasonable person might pay in that restaurant. Unfortunately, none of these methods takes into account the unique situations affecting most restaurants.

A more accurate way of computing a target food cost percentage is to estimate total sales, labor costs, and hoped-for profits. These figures are used to determine allowed food costs. The total of projected food costs is divided by the

projected sales to produce a food cost percentage. The food cost percentage can be turned into a mark-up margin by dividing the percentage into 1, as shown above.

Example

For example, to determine the food cost percentage of a restaurant that has projected sales of \$10 000 and labor costs of \$6000, overhead of \$1000, and a goal of before-tax profits of \$500, the following procedure is used: food costs = sales – (labor costs + overhead + profit)

$$= \$10\,000 - (\$6000 + \$1000 + \$500)$$

$$= \$10\,000 - (\$7500)$$

$$= \$2500$$

$$\text{food percentage} = \text{food costs/sales}$$

$$= \$2500/\$10\,000$$

$$= 0.25$$

$$= 25\%$$

$$\text{mark-up margin} = 1/\text{food percentage}$$

$$= 1/25\%$$

$$= 1/0.25$$

$$= 4$$

In this example, the menu prices would be determined by multiplying the portion costs of each item by the mark-up margin of 4. Adjustments would then be made to better fit the prices to local market conditions.

If the application of the derived mark-up margin produces unreasonable prices, then one or more of the projected sales, labor costs, overhead, or profits are probably unreasonable. The advantage of using this system is that it points out (but

does not pinpoint) such problem assumptions early in the process.

A similar approach uses a worksheet as shown in Figure 8.1.

Worksheet to Calculate Menu Prices		
Name of item: _____		
Known Costs (per sales dollar):	Operating Cost	_____ %
	Labour Cost	_____ %
	Profit Wanted	_____ %
	Total	_____ %
Subtract this Total from 100 to arrive at TARGET FOOD COST %		Target food cost _____ %
Determine mark-up margin (1/food cost percentage)		Mark-up margin _____
Food Cost:		
One complete serving includes... Yield: _____		Or total recipe includes... Portions: _____
Amount	Item	Cost
		\$ _____
		\$ _____
		\$ _____
		\$ _____
		\$ _____
		\$ _____
		\$ _____
		\$ _____
		\$ _____
Total Food Cost		
Mark-up margin (above)		
Multiply food cost by mark-up margin to arrive at: MENU PRICE		

Figure 8.1 Worksheet to Calculate Menu Prices. Image from [Basic Kitchen and Food Service Management](#). –(CC BY 4.0)

Long description: From the top of the form to bottom:

Name of Item:

Known costs (per sales dollar)

Operating cost as a percentage

Labor cost as a percentage

Profit wanted as a percentage

Total as a percentage

Subtract this Total from 100 to arrive at TARGET FOOD

COST as a percentage

Determine mark-up margin (1 divided by food cost percentage)

Next section is Food Cost

One complete serving includes...

Yield...

Or total recipe includes...

Portions...

Next section is an empty table with 3 columns: Amount, Item and Cost

The bottom section has 3 items:

Total food cost

Mark-up margin (above)

Multiply food cost by mark-up to arrive at: MENU PRICE

End long description.

In the middle section of the worksheet in Figure 8.1, a food cost percentage is determined by subtracting other known cost percentages from 100%. Food costs are then determined in the bottom half of the sheet and a menu price derived by multiplying the total cost by the mark-up margin.

In this pricing method, a “profit wanted” percentage is added to the cost of each menu item. This builds some potential profit into the menu prices. If you were to price everything according to costs only, the restaurant would only ever be able to break even and never turn a profit.

Contribution Margins

On the surface, it seems that the lower the food cost, the more room there is for profit. In one sense this is true, as the percentage profit is obviously greater for an item that has a food cost percentage of 25% (or 75% percentage profit) than an item that has a food percentage cost of 45% (or 55% percentage profit). However, in terms of monetary profit, the

issue is not that straightforward. What has to be determined is how much money the menu item generates. This calculation involves finding the contribution margin of each item.

Contribution Margins

Contribution margin is determined by subtracting the cost from the selling price. An item that costs \$2.00 to make and sells for \$3.00 has a contribution margin of:

$$\begin{aligned}\text{contribution margin} &= \text{selling price} - \text{cost price} \\ &= \$3.00 - \$2.00 \\ &= \$1.00\end{aligned}$$

Consider the contribution margin of two menu items that have different food costs and food cost percentages shown in Table 8.1.

Table 8.1 Compares Chicken and Steak on Food Cost, Selling Price, Food Cost Percentage and Contribution Margin

Item	Food Cost	Selling Price	Food Cost %	Contribution Margin
Chicken	\$4.50	\$16.50	27%	\$12.00
Steak	\$9.00	\$24.00	38%	\$15.00

Table 8.1 Compares Chicken and Steak on Food Cost, Selling Price, Food Cost Percentage and Contribution Margin

In terms of percentage profit, the chicken is higher. However, in terms of money in the till, the steak creates more money that can be used to pay bills. The key to a good menu is not necessarily to just keep food cost percentages low; it is to also to keep contribution margins high.

Pricing “all you can eat” menus

Menu offerings such as buffets and salad bars offer a different challenge when it comes to pricing. Actually the pricing can be done using the calculations described previously. The challenge is calculating the unit cost or “plate cost” which has to be established prior to setting a price. The simple formula for “plate cost” is dividing the total food cost by the number of customers served. Calculating the total food cost requires keeping track of what is used on the buffet or salad bar on an average day or meal period. To do this track product usage by recording the number of servings at the beginning of the serving period, adding any additional servings as needed during the service time, and then subtract the number of portions left at the end of the serving period. Multiply the total number of servings (portions) used by the cost per serving for a total food cost for each offer on the buffet or salad bar. Then calculate the total dollar amount of product used and divide by the number of customers served. See the sample chart below.

Example: Buffet Menu Offerings

Table 8.2 Calculating Menu Item's Total Production Cost

Menu Item	Number of portions at start	Number of portions added	Number of portions at close	Total portions used	Recipe cost per portion	Total product cost
Macaroni & Cheese	50	25	5	70	\$.75	\$52.50
Chicken Wings	50	50	8	92	\$.80	\$72.00
BBQ Ribs	50	40	3	87	\$1.10	\$95.70
Potato Salad	40	20	10	50	\$.60	\$30.00
Macaroni Salad	30	20	5	45	\$.50	\$22.50
Tossed Salad	25	10	5	30	\$.70	\$21.00
Total Buffet Cost	blank	blank	blank	blank	blank	\$293.70

Table 8.2 Calculating Menu Item's Total Production Cost

Once the total cost of the buffet is established, divide by the number of customers served. Example: \$293.70 divided by 66 customers = \$4.45 (This is the plate cost or cost per serving that should be used for setting the menu price for the buffet.)

SPECIAL PRICING STRATEGIES

Various pricing strategies are also used to drive business in a foodservice operation. These include things like bundling (combo meals), value pricing and couponing, all of which are probably familiar concepts to most. These pricing approaches strive to either increase the number of customers patronizing the operation or increase the average check or the amount each customer spends. The end goal – increase revenue!

Bundling

Bundling is combining a group of menu items, typically

an entrée, side and beverage, and selling the items together for one price, sometimes called a combo meal. The combined price is typically a bit cheaper than if the menu items were purchased separately, but the “bundle” price often increases the average check for each customer, thus bringing in more revenue overall for the operation. The availability of combo meals could also positively influence a customer’s decision to visit a foodservice operation.

Value Pricing

An example of value pricing is the \$1(or \$2) menu. These are items that will contribute a reduced contribution margin to the foodservice business and are sometimes called “loss leaders.” The idea is that the price of a few popular menu items is reduced to encourage customers to visit the operation for these great values thus increasing the total number of customers for the operation. Happy hour at many bars and restaurants often has some sort of value pricing on a few beverage options. The intended result is more customers which leads to more revenue. The hope with the value pricing of menu and beverage items is that customers will also purchase other menu items with a higher contribution margin and increase profits overall.

Couponing

Can you think of some examples of different types of coupons used by restaurants and other foodservice operations? How about “buy one, get one free (or second item half price), or 20% off an entrée between the hours of 4pm to 5pm or on Monday evenings (typically slower times for restaurants.) Coupons may be paper or electronic. This pricing strategy allows a foodservice operation to target the general public, perhaps in an attempt to gain new customers, or reward a specific customer, perhaps those who are part

of a loyalty program or celebrating a special occasion, such as a birthday. Either way, the overall goal of couponing is typically to increase the number of customers, thus increasing overall revenue.

The Pricing Challenge

Foodservice managers responsible for pricing menu items will find that they need to draw on not only the math of recipe costing and pricing factors but also the psychology behind designing the actual physical menu, which is a major marketing tool in this business. Understanding the target customers' needs and wants along with the price/value relationship for those customers is a significant responsibility for whoever makes the final decision on menu prices for a foodservice operation.

REVIEW QUESTIONS:

- What factors should be considered in addition to costs when setting menu prices?
- Why are using a mark-up factor and using a food cost percentage to set a minimum selling price basically the same?
- What are some situations where using couponing, bundling and value pricing could be “good practices” for a restaurant?
- Why is it important to consider the price-value relationship when setting menu prices?
- Why is it important to consider both food cost percentages and contribution margins when deciding on a menu mix? How do these two types of data analysis relate to blended pricing?

- How is calculating a plate cost and pricing a salad bar or buffet related?

REVIEW EXERCISES



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<https://psu.pb.unizin.org/hmd329/?p=229>



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Chapter 9 - Menu Analysis (Engineering)

This chapter is remixed from [*Basic Kitchen and Food Service Management*](#) by The BC Cook Articulation Committee.

Chapter Outline:

- Introduction to menu analysis
- Calculating average contribution margin
- Profitability of menu items
- Calculating average popularity
- Menu revisions
- Using specials and feature items
- Arranging items on the menu

Learning Objectives:

- Explain menu analysis using the contribution margin method
- Suggest marketing and menu mix strategies for menu items based on menu analysis (high and low

contribution margins combined with popularity)

- Suggest strategies for managing food cost and revenue based on a menu analysis

Key Terms:

- **Menu analysis**
- **Contribution margin**
- **Profitability**
- **Popularity**

MENU ANALYSIS

A basic menu analysis determines how often each item on the menu is sold. This basic statistic can be used with cost percentages, menu prices, and sales values to make generalizations about the relative value of each menu item. Figure 1 shows a menu analysis worksheet for a lunch menu. Most POS systems can generate this type of information at the end of a shift, day, week, or month.

Menu Item	Total Sold	Menu Price	Portion Cost	Food Cost %	Portion C.M.*	Total Food Sales	Total Food Cost	Total C.M.*
Hamburger	12	\$10.95	\$2.75	25%	\$8.20	\$131.40	\$33.00	\$98.40
Cheeseburger	8	\$11.95	\$4.25	36%	\$7.70	\$95.60	\$34.00	\$61.60
BLT Sandwich	10	\$11.95	\$3.75	31%	\$8.20	\$119.50	\$37.50	\$82.00
Ham sandwich	5	\$10.95	\$3.50	32%	\$7.45	\$54.75	\$17.50	\$37.25
Fried Chicken	4	\$14.95	\$5.25	35%	\$9.70	\$59.80	\$21.00	\$38.80
Clubhouse	6	\$12.95	\$4.00	31%	\$8.95	\$77.70	\$24.00	\$53.70
Steak Sandwich	5	\$15.95	\$7.25	45%	\$8.70	\$79.75	\$36.25	\$43.50
Totals	50	-	-	-	\$618.50	\$618.50	\$203.25	\$415.25

Chapter 9, Figure 1

*C.M.= contribution margin

The statistics provided in a menu analysis have several uses. For example, the total sold statistics can be used to predict what future sales numbers will be. This information is valuable for ordering supplies and organizing the kitchen and kitchen staff to produce the predicted number of items.

Even more important than popularity is the contribution margin of each item. Often an average contribution margin is found and compared with the contribution margin of individual items.

Average Contribution Margin

The average contribution margin in the example above is

found by dividing the total contribution margin (total of Column I) by the number of sales (total of Column B):
 average margin = total margin/number of sales= $\$415.25/50 = \8.31

The contribution margin for each item is found by subtracting the cost of the item from the selling price. In the example in Figure 1, the contribution margins are given in Column F.

Some decisions can be made comparing items:

- The hamburgers, cheeseburgers, BLTs, and ham sandwiches are below the average contribution margin. The first three items are good sellers and account for over half of the sales ($30/50 = 60\%$) and they may be able to pull their weight by slightly increasing their prices. By adding \$0.50 to the menu price of each of these items, they would each have a contribution margin above or close to \$8.31.
- The ham sandwich is significantly lower than the average margin and is also low in sales. It might be best to drop this item from the menu and replace it with something else.
- The fried chicken has a good contribution margin but its sales are a little on the low side. To increase sales, the chicken might be given more prominence on the menu or might be offered as part of a special with a small salad for a slight increase in price. As long as the additions have a reasonable food cost percentage and are inexpensive compared to the portion cost of the

chicken, the increase in sales should have a positive impact on the total contribution margin (the values in Column I).

The type of menu analysis must be tempered with common sense. Because averages are used to determine an acceptable margin or level of sales, some menu items will automatically be under the average just as some will have to be above the average. If items that are under the average are replaced, the next time a menu analysis is done there will be a new average and other items under that average. Taken logically, your menu options will run out before you have every item being exactly at the average!

Given that menu items are usually broken down into categories, this type of analysis is most effective when comparing similar items. An analysis of all of the desserts or starters to compare their margins is much more effective than comparing the margin of a dessert against a lobster dinner, which by the very nature of its price and cost will always have a higher contribution margin.

PROFITABILITY

You want to sell menu items that have a high margin of **profitability**. The relative profitability of an item is calculated by comparing its contribution margin to the average contribution margin (ACM) of all items. The contribution margin is the selling price of a menu item minus the standard food cost of the item. This is the amount that the item contributes to the labor cost, other costs of doing business, and profit. The ACM equals the total contribution margin divided by total numbers of items sold. Profitable

items have a contribution margin equal to or higher than the ACM.

Desserts and appetizers may have lower contribution margins than entrées. This is because these items generally have lower prices and cannot contribute the same dollar value of contribution margin, even though their food cost percentage may be lower than entrée items. Also, the restaurant may wish to tempt patrons to add these items to their purchase, increasing the average cheque size. If you can sell more to an individual guest, you increase the revenues without increasing the labor costs and other costs to the same extent.

For example, if the customer orders an appetizer before the entrée, he or she does not take up any more time in the restaurant (that is, the customer does not decrease seat turnover) because the appetizer is served and eaten during the normal waiting time for preparing the main dish. As well, the additional labor of the server is minimal because even without ordering an appetizer service may still be needed to provide additional bread or refill water glasses. Thus, the sale of the appetizer will increase the profitability of the restaurant even though the contribution margin is not as high.

Desserts may also have a low contribution margin. Often desserts are purchased ready-made (e.g., cakes and cheesecakes). There may be little labor cost in serving these items so the overall contribution of the dessert item to profitability is high.

Items that require little preparation (that is, have a low labor cost) may still generate a significant contribution to margin even when their food costs are higher. Even if the food cost of the item was very high and the CM low, you would want to keep this item because the combined labor

cost and food cost is low. Thus the amount this item contributes to the fixed cost of the business is high.

Potential Profitability of Menu Items

To determine the potential profit in a menu item, you must have a good idea of the potential cost of producing the item. Pre-costing the menu means you determine the cost of producing every item on the menu under ideal conditions. The assumption is that cooks will follow directions, the portions will be accurately measured, and all the portions will be sold. The results are the optimum costs; in reality, costs could be higher.

Popularity

Another factor to consider when reviewing your menus is the popularity of an item. Popularity is determined by comparing sales of items to expected popularity. The expected popularity is the predicted menu mix (sometimes called the sales mix) if each of the menu items in a category were equally popular.

An example is provided in Figure 2, which lists seven appetizers. The expected popularity would be 100% divided by 7 (the number of menu items) or 14.3%. Menu analysis assumes that popular items have sales of 70% or more of the expected popularity. In the example, appetizers would have to exceed 10% (70% of 14.3%) of appetizer sales in order to be considered popular. Which of the items is popular?

Menu Item	Total Sold	Menu Price	Portion Cost	Food Cost %	Portion C.M.	Total Food Sales	Total Food Cost	Total Food C.M.
Thai Wings	31	\$6.25	\$1.93	28.59%	\$4.82	\$59.83	\$209.25	\$149.42
Dry Ribs	211	\$6.75	\$1.72	25.48%	\$5.03	\$362.92	\$1,424.25	\$1,061.33
Nachos	71	\$6.95	\$1.53	22.01%	\$5.43	\$108.63	\$493.45	\$384.82
Calamari	19	\$7.50	\$2.23	\$29.73%	\$5.27	\$42.37	\$142.50	\$100.13
Soup & Salad	78	\$5.95	\$1.55	26.05%	\$4.40	\$120.90	\$464.10	\$343.20
Thai Salad	129	\$6.45	\$1.68	\$26.05%	\$4.77	\$216.72	\$832.05	\$615.33
Cajun Caesar	130	\$6.95	\$1.76	25.32%	\$5.19	\$228.80	\$903.50	\$674.70
Total Appetizer	669	-	-	ACM =	\$4.98	\$1,140.70	\$4,469.10	\$3,328.40

*C.M.= contribution margin

You can see at a glance that Dry Ribs is the most popular appetizer, followed by Thai Salad and Cajun Caesar. Nachos and Soup & Salad fall just slightly over the 10% boundary. Thai Wings and Calamari show dismal results in terms of popularity with only 4.63% and 2.84% of appetizer sales.

Sales of menu items are analyzed to put menu items in four categories:

- Popular and profitable
- Popular but not profitable
- Not popular but profitable
- Neither popular nor profitable

Figure 3 displays a graph showing the popularity of the appetizers from the example over these four categories. The

graph shows popularity on the vertical axis and contribution margin on the horizontal axis. A line is drawn vertically to indicate the ACM and horizontally to show 70% of expected popularity. This allows you to see at a glance which category an item falls into.

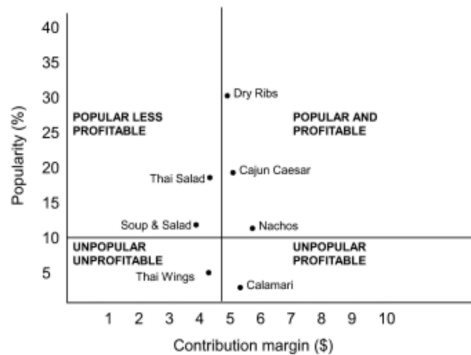


Figure 9.1 Analysis of popularity and profitability.

Long description:

The graph has an X axis, and a Y axis. The X axis is labeled "Contribution Margin (\$)", starts at 0, ends at 10, and is incremented in intervals of 1. The Y axis is labeled "Popularity (%)", starts at 0, ends at 40, and is incremented in intervals of five. Both Axis start at 0 and do not go negative. Within the graph are 4 subsections of the graph. Popular Less Profitable (upper left section), Popular and Profitable (upper right section), unpopular unprofitable(bottom left), and unpopular profitable (bottom right). These subsections are used as a key to determining what menu item falls where.

End long description

The graph shows that Thai Wings and Calamari were very unpopular menu items, but it also provides information on profitability? Thai Wings has a contribution margin that is lower than the ACM for appetizers. Calamari has a contribution margin that is higher than the ACM.

Computer programs may automatically calculate contribution margins and popularity. The information may be presented in tables or spreadsheets as shown above, or in a four-box analysis, with less detail, as shown in Table 9.1.

Table 9.1 Profitability of Popular and Unpopular Items

<i>Popularity</i>	<i>Unprofitable</i>	<i>Profitable</i>
<i>Popular</i>	<i>Thai Salad – (4.65, 19.28)</i>	<i>Dry Ribs – (5.03, 31.54)</i>
	<i>Soup and Salad – (4.40, 11.66)</i>	<i>Cajun Caesar – (5.19, 19.43)</i>
<i>Unpopular</i>	<i>Thai Wings</i>	<i>Calamari</i>

Table 9.1 Profitability of Popular and Unpopular Items

MENU REVISIONS

Popular and profitable items are ones you want to maintain on your menu. Maintain the specifications of the item rigidly. Do not change the quality of the product served. Feature the item in a prominent location on the menu. You want to sell this item, so make sure that customers see it. Have servers suggestively sell the item. For example, when asked for suggestions, they could say, “You may want to try our Linguine Chicken. It is very popular. It has a cream sauce with lots of fresh basil.” Test the possibility of increasing prices by raising the price slightly.

If an item is popular but not profitable, you want to see if you can increase the contribution margin without reducing its popularity. Increase prices carefully and gradually. If the item is attractive because of its high value, it may still be a good value after a price increase. You could also increase the contribution margin by reducing the cost of the accompaniments. For example, you might substitute less costly vegetables. You might also try to reduce costs by decreasing the portion size. If you are unable to improve the item's popularity, you may want to relocate it to a lower profile part of the menu. If the item has a very low labor cost, you may be able to justify the lower contribution margin because less revenue is needed to compensate for the labor cost.

Not popular but profitable items are often a puzzle. You want to sell these items, but your challenge is to encourage the guests to buy them. Shift demand to these items by repositioning them on the menu. Encourage servers to suggestively sell these items. Consider decreasing the price slightly or adding value by offering a larger portion size, more expensive accompaniments or garnishes. However, you need to be cautious so that you do not change the item into a popular but unprofitable item.

Items that are neither popular nor profitable are obvious candidates to remove from the menu. They are not pulling their weight. The only time such an item might be left on the menu is if it provides an opportunity to use leftovers and has low labor costs associated with its preparation.

Using Specials and Feature Items

Another way to balance the menu is by using daily specials and feature items. For example, assume you have been tracking your food costs using a daily food cost control sheet

(refer to Chapter 8, Figure 3)... It is halfway through the month and you are running a slightly higher than average food cost for the month so far. Choosing to run specials that have lower food costs or having the staff feature and promote better food cost items should help to bring the targets in line by the end of the month.

Arranging Items on the Menu

Another way of engineering the menu is by strategically arranging the items on the menu. Some menus use callout or feature boxes to highlight certain items, others have pictures featuring certain menu items, and others may note an item as a house specialty. These are all ways to attract the attention of the customer, and in most cases, you will find that it is these items that sell the best. If these items also have high contribution margins and/or low food costs, they will increase profitability. Featuring the items with the lowest margins and highest food costs will have the opposite effect, and likely mean that you will not be in business for very long. There are also some psychological reasons that things will sell on a menu. Often the most expensive or the least expensive item will not sell as well as other items on the menu because customers do not want to appear either extravagant or cheap in front of their guests. Using descriptions that entice the customer (e.g., “award-winning,” “best in the city”) will increase the sale of a particular item, but make sure you can deliver on the promise! All in all, balancing the menu is something that takes time and experience to do well, but is a skill that you will need to run a profitable kitchen.

REVIEW QUESTIONS

- What is the difference between food cost % menu

analysis and contribution margin menu analysis?

- Why must the total contribution margin for all menu items be calculated in order to calculate the average contribution margin for a full menu? OR (Why can't the average contribution margin be calculated by taking the average of the individual contribution margins for each menu item?)
- What actions might a foodservice manager take regarding various menu items after completing a menu analysis?
- Why should menu analysis be tempered with common sense?
- Why can it be a good idea to try to sell appetizers and desserts even though they may have a lower than average contribution margin?
- How are menu analysis (engineering) and menu psychology related?

REVIEW EXERCISES



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Dessert Strategy Question:

Based on the following menu analysis, the management team divided the four dessert items into four categories. Match menu items with an appropriate strategy to increase the profitability of this dessert cafe:

Popularity	Unprofitable	Profitable
Popular	Cheesecake	Chocolate mousse
Unpopular	Fruit Tart	Tiramisu



An interactive or media element has been excluded from this version of the text. You can view it online here:

<https://psu.pb.unizin.org/hmd329/?p=226>

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Section 3 -
Managing
Procurement and
Food Production

Chapter 10 - Managing Inventory Control and Procurement

This chapter is remixed from [*Basic Kitchen and Food Service Management*](#) by The BC Cook Articulation Committee.

Chapter Outline:

- Basic inventory procedures
- Systems to track and record inventory
- Receiving inventory and invoices
- Requisition systems
- Inventory record keeping
- Computerized inventory control
- Pricing and costing for physical inventory
- Factors affecting inventory levels
- Inventory turnover
- Days of inventory on hand
- Procurement Process
- Purchasing defined – buying versus ordering

- Three ways to increase your value (as a buyer/customer)
- Market sourcing
- Choosing suppliers
- Factors that Impact Prices
- Product Specifications
- Contract Buying
- Purchasing Procedures
- Production Control Chart

Learning Objectives:

Inventory and Inventory Control

- Describe inventory systems and procedures used in foodservice operations
- Calculate and explain the importance of inventory valuation
- Calculate and explain the meaning of inventory turnover ratio
- List factors in determining amount of inventory to carry
- List “best practices” related to managing inventory (Eg. Frequency of performing physical inventory, etc.)

Receiving

- List critical steps in receiving process
- Explain relationship between purchasing, food

specifications and receiving function

- Describe how things can go wrong...where money can be lost in the process?
- Explain purpose and importance of the supplier invoice in the receiving process

Storage and Issuing

- Define FIFO
- List best practices for issuing procedures to control costs in a foodservice operation

Procurement/Purchasing

- Describe the key “players” in the procurement process
- Explain how inventory and purchasing functions are related
- Explain the steps in the purchasing process
- Describe characteristics of a valued “customer” buyer
- List factors to consider in choosing suppliers
- Explain concept of “good service” from a supplier/vendor.
- List factors impacting food and supply prices
- Describe importance and key components of product specifications
- Explain steps in the ordering process.
- Determine amount to order given inventory (par

level and on hand amount)

- List information typically included on a purchase order
- Recognize ethical issues related to purchasing

Key Terms:

- Inventory
- Receiving
- Invoice
- Requisition
- Perpetual inventory
- Physical inventory
- Par stock
- Inventory price extension
- Point-of-Sale (POS) system
- Holding cost
- Ordering cost
- Shortage cost
- Inventory turnover
- Procurement
- Purchasing
- Buying
- Ordering
- Cherry-picking

- **Vendor**
- **Distributor**
- **Broker**
- **Manufacturer**
- **Specifications**
- **Contract Buying**
- **Par levels**
- **Amount on hand**
- **Line item bid award**
- **Market basket bid award**
- **Purchase order**

Preface

This chapter has a sort of circular nature to it. It begins by discussing inventory and inventory control, but of course, there is no inventory if the procurement process has not been completed. The product is purchased, ordered, received, and stored, which brings us back to inventory control.

BASIC INVENTORY PROCEDURES

A key component in effective kitchen management is inventory control. By knowing what supplies are on hand at a given time, the manager will be able to plan food orders, calculate food costs since the previous inventory, and make menu item changes if needed. By keeping an eye on inventory, it is possible to note potential problems with pilferage and waste.

Managing inventory is like checking a bank account. Just

as you are interested in how much money you have in the bank and whether that money is paying you enough in interest, so the manager should be interested in the value of the supplies in the storeroom and in the kitchen.

An inventory is everything that is found within your establishment. Produce, dry stores, pots and pans, uniforms, liquor, linens, or anything that costs money to the business should be counted as part of inventory. Kitchen items should be counted separately from the front of the house and bar inventory and so forth.

Regardless of the size of your operation, the principles of inventory control are the same. In larger operations there will be more people and sometimes even whole teams involved with the various steps, and in a small operation, all responsibility for managing the inventory may fall on one or two key people. Effective inventory control can be broken down into a few important steps:

- Set up systems to track and record inventory
- Develop specifications and procedures for ordering and purchasing
- Develop standards and procedures to efficiently receive deliveries
- Determine the frequency and processes for reconciling inventory
- Analyze inventory data and determine any areas for improvement

Setting Up Systems to Track and Record Inventory

One of the reasons you take inventory is to determine food costs and to work out cost percentages. There are several

procedures that simplify finding the value of goods in storage. These techniques are based on keeping good records of how much supplies cost and when supplies were purchased. The temptation in small operations is to treat inventory control casually. Perhaps there are only one or two people doing the purchasing and they are usually aware of the supplies that are on hand. This doesn't eliminate the need to track purchases against sales to see if you are managing your costs as well as you can.

Almost all inventory control procedures are time-consuming. Moreover, such records must be kept up-to-date and done accurately. Trying to save a few hours by cutting back on the time needed to keep inventory records may be money poorly saved. The simplest method for tracking inventory is using a spreadsheet. A simple spreadsheet might list all of the products that are regularly purchased, with the current prices and the numbers on hand at the last inventory count. The prices can be updated regularly as invoices are processed for payment, and a schedule can be set to count the product on hand.

In large operations, the systems need to be more sophisticated as there are more people involved. Purchases might be made by a separate department, inventory records might be kept by a storeroom clerk, and the tracking and counting of inventory might be tied to a system using scanners and barcodes, which in turn may be linked with your sales system so that there is always a record of what should be in stock. No matter the depth of detail used, having a system to track inventory gives managers a good idea of supplies on hand and a tool to use to manage costs.

Incoming Inventory

The primary reason for establishing a consistent method

for accepting ordered goods is to ensure that the establishment receives exactly what has been ordered. Errors frequently occur, and unless the quantity and quality of the items delivered are carefully checked against what was ordered, substantial losses can take place. When receiving procedures are carefully performed, mistakes that could cost the restaurant time and money are avoided. In addition, an effective receiving method encourages honesty on the part of suppliers and delivery people.

Invoices

The most important document in determining if the goods received are the goods ordered is the invoice. An invoice is an itemized list of the goods or products delivered to a food preparation premise. An invoice shows the quantity, quality, price per pound or unit, and, in some cases, the complete extension of the cost chargeable. Only by carefully comparing and checking can you be sure that the information on the invoice tallies with the products received. This comparison may require that items be weighed and/or counted.

Whenever possible, the receiver should check the invoice against the purchase order or purchase request slips. This will ensure that the quantity and price of the goods shipped match those listed on the order form. If the invoice is not checked against the purchase order when the goods arrive, there is the potential that you will be missing products you need or receive products that were not ordered or are in incorrect quantities.

In addition, the quality of the goods should be determined before they are accepted. For example, boxes of fresh produce and frozen foods should be opened and inspected to ensure

quality. When you are satisfied that the delivery is in order, sign the invoice.

In most cases, the invoice is in duplicate or triplicate: you keep the original and the delivery driver retains the other copy or copies. Once you have signed, you have relieved the delivery company of its responsibilities and the supplies now belong to your company. You may, therefore, become responsible for any discrepancies between what is on the invoice and what has been delivered. It is good practice to bring any discrepancies or errors to the attention of the driver and have him or her acknowledge the mistake by signing the invoice. If a credit note is issued, that should also be marked on the invoice by the driver.

Do not sign the invoice until you are sure that all discrepancies have been taken care of and recorded on the invoice. Take the signed invoice and give it to whoever is responsible for collecting invoices for the company.

The receiving of deliveries can be time-consuming for both the food establishment and the delivery service. Often the delivery people (particularly if they are not the supplier) will not want to wait while these checks are done. In this case, it is important that your company has an understanding with the supplier that faults discovered after the delivery service has left are the supplier's problems, not yours. Once the invoices have been signed, put the delivered products in the proper locations. If you are required to track incoming inventory, do so at the same time.

Outgoing Inventory

When a supply leaves the storeroom or cooler, a record must be kept to track where it has gone. This is often done using an internal requisition form. In most small operations, the supplies go directly to the kitchen where they are used to

produce the menu items. In an ideal world, accurate records of incoming and outgoing supplies are kept, so knowing what is on hand is a simple matter of subtraction.

Unfortunately, systems aren't always that simple. In a smaller operation, knowing what has arrived and what gets used every day can easily be reconciled by doing a regular count of inventory. In larger operations and hotels, the storage rooms and coolers may be on a different floor than the kitchen, and therefore a system is needed that requires each department and the kitchens to requisition food from the storeroom or purchasing department, much like a small restaurant would do directly from the supplier. In this model, the hotel would purchase all of the food and keep it in a central storage area, and individual departments would then "order" their food from the storerooms.

Requisitions

To control inventory and to determine daily menu costs in a larger operation, it is necessary to set up a requisition procedure where anything transferred from storage to the kitchen is done by a request in writing. The requisition form should include the name and quantity of the items needed by the kitchen. These forms often have space for the storeroom clerk or whoever handles the storeroom inventory to enter the unit price and total cost of each requested item (Figure 1). In an efficiently run operation, separate requisition forms should be used by serving personnel to replace table supplies such as sugar, salt, and pepper. However, often personnel resist using requisition forms because they find it much easier and quicker to simply enter the storage room and grab what is needed, but this practice leaves no record and makes accurate record-keeping impossible. To reduce the possibility of this occurring, the storage area should be secure with only

a few people having the right to enter the rooms, storage freezers, or storage refrigerators.

Date: _____

Department: Food Service

Table 10.1 Calculating Unit and Total Cost of Items

Quantity	Description	Unit Cost	Total Cost
6 #10 cans	Kernel Corn	—	—
55 lbs	Sugar	—	—
44 lbs	Ground Beef	—	—
6 each	Kernel Corn	—	—

Table 10.1 Calculating Unit and Total Cost of Items

Not only does the requisition keep tabs on inventory, but it also can be used to determine the dollar value of foods requested by each department and so be used to determine expenses. In a larger operation where purchases may be made from different suppliers at different prices, it may be necessary to tag all staples with their costs and date of arrival. Expensive items such as meats are often tagged with a form that contains information about weight, cost per unit (piece, pound or kilogram), date of purchase, and name of supplier. Pricing all items is time consuming, but that time will soon be recovered when requisition forms are being filled out or when the stock has to be given a monetary value. In addition, having prices on goods may help to remind staff that waste is costly.

Inventory Record Keeping

There are two basic record-keeping methods to track inventory. The first is taking perpetual inventory. A perpetual inventory is simply a running balance of what is on hand.

Perpetual inventory is best done by keeping records for each product that is in storage, as shown in Table 10.5.

Table 10.2 Reorder Point of Canned Peaches

Item: <u>Canned Peaches</u>
Reorder Point: <u>10</u>

Table 10.2 Reorder Point of Canned Peaches. The table displays the first half of the full table header. The full table is made up of two halves. Each half has two tables in it, 4 total displayed. This half of the table header shows the item and reorder point.

Table 10.3 Purchase UnitSize and Par Stock of Canned Peaches

Purchase Unit Size: <u>#10 Can</u>
Par Stock: <u>15</u>

Table 10.3 Purchase Unit Size and Par Stock of Canned Peaches. The second (right) half of the table header that displays the size of the unit being re-ordered, and the par stock.

Table 10.4 Recording Dates of the Inventory, How Much of That Item the Business Received(in), Sold(out), and Total Balance.

<i>Carried</i>	<i>Forward</i>	<i>From</i>	<i>6/15</i>
Date	In	Out	Balance
6/16	—	3	12
6/17	—	3	9
6/18	6	—	15
6/19	—	2	13
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

Table 10.4 Recording Dates of the Inventory, How Much of That Item the Business Received(in), Sold(out), and Total Balance. The second part of the first (left) table half. Displayed below the first part of the table header, this part features dates of the inventory recorded along with how many of that item the business received(in), sold(out), and total balance.

Table 10.5 Recording In, Out, and Balance of the Unit Size of the Item Being Purchased.

<i>Carried</i>	<i>Forward</i>	<i>From</i>	_____
Date	In	Out	Balance
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

Table 10.5 Recording In, Out, and Balance of the Unit Size of the Item Being Purchased. The second part to the second (right) half of the full table featured, this part features blank space intended to be used for recording in, out, and balance of the unit size of the item being purchased.

When more of the product is received, the number of cans or items is recorded and added to the inventory on hand; when some of the product is requisitioned, the number going out is recorded and the balance is reduced. In addition, the perpetual inventory form can indicate when the product should be reordered (the reorder point) and how much of the product should ideally be on hand at a given time (par stock). In large operations, this record-keeping is likely all computerized. In small operations, a perpetual inventory is usually only kept for expensive items as the time (and cost)

of keeping up the records can be substantial. This system is often based on an ABC inventory analysis where “A” items are the most expensive, perhaps top 20%, “B” items in the middle 50%, and the least expensive, perhaps 30%, “C” items. “A” items are prioritized and may be carefully tracked and physically counted on a weekly or even daily basis, whereas “B” and “C” items may only be counted on a monthly basis and may not be tracked with a perpetual inventory.

The second inventory record-keeping system is taking a physical inventory. A physical inventory requires that all items in storage be counted periodically. To be an effective control, physical inventory should be taken at least monthly. The inventory records are kept in a spreadsheet or in another system reserved for that purpose. The inventory sheet (Table 10.6) can list the items alphabetically or in the order they will appear on the shelves in the storage areas.

Month: March

Table 10.6 Physical Inventory Form

Product	Unit	Count	Unit Price	Total Value
Lima Beans	6 #10 Can	4 1/3	\$23.00	\$99.60
Green Beans	6 #10 Can	3 5/6	\$28.95	\$110.98
Flour	55 lbs	3	\$14.85	\$44.55
Rice	110.2 lbs	1	\$32.50	\$32.50
—	—	—	Total	\$593.68

Table 10.6 Physical Inventory Form. The table displays a product

and its unit, count, unit price, and total price. four items are listed, then a total of all the products. called a physical inventory form.

In addition to the quantity of items, the inventory usually has room for the unit cost and total value of each item in storage. The total values of the items are added together to give the total dollar value of the inventory. This is also known as extending the inventory. The total value of the inventory is known as the closing inventory for the day the inventory was taken. This amount will also be used as the opening inventory to compare with the next physical inventory. If the inventory is taken on the same day of each month, the figures can be used to accurately determine the monthly food cost. The physical inventory is used to verify the accuracy of the perpetual inventory. For example, if 15 whole beef tenderloins are counted during a physical inventory, but the perpetual inventory suggests that there should be 20 tenderloins on hand, then a control problem exists and you need to find the reason for the variance.

Computerized Inventory Control

Most people today use computerized systems to calculate, track, and extend inventory. These systems enable the restaurant to have much tighter and more accurate control over the inventory on hand and the costs of that inventory. Having access to information such as ordering history and the best price paid is just one of the benefits of these systems. They can also help the purchaser predict demand levels throughout the year. These programs in many cases are also integrated with the point-of-sale (POS) system used to track sales, and can even remove an item from a computerized inventory list when the waiter registers the sale of any menu item on the restaurant terminal. That is if a customer orders

one chicken dish from the menu, all the items required to make one portion of the chicken are discounted from inventory. This provides management with a constant up-to-date perpetual inventory of most inventory items.

Smaller operations will use a spreadsheet application to manage inventory, so you should also be familiar with a program like Microsoft Excel if you are responsible for ordering and inventory. The information required for the program to do the calculations properly is available from the invoices received with your supplies. That is, the quantities and prices of the goods you most recently received should be entered into the computer program either by you or by the restaurant's purchaser. These prices and quantities are automatically used to calculate the cost of the goods on hand. This automated process can save you an enormous amount of time and, if the information entered into the computer is accurate, may also save you money. In any inventory system, there is always a possibility for error, but with computerized assistance, this risk is minimized.

Pricing and Costing for Physical Inventory

The cost of items purchased can vary widely between orders. For example, cans of pineapple might cost \$2.25 one week, \$2.15 the second week, and \$2.60 another week. The daily inventory reports will reflect the changes in price, but unless the individual cans have been marked, it is difficult to decide what to use as a cost on the physical inventory form. There are several different ways to view the cost of the stock on the shelves if the actual cost of each item is difficult to determine. Most commonly, the last price paid for the product is used to determine the value of the stock on hand. For example, if canned pineapple last cost \$2.60 a can and there are 25 cans on hand, the total value of the pineapple

is assumed to be \$65 ($25 \times \2.60) even though not all of the cans may have been bought at \$2.60 per can. Another method for costing assumes the stock has rotated properly and is known as the FIFO (first-in-first-out) system. Then, if records have been kept up-to-date, it is possible to more accurately determine the value of the stock on hand. Here is an example showing how the FIFO system works.

Example

The daily inventory shows the following:

Opening Inventory 15 cans @ \$2.15 = \$32.25

Received on 8th of month 24 cans @ \$2.25 = \$54.00

Received on 15th of month 24 cans @ \$2.15 = \$51.60

Received on 23rd of month 12 cans @ \$2.60 = \$31.20

If the stock has rotated according to FIFO, you should have used all of the opening inventory, all of the product received on the 8th, and some of the product received on the 15th. The 25 remaining cans must consist of the 12 cans received on the 23rd and 13 of the cans received on the 15th. The value of these cans is then

12 cans @ 2.60 = \$31.20

13 cans @ 2.15 = \$27.95

Total = \$59.15

As you can see, the choice of costing method can have a marked effect on the value of the stock on hand. It is always advisable to use the method that best reflects the actual cost of the products.

Key Point – Once a method is adopted, the same method must be used consistently or the statistical data generated will be invalid.

Costing Prepared or Processed Items

When you are building your inventory forms, be sure to calculate the costs of any processed items. For instance, sauces and stocks that you make from raw ingredients need to be costed accurately and recorded on the spreadsheet along with purchased products so that when you are counting your inventory you are able to reflect the value of all supplies on the premises that have not been sold.

Costs Associated with Maintaining Inventory

It should be obvious by now that it is important to maintain an inventory of many types of products in a foodservice operation. There are, however, costs associated with procuring and maintaining that inventory, including holding costs, ordering costs and shortage costs.

Holding cost represents the cost of storing the material (electricity, insurance, security, data processing, handling), financial costs reflect the money that is tied up in inventory, and then there are costs related to deterioration and damage.

Ordering costs are any costs associated with ordering and receiving inventory. These costs consist of salaries of the purchasing and accounting departments, wages in the receiving area, and transportation. For example, if you purchase your weekly food and supplies from four different vendors, you have to place orders with four different salespeople, receive four different trucks, process four different purchase orders and pay four different invoices. If you purchase from only one weekly supplier, these functions are reduced accordingly. This area can also represent a cost-saving, since it may not take any longer to order and process payment for 200 cases than it does to do the same for two cases of a particular item.

Shortage costs are those that occur when the demand

exceeds the supply. Shortages may occur when there is an unexpectedly high demand before new stock items are received. Although some shortages are inevitable, customers are not always understanding when they don't receive the meal they anticipated. While they may not voice their dissatisfaction to the foodservice department, they may tell their friends that the menu you print in your operation is not always the one that is served. This type of comment leads to a negative view of your foodservice operation. Shortages may also lead to paying a higher price for a needed item from another supplier.

Factors Affecting Inventory Levels

There are a variety of factors that affect how much inventory should be kept on hand some of which were mentioned previously in the forecasting chapter. The menu, the frequency of deliveries and lead time needed from order to delivery, the amount of storage space, including cold storage, the location and size of the operation are all examples of factors to consider. Some smaller operations may need to carry higher inventory levels in order to reduce the number of deliveries so that each delivery is large enough to make it worthwhile for a supplier to run a truck to the operation or to avoid shipping costs

Some operations can operate with a "just in time" inventory – based on the working stock needed for the menu. Many operations will be graded on how much inventory they are carrying. Even though the inventory has value, tying up your money in inventory is not wise. It does not gain interest, as your money would if it were invested in other places. The quality of many products will degrade over time, and you may be forced to throw it away. Too much product can also

lead to increased theft. Employees will be more tempted if they see that we are carrying an excess of something.

Inventory Turnover

When accurate inventory records are kept, it is possible to use the data in the records to determine the inventory turnover rate. The inventory turnover rate shows the number of times in a given period (usually a month) that the inventory is turned into revenue. Inventory turnover of 1.5 means that the inventory turns over about 1.5 times a month, or 18 times a year. In this case, you would have about three weeks of supplies in inventory at any given time (actually 2.88 weeks, which is $52 \text{ weeks}/18$). Generally, an inventory turnover every one to two weeks (or two to three times per month) is considered normal.

A common method used to determine inventory turnover is to find the average food inventory for a month and divide it into the total food cost for the same month. The total food cost is calculated by adding the daily food purchases (found on the daily receiving reports) to the value of the food inventory at the beginning of the month and subtracting the value of the food inventory at the end of the month.

That is,

average food inventory = (beginning inventory + ending inventory)/2

cost of food = beginning inventory + purchases – ending inventory

inventory turnover = (cost of food)/(average food inventory)

Example

A restaurant has a beginning inventory of \$8000 and an ending inventory of \$8500. The daily receiving reports show that purchases for the month totaled \$12 000. Determine the cost of food and inventory turnover.

$$\text{Cost of food} = \$8000 + \$12\,000 - \$8500 = \$11\,500$$

$$\text{Average food inventory} = (\$8000 + \$8500)/2 = \$8250$$

$$\text{Inventory turnover} = \$11\,500/\$8250 = 1.4$$

The turnover rate in the example would be considered low and would suggest that the business has invested too much money in inventory. Having a lot of inventory on hand can lead to spoilage, high capital costs, increased storage space requirements, and other costs.

Inventory turnover rates are not exact, for a few reasons. One is that in many food operations, accurate inventory records are usually kept only for more expensive items. Another is that the simple food cost used in the calculation does not truly reflect the actual food cost. (Food costs are discussed in another chapter in this book.) In addition, not all inventory turns over at the same rate. For example, perishables turn over as quickly as they arrive while canned goods turn over more slowly.

Even though turnover rates are not exact, they do give managers at least a rough idea of how much inventory they are keeping on hand.

Calculating Days of Inventory on Hand

There are two approaches to use to find the days of inventory on hand. If you select the first method, divide the average inventory for the year or other accounting period by

the corresponding cost of goods sold (COGS); multiply the result by 365. The cost of goods sold is reported on the firm's income statement. Compute the average inventory by adding the amount of inventory at the end of the previous year to the value of inventory at the end of the current year and dividing by two.

Inventory figures are stated on the company's balance sheet. Suppose the company reports COGS of \$2.5 million and an average inventory of \$250,000. Divide \$250,000 by \$2.5 million, and multiply by 365. You have 36.5 days of inventory on hand.

Procurement Process

The major goal of the procurement process is to assure the availability of food and supplies in the quantity and quality consistent with operational standards at the most favorable price.

The purchasing process is an essential part of every food service operation. All competent cooks should be skilled in buying the appropriate ingredients, in accurate amounts, at the right time, and at the best price. Every kitchen operation has different purchasing procedures. But there is one rule that should always be followed:

- Buy only as much as it is anticipated will be needed until the next delivery.

This will ensure that foods stay fresh and will create a high inventory turnover. All foods deteriorate in time, some more quickly than others. It is the job of the purchaser to ensure that only those quantities that will be used immediately or in the near future are purchased.

The quality of the food and materials purchased is a major

factor in determining the quality of the menu served in any foodservice operation. Food items can be purchased in many stages of preparation from raw to ready-to-serve. The food buyer must purchase the appropriate market form to meet the menu requirements and operation's quality standards.

Food and materials are a major expense in the restaurant or foodservice department's budget. To meet budgetary goals, a foodservice operation must have a well-organized purchasing program that provides a complete supply of food items, in the amounts needed, at a fair price.

Purchasing is defined as the determination of needs and the placement of the orders with suppliers. The purchasing process can be divided into two activities: **buying** and **ordering**. **Buying** involves decisions regarding where to place orders on the basis of quality, price, and service. Buying is a **management function**. Therefore, the foodservice manager or director usually assumes responsibility for deciding on the suppliers from which to purchase food and supplies. **Ordering** is the determination of the quality and quantity of food and supplies required to satisfy menu requirements, at a price within budgetary guidelines. Ordering is usually a **supervisory function**, and a foodservice supervisor is often given responsibility for ordering. Ordering may also be done by a skilled employee such as an experienced cook, especially in smaller operations.

The individuals responsible for ordering must be familiar with menu requirements; the quantities of food needed; market forms of food; grades and standards; seasons for foods; the food marketing system; and reliable sources of market information. In addition, a food buyer must have some knowledge and understanding of legal responsibilities and ethical practices. Sound business principles and well-stated

purchasing policies are the foundation of a good purchasing program. Fairness, honesty, and trust between the food buyer and the supplier are essential to a good working relationship.

The customer and the supplier depend on each other. The foodservice cannot operate without the merchandise, and the supplier must have a market for his goods. Therefore, a satisfactory “deal” is one that benefits both parties.

The customer, however, needs more than just the product offered by the supplier: (s)he needs the supplier’s expertise and his/her reliable service. To ensure himself/herself the benefits of the buyer/supplier relationship, the buyer should try to be a valued customer. Reliable vendors will always try to protect their valued customers by extending them with the best possible quality, price, and service.

Three Ways to Increase Your Value

A customer can increase his/her value to a supplier in at least three important ways.

First

He/she should place orders of a reasonable size. Because delivery services cost money, most suppliers establish minimum size requirements for orders. In other words, the order has to be big enough to make it worth the supplier’s while to deliver. The buyer should learn what these minimum size requirements are and try to stay above them. Of course, a good supplier will usually help out in an emergency that requires a rush delivery or a small order, but don’t ask for these special favors too often or you’ll end up paying for it.

Second

A customer should not place his/her orders too often. In fact, spacing-out orders help assure that they are kept to acceptable sizes. Very frequent or small orders indicate

inexperience and poor planning on the part of a buyer. Careful planning and accuracy in estimating needs are necessary to build a good relationship with a supplier. If the foodservice operation is large enough, the supplier may be willing to make frequent deliveries, but will usually pass added expenses on to the buyer as the price for the buyer's inefficiency. The acceptable frequency of delivery varies from place to place and is determined principally by the accessibility of the goods and the distance the supplier has to travel to make his deliveries. In large cities, for example, daily deliveries are common. Nevertheless, if a buyer does a fairly small volume of business with a supplier, the buyer should try to place orders only two or three times a week to minimize the supplier's expenses. In rural areas deliveries may be made only once or twice a month, so that it may be necessary for the foodservice operation to maintain an inventory somewhat larger than would normally be desirable. (It is, of course, economically advantageous to keep the inventory as low as possible. Large inventories involve investment insurance, storage, and spoilage expenses.)

Third

A customer should not spread his/her business among too many suppliers. The wise buyer will confine business to a limited number of suppliers who provide acceptable service. This is not to say that the buyer should never order from other companies. It *does* mean, however, that a few suppliers in each food category should receive the lion's share of the business. A buyer may occasionally order from other suppliers, especially if they have something new or interesting to offer, but it is wise to check with the current supplier first before looking elsewhere. **"Cherry picking"** should be avoided. This is a practice of buying each item

from whichever supplier has the lowest cost, no matter the size of the overall order. In some smaller operations, the buyer may choose to use one supplier in each food category; in most cases, it is wise to have more than one supplier.

Market Sourcing

Sources of supply vary considerably from location to location. Large cities have a greater number and variety of suppliers than do small towns and isolated communities. Purchasers should establish contact with available suppliers/vendors such as wholesalers, distributors, local producers and packers, retailers, cooperative associations, as well as brokers, and food importers. In most instances, the person in charge of buying will contact several suppliers to obtain the necessary foods. Some wholesalers diversify their product lines in order to meet all food-related kitchen needs. Food products are obtained from various sources of supply. For example, a packing house supplies meat and meat products, while a food wholesaler supplies dry goods. Once the business is established with a supplier, all transactions should be well documented and kept readily available on file. There are two major food categories: perishables and non-perishables

Perishables

Perishable items include fruits, vegetables, fresh fish and shellfish, fresh meats, poultry, and dairy products. As a rule, perishables are bought frequently to ensure freshness. Frozen foods, such as vegetables, fish and meat products, have a longer lifespan and can be ordered less frequently and stored in a freezer.

Non-perishables

Non-perishable items include dry goods, flour, cereals, and miscellaneous items such as olives, pickles, and other

condiments. These can be ordered on a weekly or monthly basis.

Keep in mind that just because something does not go bad isn't a reason to buy it in quantities larger than you need. Every item in your inventory is equal to a dollar amount that you could be saving or spending on something else. Consider that a case of 1000 sheets of parchment paper may cost \$250. If you have a case and a half sitting in your inventory, but only use a few sheets a day, that is a lot of money sitting in your storeroom.

Choosing Suppliers

When selecting a supplier, it is not enough to consider only the prices, since these, after all, do not necessarily reflect the quality and reliability of goods and services offered by the supplier.

In the very competitive business of foodservice, the quality of one's product is always of paramount importance. From the buyer's standpoint, however, quality does not necessarily always mean "the best." In terms of purchasing, quality means getting the best quality commensurate with the intended use of the product. If, for example, the menu includes soup, the buyer would purchase less expensive, skinless tomatoes rather than the higher quality, more expensive whole tomatoes with skins, which are much too expensive to be used in soup. Similarly, meat that is to be served as an expensive steak should be the best meat available, whereas meat for Swiss steak can be obtained from a variety of inexpensive cuts—and the choice may well depend on their relative cost.

In addition to the criterion of intended use, buyers must consider the product's own characteristics rather than just the recognition of the supplier's brand name. Some packers spend a great deal of money on their brand-name promotions, but

a buyer should never let the brand name alone influence his or her purchasing decisions unless (s)he, in turn, intends to advertise the product to customers by the brand name. (S)he must study the products carefully to determine which provides the best quality for the money. In any market, it takes time to learn which suppliers and labels yield the best results, but in the long run, it is time well spent.

Although most buyers are aware of the importance of considering the price of the product they are buying, they often fail to put a price into a proper perspective with other factors that affect the suitability of particular products. Consequently, they put too much emphasis on buying the cheapest product and may, as a result, actually end up paying more in terms of cost-per-portion and preparation time. For example, in one particular market area, there were three suppliers of a roast round of beef. Two of them consistently offered an inside round at a lower price than the third, but careful yield-testing of the product—that is, determining how many portions were obtained for the total dollar cost—indicated that the company with the highest price was really offering the best buy. Their roasts had the excess fat and bones trimmed more closely than those of the other suppliers.

Canned products should also be evaluated according to the price-yield ratio. One brand may have prices considerably lower than its competitors' but may contain substantially less fruit or vegetables, with more juice or water making up the weight. Or the quality itself may be inferior. This is not to say, of course, that lower-priced commodities are always inferior, but rather that buyers should conduct tests to determine quality and yield for themselves.

The only way to judge canned products effectively is by opening a can and inspecting the contents. If the buyer finds,

for example, that a can of peaches contains fruit with several bruises, (s)he will know that those peaches are not suitable for use in a salad, where appearance is an important factor. Consequently, (s)he will reject that particular product as unsatisfactory for its intended use. To measure the yield of a canned product, the buyer should determine the net drained weight of that product—the weight of the fruit or vegetable after the liquid has been drained off. The cost-per-can divided by the net drained weight in ounces gives the cost per usable ounce. Therefore, when a buyer considers the price of a product, (s)he must consider the price in relation to the amount of the actual product, not just price per weight or volume.

Furthermore, shopping for price alone can cause a loss of trust between the salesperson and the buyer. Salespeople may bypass “price shoppers” on the really good buys because they are not considered to be good customers.

The food buyers’ objective should be to purchase food and supplies from reputable suppliers who meet the following essential criteria:

- They must offer a competitive price structure for a specified quality.
- They must be able to provide good delivery service
- products must arrive in good condition;
- drivers must be courteous
- food and supplies must be delivered on schedule
- They must have specified items in stock, thus avoiding shorts.
- They must be able to provide new product

information; nutritional information related to food purchased; and information on market conditions affecting you.

- Rather than favors, the concept of “good service” refers to a positive attitude on the part of the supplier and the ways in which this attitude benefits the entire foodservice operation—not just the individual employee. The supplier who gives good service is the one who will deliver as frequently as the foodservice operation needs deliveries and at conveniently scheduled times (not during meal service periods).
- has courteous delivery agents who are willing to transport deliveries to the receiving area and check the accuracy of the order.
- consistently provides the quality that the buyer has asked for, or informs the buyer when the quality of the product falls below his or her normal standards and provides the option of canceling the order or accepting the best deal possible.
- keeps prices in line with the market, even without being checked on.
- provides new product information and nutritional information relating to food purchased.
- keeps the buyer informed of market conditions so (s)he can stock up on a required item or alter his or her menu.
- is concerned about the reputation of his or her firm and strives to maintain high standards and quality

service.

Service, then, is the kind of consideration the buyer can expect from one who is conducting a business, values clients, and works hard to keep them satisfied. Friendship is a wonderful thing, but service is what you are paying for.

You should keep in mind, however, that this is a two-way street. You expect good service, but you should also show consideration to the supplier. In the case of an emergency such as a strike, bad weather conditions, or a move to a new warehouse, the supplier may ask you to modify your schedule somewhat. Try to be understanding and cooperative since you will also expect equal consideration.

From Canadian book...

Factors That Impact Prices

Food products, in particular, fluctuate in price over the year, due to many factors:

- ***Seasonality:*** When food is in season, there is more of it available in the local food supply, bringing prices down. Additionally, foods in season are usually of higher quality and have a longer shelf life than those that are out of season and need to be transported long distances to market.
- ***Weather:*** Severe weather can have a huge impact on the cost of food. Drought, flooding, and unseasonable frost have all affected major produce-supplying areas of the world in recent years, causing a rise in prices for many items.
- ***Cost of transportation:*** If the cost of fuel or transportation rises so does the cost of food that needs to travel to the market.

- **Commodity prices:** A number of foods are traded on the commodity market, such as meats and grains. These prices fluctuate as buyers who trade in these products in large volumes buy and sell, much like the stock market.

Before purchasing any food items, ask the following questions.

- When is the item to be used?
- Which supplier has the best price and the best quality? Where an item is purchased should be determined by the price and the quality of the available supplies. When ordering supplies, it is advisable to get prices from at least three sources, then purchase from the supplier who quotes the best price for a comparable quality.
- When will the item be delivered? Depending on the distance of the food service establishment from the supplier, the delivery may take hours or days. Remember, it is extremely difficult to maintain food quality and consistency if you do not know when your order will be delivered. For this reason, menu planning and a running inventory are two of the most important aspects of purchasing procedures.

Product Specifications

Specifications should be written for nearly every item that is purchased. This is critical in the foodservice operation receives federal funding as is the case for some education and healthcare facilities. Writing specifications can be a

demanding and time-consuming job, especially for many different food and supply items, equipment, chemicals, and so on.

Meat, seafood, poultry, processed fruits and vegetables, and fresh fruits and vegetables can be ordered under different specifications. For example,

- Meats can be ordered by grade, cut, weight/thickness, fat limitation, age, whether fresh or frozen, and type of packaging.
- Seafood can be ordered by type (e.g., finfish/shellfish), species, market form, condition, grade, place of origin, whether fresh or frozen, count, size, and packaging,
- Poultry can be ordered by type, grade, class (e.g., broiler, fryer), style (e.g., breasts, wings), size, whether fresh or frozen, and packaging.
- Processed fruits and vegetables can be ordered by grade (sometimes), variety, packaging size and type, drained weight, count per case, packing medium, and whether canned or frozen.
- Fresh fruits and vegetables can be ordered by grade (sometimes), variety, size, weight per container, growing area, and count per container

Below adapted from Canadian book...

Table 10.7 shows an example of a purchasing specification sheet for beef that might be kept in a commercial kitchen or receiving area.

Table 10.7 A Sample Purchasing Specification

Beef	Grade	Weight, Size, and Cut Specifications
Prime rib	Choice	15 lb, fully trimmed
New York strip	Prime	13 lb, Bone out, fully trimmed, max 6 in. width, min
Tenderloin	Prime	6 lb, fully trimmed to silverside
Roast sirloin	Select	15 lb, boneless butt
Short loins	Prime	13 lb, fully trimmed, 2 in. from eye

Table 10.7 A Sample Purchasing Specification. The table shows different kinds of beef with their grade, weight, and cut specifications.

Additional Resources

The following websites are useful resources for additional information on food product specifications

USDA, Specifications and US Grade Standards:
<https://www.fns.usda.gov/fdd/specifications-us-grade-standards>

USDA Agriculture Marketing Service, Product Specifications & Requirements: <https://www.ams.usda.gov/selling-food/product-specs>

These books are great resources for purchase specifications:

The Visual Food Encyclopedia

The Visual Food Lover's Guide: Includes essential information on how to buy, prepare, and store over 1000 types of food

Chef's Book of Formulas, Yields and Sizes

Purchasing Procedures

In most restaurant kitchens, purchasing and ordering are done by the chef and sous-chefs, although in larger hotels there may be purchasing departments assigned this responsibility. In most self-operated on-site foodservice operations, the foodservice manager/director is responsible for purchasing, though if the foodservice is contracted to managed services, the operation will likely be part of contract

buying. Most kitchens will have a list of suppliers, contacts, delivery dates and schedules, and order sheets with par stock levels to make purchasing easier. For a special function or event, such as a banquet, it may also be necessary to determine the required supplies for that function alone.

Production Control Chart

To calculate the quantities of food items to be ordered for any size banquet, a portion control chart must be consulted first. Most establishments will have a portion control chart similar to the one shown in Table 10.8. The chart indicates the portions to be used per person for any given menu item.

Table 10.8 Portion Control Chart.

Food Item	Menu Item	Portion Size
Shrimp	Shrimp cocktail	80 g (2.82 oz.)
Lemon	Shrimp cocktail	1 wedge (6/lemon)
Cocktail sauce	Shrimp cocktail	60 mL (2.11 oz.)
Head lettuce	Tossed salad	1/4 head
Tomato	Tossed salad	1/2 each
Dressing	Tossed salad	60 mL (2.11 oz.)
Prime rib, raw, trimmed ready	Prime rib	500 g (17.6 oz.)
Potato	Baked potato	1 each (100 count)
Green beans	Green beans	80 g (2.82 oz.)
Carrots	Carrots	80 g (2.82 oz.)
Strawberries	Fresh strawberries	100 g (3.52 oz.)
Whipping cream	Berries and cream	60 mL (2.11 oz.)
Coffee	Coffee	500 g (17.6 oz.) for 75 people
Coffee cream	Coffee	60 mL (2.11 oz.)

Table 10.8 Portion Control Chart. The table displays a food item, a menu item containing that food, and the portion size of the food item.

One use for a portion control chart is to estimate the quantity of major ingredients and supplies needed to produce a predicted number of menu servings.

Example

You need to prepare shrimp cocktails and prime rib for a 100-person banquet. Using the portion control chart in Figure 5, you can quickly determine what amounts of major ingredients (Figure 6).

Table 10.9 Calculating Purchase Amounts

Required Servings	Amount to Order
100 x 80 g shrimp	8000 g or 8 kg (17.6 lbs.) shrimp
100 x 1 wedge of lemon	100 wedges = 17 lemons (6 wedges per lemon)
100 x 1/4 head of lettuce	25 heads lettuce
100 x 500 g prime rib raw oven ready	50 kg (110 lbs.) prime rib

Table 10.9 Calculating Purchase Amounts. The table displays how one would calculate the cost of shrimp cocktails for a one hundred person banquet.

Purchasing Methods

Purchasing policies and procedures vary depending on the ownership and size of the organization. In health care facilities and large school districts, it is common to have centralized purchasing of all materials and supplies—including food—done by one department.

Contract Buying

Some restaurants and hotels, particularly those belonging to chains, will have contracts in place for the purchasing of all products or for certain items. This may mean that the

property can only purchase from a specific supplier, but in return, it will have negotiated set pricing for the duration of the contract. This has advantages and disadvantages. On the positive side, the contract price remains stable and the job of managing food costs becomes more consistent since there are no price fluctuations. On the negative side, contract buying takes away the opportunity to compare prices between suppliers and take advantage of specials that may be offered.

Centralized purchasing is also used by management companies that operate a chain of nursing homes and small hospitals or a number of school districts or a combination of all the aforementioned organizations. In this case, the unit managers may be responsible for ordering only dairy and bread directly from suppliers and ordering the remaining products through the management company's central purchasing system. In a large segment of the industry, however, foodservice managers/directors decide on the purchasing methods that best suit their needs.

Purchasing methods can be divided into **informal**—often called **open-market buying** and **formal bid buying**.

Informal purchasing is basically working with suppliers to identify the appropriate products, ordering the correct quantities, and then receiving and storing the product. Getting the best price for the quality of the product desired is just as it's called – informal.

Some types of operations, such as K-12 operations receiving federal funds, are required to use a more formal purchasing method, which includes requesting bids or requests for proposals (RFPs) for all products over a certain cost threshold. This assures that the procurement process is transparent and that there is a free and open competition. Any supplier who wants to be involved in the process is able

to do so and the requirements for participating are clearly outlined. Bid buying and RFPs for procuring food, supplies, and equipment require careful, accurate forecasting as the lead time for receiving products can be several months. Operations may use line item bidding or a market basket approach to awarding the bid.

Line item awards simply choose and purchase from the supplier with the lowest price. This is why it's important to develop tight specifications for products and inspect the product carefully when receiving. You have to make sure you are getting exactly the product you want and checking that is what is delivered. Line item bidding works in very large operations purchasing large quantities of products, but it may be difficult for smaller operations to make sure their delivery is large enough to be the "valued customer/buyer" desired.

A "market basket" approach groups similar items, or items that would logically be purchased from a single supplier, such as produce. The amount of each product is forecasted and is multiplied by the bid price from each bidding supplier to get an extended price for that product. This extended price is calculated for all items in the market basket and the bid (business) is awarded to the supplier with the overall lowest price for the whole group of products. See the following example where the entire bid/order would be awarded to Supplier C.

Table 10.11 Food Product's Forecasted Amount and P

Product	Fore-cast Amt.	Supplier A	T
Romaine Lettuce, cs	3	\$24.00/cs	
5×6 Tomatoes, cs	1	\$30.00/cs	
Cucumbers, cs	2	\$12.00/cs	
Red Peppers, cs	4	\$32.00/cs	
TOTAL BID	—	—	

Table 10.11 Food Product's Forecasted Amount and Purchasing Information for Three Different Suppliers

Additional Resource for K-12 Procurement

[Link to procurement pdf](#)

Cost-plus buying

Another type of buying is called **cost-plus buying**. This is a purchasing procedure commonly used by large food chains. An arrangement is made with a supplier to purchase all of a certain kind of food at a specific percentage mark-up over the supplier's cost. The advantage of this method is that the mark-up is smaller than it would otherwise be. In addition to the cost savings realized for a lower mark-up, the purchasing agent saves time contacting other suppliers to get price quotations. The disadvantage of this system is that it is usually impossible for a purchasing agent to verify

the supplier's cost unless the supplier agrees to unannounced inspections of the firm's books.

Another variation of cost-plus buying is the use of a prime vendor. The advantages and disadvantages of prime vendor purchasing are the same as cost-plus; however, some organizations need to be cautious in their use of these methods because of the purchasing regulations they are required to follow. This is particularly true of school systems since they are public institutions supported by taxpayers and must use competitive bidding.

It is important for foodservice managers, especially those in smaller operations, to understand the benefits of a group or cooperative purchasing. Cooperative buying involves similar operations joining together to purchase products. It is commonly referred to as group purchasing. The organization of these units may be based on a number of considerations: membership in a regional hospital or educational association or council, the proximity of other institutions wishing to participate, a common religious affiliation or some other allegiance, or membership in a national purchasing program.

The obvious benefit of group purchasing is that it enables a relatively small facility to reap the same cost benefits it would enjoy if it were receiving mass purchasing discounts. In order to realize volume discounts, however, the group must agree to minimize the number of different items ordered. This tends to limit flexibility in menu planning. Often facilities that belong to a group purchasing program also go to a local secondary supplier.

Institutions can increase their food cost savings *and* tighten their control over group purchasing procedures by designating a representative—preferably someone with purchasing experience—to keep an eye on the group's policies

and standards. Collectively, members of the group can develop purchasing specifications to be used, in turn, by their purchasing agent in obtaining bids or quotations from food vendors. The formulation of these specifications would, in fact, be an obvious fringe benefit to the small operation with no specifications of its own to define the quality of food it requires. The membership representative might also participate in taste panels, yield tests, and examination of can contents—activities that encourage more objective and thorough purchasing decisions but are inconvenient and impractical for a single facility to conduct on its own.

Purchase Order Chart with Par Levels

The primary purpose of using a purchasing standard is to ensure that sufficient quantities of all food are on hand to meet daily requirements. To establish and maintain these standards, food inventory must become a daily routine. Having set par levels (the amount you should have on hand to get through to the next order) will help in this regard.

There are three main things you need to know:

- Amount required (par level)
- Amount on hand
- Amount to order

To find the amount to order, subtract the amount on hand from the amount required (Figure 7).

Par stock is a term used to describe the amount of a particular item required to meet an operation's needs during a specified period of time. Once a buyer determines that amount, a par stock can be established and used as an ordering guide.

In some cases, you may have to order a minimum amount

based on the package size, so will need to round your quantity up (such as the whole tub of garlic and full cases of mushrooms, apples, and lettuce in Figure 7).

Table 10.12 Calculating the Actual Order Amount of Different Meats

Meat	Amount Required (Par Level)	Amount on Hand	Amount to Order	Actual Order
Corned beef	10 kg	2 kg	8 kg	8 kg
Ribs of beef	20 kg	5 kg	15 kg	15 kg
Ground beef	10 kg	—	10 kg	10 kg
Veal liver	5 kg	500 g	4.5 kg	4.5 kg
Pork loin	10 kg	3 kg	7 kg	7 kg

Table 10.12 Calculating the Actual Order Amount of Different Meats

Table 10.13 Calculating the Actual Order Amount of A Sole Fillet Fish

Fish	Amount Required (Par Level)	Amount on Hand	Amount to Order	Actual Order
Sole Fillet	25 kg	5 kg	20 kg	20 kg

Table 10.13 Calculating the Actual Order Amount of A Sole Fillet Fish

Table 10.14 Calculating the Actual Order Amount of Different Vegetables

Vegetable	Amount Required (Par Level)	Amount on Hand	Amount to Order	Actual Order
Garlic, peeled	2 kg tub	250 g	1.750 kg	2 kg tub
Mushrooms	5 kg case	500 g	4.5 kg	5 kg case
Lettuce	2 cases (24/case)	12 (1/2 case)	1 1/2 cases	2 cases

Table 10.14 Calculating the Actual Order Amount of Different Vegetables

Table 10.15 Calculating the Actual Order Amount of Different Fruits

Fruits	Amount Required (Par Level)	Amount on Hand	Amount to Order	Actual Order
Apples	2 cases	1/2 case	1 1/2 cases	2 cases
Strawberries	10 kg	—	—	10 kg
Oranges	1 Case	2 Cases	—	—

Table 10.15 Calculating the Actual Order Amount of Different Fruits

Integrating these par levels into your regular ordering sheets or your ordering system will make it very easy to manage inventory coming in. More and more suppliers are moving to online ordering systems, which have current prices, case sizes, and often your purchase history available to you when placing an order. Online ordering can often be more convenient as the person placing the order does not have to make a call into an order desk during regular office hours.

Ordering Process

The amount of food to order depends on the number of people to be served (including customers, patients, employees and staff, students, retail operations, and catering), the portion size, and the number of times an item is on the menu. For example, canned tomatoes could be used in a number of menu items during the order period. Other factors that affect the purchase amount include the amount of food on hand, the frequency of food deliveries, and the storage space available for inventory, as previously discussed.

Steps in the Ordering Process

Table 10.16 The Four Steps in the Ordering Process

Step 1:	Make a list of all the food items required for the menu. Estimate the demand for each menu item based on records of past experience.
Step 2:	Refer to standardized recipes to determine the required amounts of various ingredients.
Step 3:	Translate quantities needed into purchase units, e.g., No. 10 cans.
Step 4:	Take inventory of food on hand and subtract this amount from the total amount required to determine the amount to purchase.

Table 10.16 The Four Steps in the Ordering Process

Once the supplier is chosen and the order compiled, typically a purchase order is prepared. The purchase order lists information for both the purchasing organization and the supplier, the products ordered, with the amounts, bid price and extended price and the total for the purchase order. Several copies are typically prepared so that the purchaser, supplier, accounting office and receiving clerk all have copies.

Receiving

When the quality and quantity of incoming merchandise

is not carefully inspected, the benefits of detailed purchase specifications and careful buying practices are eliminated. A key player in this procedure is the staff member who handles the receiving in your facility. In large operations, this may be a receiving clerk whose job is to concentrate solely on the receiving (and often storage) activity. In smaller operations receiving may be handled by the foodservice manager or a head cook or lead worker in a kitchen.

Obviously, training for completing the receiving and storage tasks is extremely important and must emphasize accuracy and conscientious adherence to proper procedures. Training may be completed on-the-job and should include the following functions:

- checking the quality, quantity, and weight of the incoming deliveries against the purchase order and specifications; (It is not possible to check each piece of fruit, for example, so a random inspection is recommended to assure quality.) Hint: Occasionally turn the case over and check the bottom layer or produce!
- inspecting for the specified quality;
- recording deliveries received in the daily record;
- monitoring critical control points for all potentially hazardous foods;
- knowing what action to take if a problem occurs with a delivered product;
- following procedures and preparing paperwork for returning unsatisfactory merchandise;
- handling invoices;

- marking cartons for storage;
- delivering merchandise to the storeroom or kitchen for storage or use; and
- proper procedures for storing food and rotating inventory.

Storage

Foodservice storage forms an important link between receiving and food preparation in all foodservice operations. Thus, the quality of the storage system directly affects the quality of the product used in food preparation. The amount of storage required depends on the frequency of deliveries and the turnover of the product. Storage is vital for another reason: it is one part of the operation where management can exert effective control without appreciably increasing time and personnel costs. In other words, good storage management, in the form of effective controls on shrinkage, theft and pilferage, and unnecessary food handling, can help keep foodservice costs down. Now we're back to controlling inventory!

Professional Ethics

Always act in a professional manner in dealing with suppliers. Your actions affect both your reputation and the reputation of your facility. Be available to talk to salespeople at scheduled times; don't discuss internal problems with salespeople; don't gossip about other salespeople; and don't discuss price quotations given by competitors. Use the time spent with salespeople wisely; discuss market conditions, get price quotations, and learn about new products. Preparing the order while the salesperson waits in your office is discourteous and wastes his or her time. You should never

give a salesperson responsibility for determining your order size. The food buyer has responsibility for estimating order sizes based on purchasing guidelines. A supplier will lose respect for the disorganized buyer who allows a salesperson to make out the order (who may take advantage of the situation by overstocking the inventory). Be sure you are aware of any rules and regulations governing purchasing for your foodservice operation.

The Managing Procurement and Inventory Control Circle is Completed

As you read this chapter you may have thought, “I think I already learned something about this!”, and you would be correct. The entire procurement process flows from one aspect of the foodservice operation to another and then back or around again. Inventory control underlies the entire process. The overall lesson is to understand that managing and controlling inventory, purchasing, buying, ordering, receiving, storage and everything in between is critical to controlling costs in any foodservice operation.

REVIEW QUESTIONS:

- Why is it important to understand the various “players” and their roles in the procurement process?
- How are inventory, inventory records and the procurement process related?
- What are the characteristics of a valued “customer” buyer?
- What factors should be considered, along with prices, in choosing suppliers?

- What factors impact food and supply prices for foodservice operations?
- Why are product specifications an important part of the procurement process?
- What are some ethical considerations that interface with the procurement process?

REVIEW EXERCISES



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Chapter 11 - Managing Food and Beverage Production

Outline:

- Planning and Analyzing Production
- Production Schedules
- Batch Cooking
- Ingredient Assembly
- Managing carryovers
- Reducing Actual Food & Beverage Cost (dollars)
- Portion Control (overserving)
- Overcooking (shrinkage)
- Waste
- Yield
- Shelf-life
- Incorrect Production Quantity

Learning Objectives:

- Describe management tools to use in planning and analyzing production
- Explain how production decisions—including planning, forecasting and production, and quality demand—affect cost objectives of an operation
- Describe how and why to use a food production record
- Explain the importance of carefully managing carryover
- Recognize the overlap of managing production with forecasting, procurement and inventory functions
- Explain key factors of control in the food production process, such as portion control, overcooking, and waste.

Key Terms

- **Production schedule**
- **Forecasting**
- **Activity analysis**
- **Batch cooking**
- **Carryover**
- **Portion control**
- **Overcooking**
- **Waste**

PLANNING AND ANALYZING PRODUCTION

Production planning basically means taking the resources of your foodservice operation and turning out products and services. There are many decisions to be made and this requires a manager who can handle planning, organizing, and controlling the various aspects of production. Balancing quantity, quality, and cost objectives usually involves several layers of management and must also include consideration of the customer's needs and wants.

While most foodservice professionals recognize the importance of controlling the use of ingredients, the key area of pre-production is sometimes overlooked. Pre-production or production planning includes all food handling activities completed prior to production or heating, such as thawing, pre-processing, and preliminary assembly, sometimes called "pre-prep." Controlling the amount of ingredients processed and using correct food handling techniques during this step can be critical. For example, if you thaw too many fish fillets and don't cook them that day, they will have substandard quality when finally cooked. When fresh vegetables are not handled carefully during pre-processing, they may spoil more quickly and suffer larger nutrient losses. If fresh vegetables and fruits are not carefully prepped the expected yield may also be lower, which can lead to a shortage of product and increased costs. Excessive waste can occur from poor handling and overproduction, and that raises food costs.

An earlier chapter in this book discussed the importance of forecasting and described forecasting tools. The more choices offered on a menu, the more difficult it is to forecast, but sales history records and management experience, along with a computerized forecasting system set up for the specific

foodservice operation can make this critical task more manageable.

The production schedule is a major tool for the foodservice manager in controlling quantity food production and labor. The type of information that needs to be included in a production schedule will depend on the operation, but it is basically a list of menu items with the foodservice staff and equipment assigned to each item, along with the time of day assigned for producing the menu item. Table 11.1 is a simplified example of a production schedule. Meeting with production employees to review the production schedule, which may often be done for a week at a time, offers employees a chance to have input into the schedule. Employees may have suggestions to improve productivity and further control costs.

Table 11.

Meal	9am-9:30	9:30-10am	10am-10:30	10:30
Chicken Soup (30 svg)	–	Sal/Grill (chicken)	Sal/Steam-jacketed kettle	Sal/or line
Mushroom Pizza(24 svg)	Sal/St. 1 prep mush.	–	–	Sal/O pizza
Baked Salmon(72 svg)	–	Ken/St. 2 Pre-prep	–	Ken/ Con
Barley Pilaf (72 svg)	Sue/ St. 3 Prep	–	Sue/Steamer	Pilaf d line
Grilled Vegetables(72 svg)	–	Sue/St. 3 Prep Veg	–	Sue/ Grill
Italian Grinder(24 svg)	Bob/ slicer	Cold hold Ingred.	Bob/St. 4 Prep veg for sandwich	Bob/S up o stat
Quesadilla(36 svg)	Joo/ St. 5 Prep	–	–	Joo/S Action
Spanish Rice(36 svg)	–	Bob/ Steamer	Rice to thermodyne	–
Chopped Salad(see SOPs)	Jan/ St 6 Prep	–	–	Jan/S Sta

Table 11.1 *Production Schedules. The table shows the prep time and cook time for different meals.*

If total control of a production system could be obtained by using only standardized recipes, a manager's job would be fairly easy. Unfortunately, we must also decide how to schedule equipment and employees so all of the necessary daily tasks are accomplished. Employees and equipment are important resources that need to be managed. For example, given a menu that includes baked potatoes, the manager must

assign at least one employee to complete each step of the preparation of the potatoes. Someone must wash the potatoes, place them in the oven, check for doneness, remove them from the oven, and place them in a warmer or transport them to the serving line. The manager may assign one or more employees to complete these tasks. If the manager assigns both head cooks on duty to complete these activities, (s)he is using a limited resource both in skill and number when (s)he could have assigned a foodservice worker who is less skilled and generally more available. The example in Table 11.1 illustrates resource allocation: the assignment of limited resources to the activities necessary to achieve operational goals. This assignment of resources may be accomplished randomly—as in the example—or purposefully, which usually results in better use of resources. The final result of resource allocation is a production schedule that can be highly useful for managers. In a foodservice system, resource allocation can be accomplished by completing the following steps:

1. Use well-written, standardized recipes.
2. Review job descriptions for all positions.
3. List production tasks to be completed; identify type of resource required.
4. Determine the time necessary to complete each task.
5. Assign tasks to personnel and equipment using a production schedule.

1. **Use well-written, standardized recipes.** As

you learned in an earlier chapter, standardized recipes with carefully written instructions/procedures help identify the tasks to be completed and the length of time necessary to complete the task. For example, if you are making an apple cake, unpared apples will require more time to prepare than canned sliced apples. If a recipe states, “cream sugar and butter for five minutes,” you know exactly how long the employee and mixer are required. When the recipe states, “cream sugar and butter until fluffy,” the exact length of time required to complete the task is unknown and you will have to time the creaming process to determine the time required for that activity. Identification of the specific piece of equipment to be assigned also helps. If the recipe lists, “potatoes, sliced,” but doesn’t say the vegetable chopper is to be used, the employee may decide to perform the slicing by hand. This change in task time will cause an alteration in the planned production schedule. More detail on recipe standardization and adjustment processes is covered in a previous chapter in this book.

2. **Review job descriptions for all positions.** Job descriptions list the types of tasks that can be assigned to a particular job position. In some operations, cooks are the only employees who may combine ingredients in the preparation of entrees. Foodservice workers may gather ingredients and complete mise en place but are not allowed to use main production equipment.

3. **List production tasks to be completed and identify the type of resource required.**
Production tasks can be listed for each meal using the information acquired in steps 1 and 2. The standardized recipes will supply information on the tasks required. The type of activity, like gathering ingredients or portioning, will indicate the type of employee to be assigned. The type of equipment required will be indicated on the recipe.
4. **Determine the time necessary to complete each task.** The duration of some tasks, such as baking, roasting, or mixing time, may be given in the recipe. However, the length of time required for pre-preparation activities—scrapping carrots, shaping meatloaves, and portioning pies—is not usually stated on recipes. These times can be determined either by completing a time study or activity analysis. In a time study, a foodservice manager watches the activity on several (2 to 3) occasions and obtains an average time for the activity.

In an executive approach to activity analysis, a committee of two or three employees, such as cooks and supervisors or managers, determines the time required for specific activities based on their experience. Standard times can be set for routine activities, like transporting the finished product to the service area, cleaning steam kettles, and obtaining ingredients from the specific storage areas. A later chapter in this book will discuss labor productivity, which is another consideration for

analyzing the effective use of labor hours in producing meals and serving guests.

An example of using the executive approach to activity analysis in the production area of foodservice is to apply it to a standardized recipe. By adding space for times in the procedure area of the recipe, you will create a very helpful tool, useful when planning production schedules or making a purchasing decision of whether to make or buy a specific product or menu item. This information will also be valuable when it comes to other labor issues such as staffing and productivity cover in a later chapter in this book. Table 11.2 is an example of an activity analysis for a recipe, which could be used for planning a production schedule.

Recipe with an activity analysis

BAKED MACARONI & CHEESE

Table 11.2 An Activity Analysis Example for a Recipe

Portions:	50
Yield:	25 lbs.
Portion size:	8 oz.
Prep time:	50 min.
Baking time:	35 min.

Table 11.2 An Activity Analysis Example for a Recipe. The table shows an example of an activity analysis for a recipe that shows general cooking information about the dish including, portions produced, yield amount, portion size, prep time, and bake time.

Table 11.3 Utensils and Tools Needed For Baked Macaroni and Cheese

Mise en Place: 8 qt saucepan, 1 qt. saucepan, 2" perforated hotel pan, 2-4" full hotel pans, 2-4" half pans, 2-6" 1/6 pans, 2 qt. plastic container, Measuring utensils: T., liquid gallon, scale, table knife, long-handled wire whisk, long-handled rubber spatula

Table 11.3 Utensils and Tools Needed For Baked Macaroni and Cheese.

Table 11.4 Ingredients Needed for Baked Macaroni
and Cheese

Ingredients	Amount	Unit
Elbow Macaroni, uncooked	3 1/2	lb s
Margarine	8	oz
A.P. Flour	8	oz
Salt, kosher	1	T

Milk, skin	1	gal
Cheddar cheese, grated	1 1/2	lbs
American cheese, grated	1 1/2	lbs
Paprika	1	T
Worcestershire sauce	2	T
Mustard, dry	1	T
Bread crumbs, panko	12	oz

Margarine, melted	4	oz
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Table 11.4 Ingredients Needed for Baked Macaroni and Cheese. The table displays how much of an ingredient is included. The ingredients listed are sectioned so that they coincide with the steps featured in the next table to the right.

**Table 11.5 Recipe Instructions for Making Baked
Macaroni and Cheese**

Procedures	Time Required
1. Cook macaroni until tender. (While macaroni is cooking, prepare white sauce and bread topping.)	30 min.(step 1) 10 min.(step 2)
2. Drain macaroni.	2
3. Pour macaroni into two full hotel pans.	min.(step 3)
4. Prepare white sauce. Melt margarine in 8 qt. sauce pan, whisk in flour and cook roux until lightly browned. Add salt and skim milk. Bring to light boil, then simmer until thickened (to coat back of spoon)	(15 of 30 min. above)

5. Add cheeses, paprika, Worcestershire sauce and dry mustard to white sauce. Stir until smooth.	(10 of 30 min. above) 6 min.
6. Pour sauce over macaroni. Mix well.	
7. Combine bread crumbs and melted margarine.	(5 of 30 min. above)
8. Sprinkle crumbs over macaroni and cheese mixture.	2 min.
9. Bake in 350 F convection oven for 35 minutes.	35 min.

Table 11.5 Recipe Instructions. The table displays the steps to make baked macaroni and cheese. The steps coincide with the ingredients, and ingredient amount featured before in the table to the left. The first three steps are intended for the elbow macaroni ingredient. The fourth step refers to the margarine, flour, salt, and milk. The fifth and sixth step instructions refer to the american and cheddar cheese ingredients, the paprika, Worcestershire sauce, and the mustard.

Finally, the last three steps refer to the melted margarine and panko bread crumb ingredients.

5. Assign tasks to personnel and equipment using a production schedule. Now you have the information necessary to complete an accurate daily production schedule. To begin, set desired completion times or the times the food items must be sent to the serving or expediting line or distributed to other areas. These become the most important times in the day. We know food quality deteriorates as food is held; therefore, we begin with the latest time we need to complete the activities in order to ensure the highest possible food quality. We then work backward from this deadline. For the macaroni and cheese example in Table 11.5, if serving time starts at 11 am, the first pan should be on the line by 10:50 am for the quality assurance check, so the recipe would need to be started by 9:25 am. You will have to make decisions as to which product has priority if two items require the same resource. For example, if a chicken and rice casserole and roast beef both should be cooked in the convection oven and there is not enough shelf space, which one should be cooked first?

Table 11.1 is an example of the completed production schedule that will be beneficial for employees *and* management. As you can see, the production schedule is based on serving time for lunch in a cafeteria, and production times are scheduled backward from these times. Note that a schedule with 15-minute time slots might be preferred to the example that has 30-minute time slots. As you assign the times for production, you can decide who will be assigned to prepare the food and what equipment will be used.

In addition, you can also identify equipment conflicts, employee overloading, or excessive employee free time.

Advantages of a Production Schedule

A well-planned production schedule helps a manager avoid crisis management. If problems can be anticipated, alternative methods can be implemented. For example, using the production schedule shown, if the manager surveys the production area at 9:30 am and finds that the vegetables for 11:00 am service have been cooked already, (s)he knows that they will not be a quality product. The manager can also check to make sure that all production is running on time and intervene with additional help or troubleshooting if a menu item is running behind. The production schedule will also identify those time periods when employees are not required to be working. This may occur either because there is nothing for the employees to do or because they are waiting for a piece of equipment. The schedule can show times when pre-preparation can be completed for the next day and how well equipment and employees are utilized. An entire week's production schedule will answer the questions: Do some menus require more oven space than is available, and on other days the menus require no ovens? How often is the mixer utilized? Is the tilt kettle overbooked, and so on?

Batch Cooking

Some menu items are "cooked to order" meaning everything is pre-prepped and ready to cook, but not actually cooked until the items are ordered by a customer. However, operations that must cook large quantities of food to be served in short serving periods, such as K-12, college, healthcare and business dining should implement batch cooking procedures. This practice entails pre-prepping smaller batches of a recipe and cooking as needed. Many of the details depend on the menu item, but an example

would be cutting all the vegetables and preparing the stir fry sauce for 100 servings of stir fry, then cooking just 12-15 servings of the stir fry at a time during the service period. If it takes 10 minutes to cook each batch and get it to the serving line, then the manager determines when the next batch needs to be prepared based on how quickly the stir fry is being served to customers. This provides the freshest possible product to customers and also prevents waste from overproducing a menu item that is difficult to use as a leftover in case forecasting isn't quite on target. Batch cooking can help to improve food quality, meet customer demand, and can result in value-added productivity for many foodservice operations.

Ingredient Assembly

Many large foodservice operations use centralized ingredient assembly, such as an ingredient room, to better control ingredient access and particularly to control food and labor costs. When an ingredient room is used, the issuing system is simplified as all ingredients go from the storeroom directly to the ingredient room based on the recipes to be prepped for a given period of time. A modification of this concept can even be used in small operations where one person is responsible for setting up the ingredients (*mise en place*), perhaps on carts, for each of the other employees. This can be utilized in a variety of ways and may be a significant time-saver if properly organized in many types of foodservice operations.

Managing Carryover

Carryover is another word for leftovers or overproduction, though unintentional. Effective foodservice operations want to minimize overproduction and carryovers as much as possible, but since forecasting is not perfect, and

underproduction can also be costly, especially in terms of customer satisfaction, carryovers are a fact of life for the foodservice manager. If a menu has been planned with careful consideration for cross-utilization, this can help minimize the waste (and cost) of carryovers. Some carryovers, as long as they are handled with strict food safety protocols, can be reheated and served at another meal. Batch cooking can also help with carryover management. If full menu items or even parts of recipes are pre-prepped, but not cooked, they are typically much easier to re-use at a later time. Additional ways to use leftovers may be staff meals or donating to a soup kitchen. However, the best managers know the key to managing carryovers is to work toward making sure all food products purchased are sold and generate revenue for the operation.

REDUCING FOOD AND BEVERAGE COSTS WITH EFFECTIVE MANAGEMENT

A number of effective management practices to reduce and control food and beverage production costs have already been introduced in this and previous chapters, but a review seems appropriate here.

Portion Control

Standardized recipes and/or standard serving procedures list planned portion sizes. It's important for servers to follow these recipes and procedures and use proper portion control tools when serving customers. This standardization helps meet customer expectations with every purchase. Portion control also assures that the recipe will yield the planned portions and that the portion cost established for the recipe stays in the expected range. Since the price of a menu item is based, at least in part, on the cost of that item, it's critical

to serve the proper portion to maintain the item portion cost and food cost percentage. For example, if the macaroni and cheese recipe is supposed to serve 50 people an 8 oz. portion with a \$4.00 food cost, but a 10 oz. portion is served instead, the recipe will now only serve 40 people and the cost per portion will increase to \$5.00. That's a \$1.00 (25%) increase in food cost on each menu item. This also means instead of bringing in revenue from 50 customers, there is only revenue from 40. Poor portion control can impact both sides of the profit equation by decreasing revenue AND increasing costs per portion!

Overcooking

Again, it's important to follow standardized recipes and minimum internal cooking temperatures for meats (CCPs) and other products. If food products are overcooked they shrink and the yield of a recipe is reduced. This results in fewer servings available for sale and a higher food cost per serving, similar to over-portioning. For example, if a pork roast was supposed to yield 20- 6 oz servings (120 oz. total yield), but overcooking causes shrinkage of 12 to 18 oz., the total servings now available for sale decreases to 18 or 17 servings and increases the portion cost for each 6 oz. serving. Of course if a product is overcooked to the point of being burned or otherwise inedible, then it's waste and a total loss and no revenue is generated for the product.

Waste

There are numerous ways waste can occur in a foodservice operation. Food, labor, and other resources can be wasted, but for now, we will concentrate just on food.

We learned earlier about the yield of many food products, such as various cuts of meat (the butcher's yield test), fish, poultry, and fresh fruits and vegetables. The effective

foodservice manager monitors yields and investigates variances when the edible portion is not within the expected range. For example, if the beef roast is supposed to yield an 80% edible portion and the cook trims and/or cuts incorrectly so that the edible portion yield is only 75%, that 5% loss is waste and does not generate revenue for the operation. This becomes a training issue for the foodservice manager. Another possibility is that the beef roast has more fat and sinew that had to be trimmed away to provide a great quality product for the customer and consequently had a lower yield. This is a procurement issue and may require a revision of product specifications, better-receiving practices, or a new supplier.

Another factor to consider under this topic is the shelf life of products, both prior to production and after production. The first intervention to prevent an issue with product spoilage and waste is to implement FIFO, first in, first out for all food inventory as was discussed in an earlier chapter. If a product does approach its “use by” date and the excess raw product has been purchased and cannot be used while fresh, there are situations where the product may be able to be cooked or processed and frozen for later use.

Incorrect Production Quantity

Earlier in this chapter overproduction and underproduction were discussed as they relate to the importance of accurate forecasting and production records. Overproduction leads to carryovers, which were discussed previously. Obviously the shelf life of any already cooked product must be considered for both food safety and quality reasons. Remember the practice of “batch cooking” to prevent overproduction of cooked products that may be more difficult to sell and end up as waste. The previous examples

in this section are why managing production and carryovers is a critical responsibility of the foodservice manager and the “daily special” menu becomes a significant tool for reducing waste and generating revenue.

Underproduction can be just as big of an issue as overproduction as it can negatively affect customer service and satisfaction. If a menu item has to be 86'd (removed) from the daily offerings in the operation, customers can become disappointed, frustrated and perhaps unwilling to return. Service recovery, in this case, can cost the operation with both increased costs and decreased revenue.

A secondary topic that must be raised in this chapter is the issue of employees being allowed to take home leftover food. Though it may seem like a good idea to allow employees to make use of leftover food instead of throwing it out and wasting the food, the problem often becomes one of the planned overproduction. If employees get used to the “reward” of leftover food, they tend to make sure there are regular leftovers by intentionally preparing and cooking more product that will be needed. This is yet another example of both an increased cost and loss of sales for the foodservice operation.

It all comes down to mistakes

If we take a look at all of the above ways to save food and beverage costs it becomes clear that many of the problems come down to mistakes by employees. This means one of the best ways to reduce costs and prevent mistakes is employee training along with vigilant and consistent management by the foodservice manager.

REVIEW QUESTIONS

- What are some of the tools or systems an effective foodservice manager should use to better control food and beverage production?
- How does forecasting affect production costs?
- How can a foodservice operation lose money during “pre-production.”
- What are some of the negative effects of overproduction and underproduction?
- Why is effectively managing carryover important to controlling costs?
- How can completing an activity analysis of a recipe assist a foodservice manager in controlling costs?
- What are some of the key production factors that allow a foodservice manager to control food and beverage costs?

REVIEW EXERCISES



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Section 4 -
Managing &
Controlling
Operating Expenses

Chapter 12 - Analyzing and Managing Food & Beverage Expense

Learning Objectives:

- Determine the cost of food sold and the cost of food consumed (or used) and explain the difference between the two
- Describe and calculate the impact of free or reduced-cost employee meals and transfers on the cost of food sold calculations
- Calculate the food cost percentage – $\text{Cost of Food Sold} / \text{Food Sales}$ or $\text{Cost of Food Portion} / \text{Menu Price}$
- Explain how errors in inventory will affect the cost of food used or sold calculations
- Calculate an operational efficiency ratio
- Explain the meaning of the operational efficiency ratio
- Identify acceptable and unacceptable variances in food cost

Key Terms:

- Food & Beverage Cost of Goods Sold
- Food & Beverage Cost of Goods Consumed (used)
- Beginning Inventory
- Ending Inventory
- Credits and transfers
- Food to beverage or beverage to food
- Standard food & beverage cost
- Attainable food & beverage cost
- Direct purchases
- Requisition voucher
- Adjustments
- Operational efficiency ratio
- Variance

INTRODUCTION

The effective manager has to manage and control all the various operating expenses in a foodservice operation. In the end, the goal is typically to make a profit. Food and beverage expenses combined are one of the largest expense categories for foodservice operations. One of the key figures needed each month (or even more often) is the cost of goods sold. The food & beverage cost of goods sold is the dollar amount spent on items actually used to provide the menu items sold

to the guests. The amount may significantly differ from the total spent on food purchase since:

- Items purchased in bulk are not entirely used during the accounting period (refer to the section on inventory)
- Items are consumed but not always sold to guests (employee meals, complimentary meals served for promotion purposes, etc.)

The food & beverage cost of goods sold (usually referred to as Food & Beverage Cost in the industry) is expressed as both a dollar amount and a percentage of food & beverage revenues.

DETERMINING ACTUAL FOOD EXPENSES

Food & beverage inventory revisited

From an accounting and financial standpoint, a restaurant inventory is the dollar value of the food and beverage items that are held in storage. While in storage, the inventoried items are not considered a cost until used or sold. Just like cash, food and beverage inventory is a company asset. Unlike cash, however, inventory values may decrease since food and beverage items are perishable and subject to spoilage and theft.

Holding inventory has the potential to incur significant expenditures including operating expenses (such as spoilage, obsolescence, theft, and facility expenses) and capital investments (such as the construction of the premises and refrigeration equipment.) Additionally, operations immobilizing too much cash in inventory could eventually need to borrow money to pay for other expenses.

Accordingly, managers need to implement stringent

inventory management systems to protect the value of their inventory with procedures that avoid over-ordering (cash spending) and spoilage, including security measures for accessing the premises, proper requisition procedures for removing inventoried products, and adequate rotation of perishable items.

COMPONENTS OF FOOD AND BEVERAGE COST CALCULATIONS

Beginning Inventory

The beginning inventory is the dollar value of the food and beverage items held in storage at the beginning of an accounting period.

Ending Inventory

The ending inventory is the dollar value of the food and beverage items held in storage at the end of an accounting period.

The ending inventory of a particular period becomes the beginning inventory of the next accounting period. Example: In cases where a company implements monthly accounting periods, the November 30th ending inventory becomes the December 1st beginning inventory.

Purchases

Purchases sum up the dollar value of all food and beverage items acquired during the accounting period. These include direct purchases, which are usually fresh products that are delivered and used on a daily basis, or par items, products that are held in storage, or items such as salt, sugar, flour that are ordered cyclically to maintain a permanent minimum amount in inventory.

Credits and transfers (inventory items that are not directly used to generate sales)

Credits: Some inventoried food and beverage products are not used to produce items that generate sales. One example is when hotels and restaurants provide employees with free or heavily discounted meals.

Transfers in or out: Multi-unit operations such as restaurant chains or hotels with several restaurants, bars, or other foodservice operations, such as catering, may move inventory items from one unit to another based on the needs or particular sales patterns of the various outlets. “Transfers in” are additions to purchases for the receiving outlet while the issuing outlet would account for the inventory reduction as a “transfer out.”

Other Adjustments:

Food to beverage or beverage to food: Food and beverage costs are usually presented separately in addition to the overall Food and Beverage Cost of Sales (F&B Cost). Food recipes routinely call for alcohol such as wine or brandy (beverage to food), while cocktails often include food items such as olives, or lemons, or come with a side of peanuts (food to beverage). Food to beverage is credited (subtracted from) the food cost and imputed (added to) to the beverage cost. Beverage to food credit similarly reduces the beverage cost and increases the food cost.

Additional adjustments include credits for returned products or discounts and price adjustments from the purveyor/supplier.

FOOD & BEVERAGE COST OF GOODS CONSUMED

VS.

COST OF GOODS SOLD

Food & Beverage Cost of Goods Sold is the cost that is directly attributable to the production of food and beverage items that were sold to guests. As previously mentioned, this differs from the **Cost of Goods Consumed**, which includes the cost of products that were used to produce items that were not associated with corresponding sales.

The following formula determines the **Food & Beverage Cost of Goods Consumed**:

$$\text{Beginning Inventory} + \text{Purchases} - \text{Ending Inventory} = \text{Cost of Goods Consumed}$$

$$\begin{array}{ccccccc} \text{Goods in the store at} & + & \text{Goods added through} & - & \text{Goods left in store} & = & \text{Total goods used} \\ \text{the beginning of the} & & \text{purchases (\$)} & & \text{at the end of the} & & \text{during the accounting} \\ \text{accounting period (\$)} & & & & \text{accounting period} & & \text{period (\$)} \\ & & & & \text{(\$)} & & \end{array}$$

Figure 12.1 Inventory Equation

Long description:

An equation at the top that adds “Purchases” to “Beginning Inventory” and subtracts it from “Ending Inventory” which totals the “Cost of Goods Consumed”. Below the equation is an example equation that adds “Goods in the store at the beginning of the accounting period” and Goods added through purchases and subtracts “Goods left in the store at the end of the accounting period” to get the “Total goods used during the accounting period”.

End long description.

The formula for **Food & Beverage Cost of Goods Sold**

removes the components of Cost of Goods Consumed that are not directly associated with sales.

Beginning Inventory (\$)

- + Purchases (\$)**
 - + Transfers In (\$)
 - Transfers Out (\$)
-

= Cost of Goods Available for sale (\$)

- **Ending Inventory (\$)**
 - Employee meals (\$)
-

= Cost of Goods Sold (\$)

Some operations allow managers and marketing personnel to offer complimentary meals. The Cost of Goods sold is further adjusted by deducting the corresponding costs that are subsequently imputed to the relevant accounts, such as administrative or marketing.

Inventory issues

Ending Inventory is a credit to food and beverage cost (i.e. it is subtracted from the overall cost of sales}. The higher the ending inventory amount, the lower the food and beverage cost. This creates a temptation to overstate the inventory value (known as “inventory padding”) for employees, such as managers or chefs, whose bonus and often job preservation, depend on the F&B cost figure. Several methods may be used to unethically overstate inventory values such as:

- Creating false entries (non-existing products);
- Manipulating numbers (quantity, prices);

- Valuing spoiled or past due products that should be discarded;
- Counting off-menu products that are in storage but not likely to be used ever again;
- Moving products from one outlet to another in order to inflate inventory figures.

Food & Beverage Cost of Goods Sold Percentage (%)

Food and beverage costs are usually expressed in percentage of sales (revenue) when evaluating performance or setting up goals in a budget since sales and cost dollar amounts fluctuate significantly. For the same reason, food cost percentages allow managers to compare numbers over time and benchmark their performances against industry standards and comparable operations.

Food Cost Percentage (%) = Cost of food sold (\$) divided by **Food Sales \$**

Beverage Cost Percentage (%) = Cost of beverage sold (\$) divided by **Beverage Sales \$**

F&B Cost Percentage (%) = Cost of Food and Beverage sold (\$) divided by **Food & Beverage Sales \$**

Accordingly, restaurant profit and loss statements display both the dollar amount and percentage of sales of the food and beverage costs from an operation.

Restaurant X Y Z Statement of Income: Fiscal Year 2018

Covers served: 56,346

Seat Turnover per Day Open: 1.54
Average Check (Combined F & B): \$28.01

Sales and Costs	Amount in dollars	Percentage
Food Sales	\$1,213,966.46	76.9%
Beverage Sales	\$364,189.94	23.1%
Totals	\$1,578,156.40	100.0%
Cost of food	\$473,447.91	39.0%
Cost of beverages	\$80,123.65	22.0%
Total cost of sales	\$553,571.56	35.1%
Gross Profit	\$1,024,584.84	64.9%

Food Cost: $\$473,447.91 / \$1,213,966.46 = 39.0\%$

Beverage Cost: $\$80,123.65 / \$364,189.94 = 22.0\%$

Food & Beverage Cost: $\$553,571.56 /$
 $\$1,578,156.40 = 35.1\%$

Sales or Costs	Amount per Seat: Lower Quartile	Amount per Seat: Median	Amount per Seat: Upper Quartile	Ratio to Total Sales: Lower Quartile	Ratio to Total Sales: Median	Ratio to Total Sales: Upper Quartile
Food Sales	\$4,906	\$7,698	\$11,071	75.6%	90.9%	100.0%
Beverage Sales	556	1,716	3,199	0.0	9.1	24.4
Total Sales	6,034	8,827	12,718	100.0	100.0	100.0
Food Costs	1,567	2,704	3,491	29.8	33.6	38.0
Beverage Costs	161	480	876	24.4	29.0	33.5
Total Cost of Sales	1,981	2,901	4,122	29.2	32.2	37.2
Gross Profit	3,967	5,824	8,897	62.8	67.8	70.8

The National Restaurant Association publishes an Industry Operations Report that allows restaurant operators to benchmark their performances. (See note about chart below.)

NOTE: We may need to eliminate the above chart as it's part of a report that is sold by the NRA.

Monitoring and Controlling Food & Beverage Cost

Best practices require restaurant managers to (1) monitor food & beverage costs at regular intervals (daily or weekly), and (2) benchmark the actual cost against the standard or attainable cost, which is an “ideal” figure derived from the standardized recipes.

Restaurants and other types of foodservice

operations produce a periodic **food cost report** that usually includes the following:

- **Direct Purchases:** The amount for the ingredients, mostly fresh products that are delivered and directly transformed every day. The person in charge of purchasing the products (usually the chef or foodservice director) would fill-out a “market list” and place the order a day or two in advance. The market list (or the invoice if provided with the delivery) serves as the supporting document for direct purchases. Much of this documentation is likely managed using computer systems.
- Well managed operations require that a **requisition voucher** be filled out for every item removed from storage.
- Likewise, each **adjustment** (employee and complimentary meals, transfers in or out, etc.) must be documented, again likely documented in the back of the house computer system.

The following is an example of a simple cumulative daily food cost report:

BETH EGAN

Date	Directs	Stores	Adjustments Added to Cost	Adjustments Subtracted from Cost	Total Cost Today	Total Cost to Date	To Sal To
Feb 1	\$254.20	\$977.30	\$57.20	\$255.30	\$1,033.40	\$1,033.40	\$2.
Feb 2	\$326.70	\$944.10	\$86.20	\$253.40	\$1,103.60	\$2,137.00	\$2.
Feb 3	\$262.50	\$1,040.40	\$88.60	\$177.80	\$1,213.70	\$3,350.70	\$3.
Feb 4	\$256.35	\$965.30	\$120.00	\$220.00	\$1,121.65	\$4,472.35	\$3.
Feb 5	\$218.75	\$944.55	\$90.00	\$170.00	\$1,083.30	\$5,555.65	\$3.

In larger operations, the report can break the products down by category:

Date	Vegetable	Fruits	Dairy	Bakery	Total Directs	Beef and Veal	Poultry	Seafood
Feb 1	\$118.30	\$51.40	\$49.75	\$34.75	\$254.20	\$455.30	\$65.30	\$358.45
Feb 2	\$178.15	\$67.80	\$65.15	\$15.60	\$326.70	\$494.30	\$77.20	\$234.60
Feb 3	\$176.30	\$2320	\$34.30	\$28.70	\$262.50	\$474.10	\$75.20	\$329.70
Feb 4	\$166.35	\$46.80	\$33.20	\$10.00	\$256.35	\$419.75	\$65.30	\$320.60
Feb 5	\$117.10	\$28.75	\$44.20	\$28.70	\$218.75	\$425.80	\$130.00	\$211.50

Standard, or “attainable “Cost

A “standardized recipe” detailing ingredient quantity, unit cost and cooking procedures (discussed earlier in the chapter on Standardized Recipes) is written for each menu item. The standardized recipes

summarize the forecasted cost per portion of a particular menu item.

As a result, food and beverage operations determine a standard or attainable dollar food cost by (1) multiplying the number items sold (from a sales report) by the cost from the relevant standardized recipes. They then sum up the costs of all the items sold. Once again, this would be calculated on a daily, weekly and/or monthly basis by a computer system.

Ingredient	Cost per Portion	Sales Report (portions sold)	Standard Cost
Chicken	\$3.20	25	\$80.00 (\$3.20 X 25)
Fish	\$5.50	40	\$220.00 (\$5.50 X 40)
Lasagna	\$2.70	15	\$40.50 (\$2.70 X 15)

The Standard Food Cost is obtained by adding the fourth column, Standard Cost, which equals \$340.50.

The standard cost assumes that the kitchen staff is able to produce a recipe using the exact amounts of ingredients listed in the standardized recipes. This is often not the case since ingredients may vary (shape, unit size, weight) and mistakes occur (inaccurate yields, peeling waste, cutting technique, burned or dropped ingredients...). Standard costs primarily serve to determine purchasing volumes, minimum recommended menu prices, and as a benchmark to measure the difference between the actual and the ideal (theoretically perfect) costs.

Operational Efficiency

Operational efficiency is a measure of the extent to which the actual and standard (Ideal) costs differ. It is expressed as the ratio of Actual Cost to Standard Cost:

Actual F&B Cost (\$) divided by Standard F&B Cost (\$)
= Operational Efficiency Ratio (%)

\$391.60 divided by \$340.50 times 100 = 115%

In this case, actual exceeds the standard cost by 15%, prompting a management team to conduct a thorough investigation.

An operational efficiency ratio below 100% (actual is less than standard) could be interpreted as a positive performance. Such is the case for example when market prices for products drop. However, this could also result from the use of inferior products or smaller portion sizes, which could negatively affect customer perception and endanger the operation.

Variance Analysis

Cost variance (the difference between the standard and actual cost) results from differences in purchasing price, expected versus actual yields, quantity used, and/or changes in menu mix. The foodservice manager is responsible for defining the acceptable amount of variance and understanding its origin given the fact that waste and price variations are inevitable.

As a rule of thumb, a 10% variance may be acceptable. However, no established guideline exists for defining the “right” degree of variance. It depends on the nature of the operation and the value of the food product. Think of the cost difference between something like beef tenderloin and cucumbers. Foodservice operations using convenience food

products such as pre-cut and pre-portioned ingredients should experience little variances, while operations working with fresh products have to manage AP/EP yields (As-Purchased/Edible Portion), preparation procedures and thus incur more cost variability.

The following table summarizes the most common sources of cost variances.

Potentially Unmanageable Reasons	Potentially Manageable Reasons
<ul style="list-style-type: none">- Significant increases in costs paid for food- Shift of guest preferences to higher food cost menu selections<ul style="list-style-type: none">- Storage losses (for example, refrigerator/freezer breakdown requiring stored food to be destroyed)- Shift to more convenience foods in efforts to reduce labor costs	<ul style="list-style-type: none">- Revenue theft (higher food cost %)- Failure to properly follow procedures for effective purchasing, storing, issuing and production of food products<ul style="list-style-type: none">- Improper/inaccurate procedures to calculate actual food costs- Ineffective selling techniques resulting in sales of higher food cost items (with a lower contribution margin)- Portion control issues

Variance and Inventory Control

Analyzing the variances between the three methods used to calculate food and beverage costs provides initial clues as to whether cost problems originate from efficiency or other loss issues such as inventory mismanagement or theft.

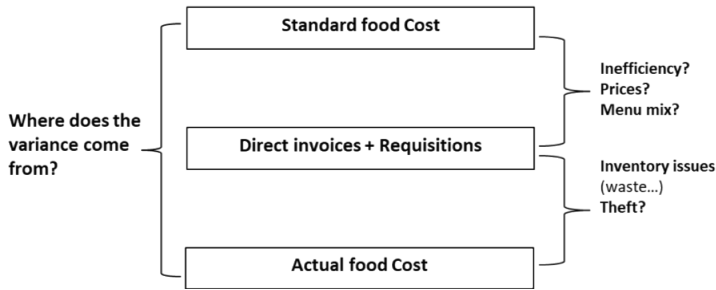


Figure 12.2 What's a manager to do?

Long description:

A box labeled “Standard food Cost” is at the top. Below that is a box labeled “Direct invoices and Requisitions”. On the bottom is a box labeled “Actual food cost”. On the left is the question “Where does the variance come from?” and is linked to the top and bottom boxes. On the right are 2 pieces of text. The first is “Inefficiency? Prices? Menu mix?” and is linked to the top 2 boxes. The second is “Inventory issues (waste...) Theft?” and is linked to the bottom 2 boxes.

End long description.

What's a Manager to Do?

Managing and controlling food and beverage expenses involves collecting lots of data related to the foodservice operation. Then that data has to be analyzed on a daily, weekly, monthly, and yearly basis. Issues and problems are identified through this analysis, then the effective manager works to find solutions that bring costs “in line” with revenue. It's a constantly changing and challenging, but rewarding task.

REVIEW QUESTIONS

- What is the difference between cost of food consumed (or used) and cost of food sold?
- Why does offering free employee meals or complimentary meals or drinks affect the cost of food and beverage sold (and the resulting food and beverage cost percentage)?
- How will an error in the physical inventory or inventory value affect an operation's food cost percentage?
- Why would a foodservice manager want to calculate an operational efficiency ratio?
- How does variance analysis help a foodservice manager better manage food and beverage expenses?
- How should a foodservice manager determine if a variance is acceptable or unacceptable?

REVIEW EXERCISES



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Chapter 13 - Managing Labor Costs

This chapter is remixed from [*Basic Kitchen and Food Service Management*](#) by The BC Cook Articulation Committee.

Chapter Outline:

- Introduction to Labor Costs
- Identifying Labor Costs
- Defining and Measuring Productivity
- Factors Affecting Workplace Performance
- Improving Productivity
- Productivity Standards
- Staffing Guide
- Fixed Labor Costs
- Variable Labor Costs
- Scheduling Staff
- Staying within Budgeted Labor Cost
- Position Performance Analysis

Learning Objectives:

- Identify the costs included in total labor cost
- Define labor cost terminology
- Describe factors that affect productivity and ways of increasing productivity
- Identify several different productivity measures
- Use labor productivity measures to determine foodservice operation staffing.
- Recognize the link between accurate forecasting and labor scheduling (and labor cost)
- Identify best practices for controlling and reducing labor costs

Key Terms:

- **Fringe benefits**
- **Overtime**
- **Minimum staff**
- **Variable labor/payroll cost**
- **Fixed labor/payroll cost**
- **Productivity**
- **Employee turnover**

INTRODUCTION TO LABOR COSTS

Controlling food costs is an important component of ensuring the profitability of your food service operation. However, food costs are only part of the picture. It is also necessary to control **labor costs** and forecast labor demands

accurately if your business is to succeed. If you have more staff than is required, your labor costs will be too high and the company will lose money. If you have insufficient staff for a particular time period, customer service will suffer. Your goal in planning staffing and scheduling needs is to match labor supply with customer volume so that you can provide quality service without excessive cost.

The food service industry is labor intensive. Technology has not replaced people with equipment (though some foodservice operations are experimenting with robots which cook and assist in service.) Unlike an automobile manufacturing plant, a restaurant cannot store its product until tomorrow or the next day if customers are not buying today. The same seat in the restaurant can only be sold a fixed number of times, based on the operating hours and number of turns (rate of turnover of customers). Therefore, it is critical to be able to forecast the number of customers you will have, the peak customer periods, and the staffing needed to provide service to those customers.

Sound human resource management policies can increase the **productivity** of staff. You must first choose qualified, interested, and trainable employees. Once these employees have been recruited, they must go through an orientation period in which they learn about the job and their responsibilities, the company's way of doing things, and the required level of product quality. During this initial period, the employee's productivity might be low.

Accurate job descriptions, a good orientation to the job, adequate on-the-job training, and good supervision with lots of feedback about job performance will assist employees in becoming productive as soon as possible (but human resources management is a different course of study.)

Identifying Labor Costs

Labor costs in the foodservice industry continue to increase from year to year. This can be due to an increasing minimum wage and pressure to pay all employees a “living wage” rather than relying on tipping to make up the difference. In addition, costs have increased because of the stiff competition for skilled service employees, which has not only increased wages but also fringe benefits covered by the employer.

Most students understand that wages and salaries are labor costs, but there are many other labor-related costs in addition to the wages/salaries paid. Employee benefits or “fringe benefits” include various types of non-wage compensation provided to [employees](#) in addition to their normal [wages](#) or [salaries](#).^[1]

This list includes such costs as

- Social security taxes (employer share)
- Medicare taxes (required employer tax)
- Unemployment taxes
- Worker’s compensation
- Group Insurance, such as health, dental, vision, life, etc.
- Vacation, personal and sick leave
- Disability income protection
- Retirement benefits
- Uniforms and laundry
- Employee meals (free or discounted)

- Employee training
- Tuition reimbursement or employer student loan contributions
- Use of a company car, or even company housing or a housing allowance
- Mileage for using a personal car for business
- Daycare (free or subsidized)
- Moving expenses
- Profit sharing

Some operations may even have other labor-related costs not included in the above list. The real cost of an hour of work is not simple to compute because of the fringe benefits and hidden costs. The first step to identifying labor costs is to categorize costs so they can be picked up as labor costs. For example, employee meals and laundering of employee uniforms are fringe benefits that may be hidden in other cost categories.

Labor costs may be divided into the following categories:

- Management (fixed labor/payroll cost)
- Full-time employees (fixed labor/payroll cost)
- Overtime/substitute employees (variable labor/payroll cost)
- Part-time employees (variable labor/payroll cost)
- Fringe benefits

Overtime should be nonexistent or nearly nonexistent. Management needs to keep an eye on those employees

whose time is nearing 40 hours. Money spent on overtime usually indicates poor management and inefficiency.

There is much to learn from calculating the real cost of a labor hour. For instance, it is shocking when you consider that in some cases only about 50% of the labor hour is spent productively. It helps when evaluating labor costs to break down the costs by 15-minute intervals and relate the cost to the amount of work that can be produced. When management looks at the cost of a break, idle time, and “leaning” time, it is easy to see the value of training in efficiency, good scheduling of employees, and planning work carefully.

AVERAGE COST OF A LABOR HOUR

The real cost of a labor hour is not the hourly wage, but the real cost may be 20–60% greater when the costs of fringe benefits are added. Figure 13.1 illustrates the cost of one full-time employee when all the fringe benefits are included. A salary based on \$8.50 per hour really costs \$14.19 per hour. Foodservice operations try to avoid full-time employment and thereby reduce the fringe benefit costs substantially. Figure 13.2 compares the real cost of a full-time cook with that of a part-time cook. The value of the two employees’ work must be considered. For example, the value/quantity/quality of the full-time employee’s work may be twice that of the part-time employee’s work. For one thing, the supervision required by the part-time employee may be much greater. All of these factors are not shown when one compares the hourly wages.

Figure 13.1

Real Cost of a Full-time Employee

1. Salary based on \$8.50 per hour, 40 hours per week: \$17,680
2. Cost of a substitute at \$7.25 per hour and 12% employer taxes for the days employee is off: 10 days per year sick, 10 days paid vacation, 5 holidays = 200 hours at \$7.25 = \$1450 \$1,200.12 taxes = 1741,624
3. Fringe Benefits: <ul style="list-style-type: none">• Employee meals valued at \$3 each 260780• Employer taxes 2,122• Health insurance (employer pays 50% of premium) 1,680• Retirement 1,768• Uniforms and laundry 616• Worker's Compensation and Employment Commission 414
4. TOTAL LABOR COSTS FOR YEAR \$ 26,684
5. Number of days employee actually works per year: 235
6. Total labor costs divided by number of days worked = \$113.55/day
7. Daily labor costs \$113.55 divided by 8-hour day = \$ 14.19/hour ----- -----
8. If this employee is productive only 50% of the time, the real cost of an hour of productive time = \$ 28.38/hour

Figure 13.2

Cost of Part-time Employee (or Substitute) Compared with a Full-time Employee

<p>1. Salary based on \$7.25 per hour 8 hours per day\$ 58.00</p> <p>2. Cost of a substitute for days off: 0</p> <p>3. Fringe Benefits:</p> <ul style="list-style-type: none"> • Employee meals valued at \$3 each (if 8 hours worked) 3.00 • Employer taxes (7.65%) 4.44 • Health insurance: 0 • Retirement: 0 • Uniforms and laundry: 2.80 • Worker's Compensation and Employment Commission: \$0.80 <p>4. TOTAL LABOR COSTS FOR DAY \$ 69.04 per day</p>
<p>5. Number of hours substitute worked: 8 hours</p> <p>6. Total labor costs per day divided by number of hours worked = \$8.63 per hour</p>
<p>7. If the part-time employee is productive 50% of the time, the real cost of an hour of productive time = \$8.63 times 2 = \$17.26</p>
<p>8. If the part-time employee is only productive 33.3% of the time, the real cost of an hour of productive time = \$8.63 times 3 = \$25.89</p>

Note: Something crucial that this exercise does not compare is the quality of the products produced and of the work. The full-time, trained employee will produce more than the untrained employee.

DEFINING AND MEASURING PRODUCTIVITY

Productivity is defined as the amount of output gained from a given amount of input. For instance, it could be the amount of food produced and served for each labor hour worked. Measuring productivity helps management evaluate the efficiency of the staff. These measures are generally used for the entire staff as a group rather than to measure individual productivity, since it really is a team effort to produce and serve meals to customers. There are several criteria for evaluating efficiency, such as:

- Number of transactions (or covers) per labor hour
- Revenue (or sales) per labor hour
- Meal equivalents produced and served per labor hour
- Number of guests served per labor dollar
- Labor dollars per guest served
- Labor cost percentage (of revenue)

The productivity formula is the ratio of output (jobs done) to input (employee time):

Output (food and service) divided by Input (labor hours)
equals Productivity Rate (eg. meals per labor hour)

Output can be expressed in number of meals, transactions, or customers, labor dollars spent, or in amount of sales. Restaurants frequently use number of covers or dollars in sales, whereas a hospital or school/college operation would typically express it in number of meals. Input is the number of labor hours worked or scheduled during the period of time or the number of labor dollars spent.

An indirect approach to measuring productivity is determining the percentage of revenue spent for labor (labor cost percentage.)

FACTORS AFFECTING WORKPLACE PERFORMANCE

In addition to sound human resource management, other factors influence the required amount of labor. These factors include:

- Menu items
- Use of convenience foods
- Type, level and hours of service
- Quantity of meals and number of meal periods
- Facility layout and design and production equipment
- Work environment and number of hours worked (scheduling)
- Standardization – recipes, procedures, and production planning
- Employee skill level, training and supervision

Menu Items

The number and complexity of menu items affect the production hours needed. If you have a menu with many items requiring difficult production techniques, you will require more preparation time per item. If your menu consists of a limited number of items requiring minimal preparation, you will require less time.

Use of Convenience Foods

Foods prepared on-site require more preparation than similar menu items made with convenience foods, such as pre-portioned meats or desserts. You can reduce your labor costs by using convenience foods. However, you must consider two other factors: convenience foods can increase your food costs and may affect the quality of your product.

The second factor – affecting the quality of the product – is not always evident. Convenience foods made with high-quality ingredients and prepared exactly as recommended by the manufacturer can provide uniform portions of very good quality.

Type, Level, and Hours of Service

A restaurant featuring complex dishes with multiple components will require more labor than a cafeteria-style operation or a fast-food restaurant. Also, a restaurant that requires a higher level of skill to prepare complex dishes will require more experienced staff, which in turn means higher wages.

Added next section

The level of service provided to guests will also affect productivity. For example, a fine dining restaurant that provides a high level of attention to guests will have lower server productivity than a quick casual restaurant that doesn't provide table service, guests pick up their food at a counter and bus their own tables.

The hours open for service are yet another productivity factor. If the foodservice operation closes during slow periods between meals or is only open for breakfast and lunch the labor productivity should be higher than an operation which is open all day or even 24 hours a day.

Canadian book starts again

Quantity of Meals and Number of Meal Periods

The volume of business will affect the amount of labor required. Each restaurant will have a **minimum staffing level** without which it cannot operate. If it serves fewer people than this minimum staffing level can handle, the labor costs will be very high.

The number of meal periods can affect the productivity of the foodservice operation if different menus for each period require set-up and tear-down time. As well, different menus will usually mean a larger number of menu items, also affecting labor.

Facility Layout and Design and Production Equipment

Restaurant and other foodservice operation kitchens are often designed last, after all of the seating areas have been designed (or the rest of the school or dining hall, etc.) As a result, the space may be awkward and inefficiently laid out. To work efficiently, all work surfaces and storage areas required to produce an item should be located close together, as shown in Figure 13.3. This includes dry storage, refrigerated storage, freezers, storage for plates and glassware, work counters, grills, fryers, and ovens.

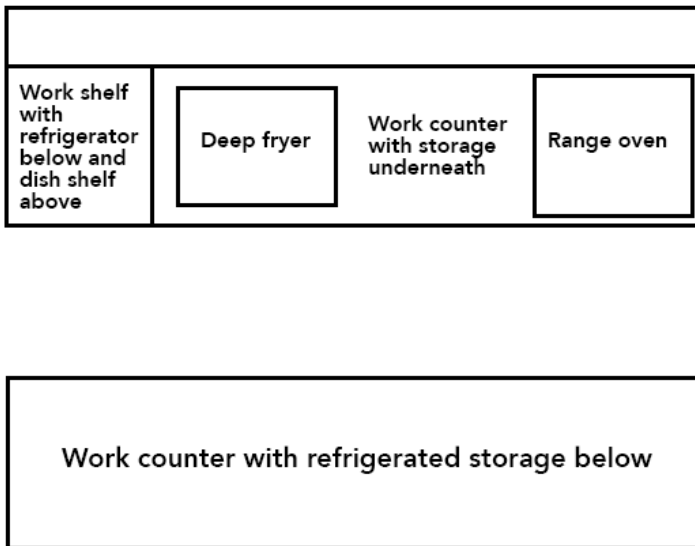


Figure 13.3 Kitchen layout can affect productivity

Long description:

A work counter is at the bottom. Opposite that is another work area which has a counter area on the left, a deep fryer on its right, another work counter and a range oven on the right. Refrigerated storage is below the counters.

End long description

Poor kitchen layout can limit the number of individuals who can work efficiently. It may require time-consuming trips to distant storage areas to obtain food items or dishes. If the layout of the kitchen is too spread out, the **minimum staff** needed to operate each station may increase. For example, if a salad preparation station is located away from the main kitchen, you may require a salad preparation person even when the restaurant is not busy.

Production equipment such as mechanical peelers,

choppers, and mixers can reduce the amount of time spent doing these tasks. The key to selecting the appropriate facility design and equipment is to match these parameters to the expected volume of business. For example, if you purchase too large a mixer for the volume of business, the work involved in cleaning the machine after use will not warrant the extra expense of purchasing the equipment. On the other hand, too small a mixer will reduce efficiency as you will be unable to mix the quantities needed in a single batch. The type of dishwashing system (or higher use of disposables) will also affect employee productivity.

Similarly, if your kitchen layout is very compact, you may be able to run efficiently with only one cook. However, you may be unable to meet the demands of a high volume of sales because the kitchen is too small to accommodate more than a couple of staff.

Work Environment, Number of Hours Worked, Breaks

A hot, humid, noisy environment reduces comfort and increases stress and may negatively affect performance. Long hours and hard work without reasonable breaks can lead to reduced productivity. The same is true if you are understaffed. Not having enough staff means that everyone else has to work harder or for longer hours, resulting in tired staff and reduced productivity. Managers and supervisors also need to understand how to motivate employees and improve morale to get the highest level of productivity from their staff.

Scheduling employees is an art. How long should it take an employee to do a job? Unfortunately, there is no book that provides the answers. Each manager needs to determine the time required and this requires research. For instance,

some managers do direct labor time analysis by putting the most efficient employee on the job and timing him or her to determine how much time it should take to do the job.

When scheduling employees:

- Schedule your best employees first to open the restaurant or foodservice each day.
- Schedule other employees as they are needed.
- Schedule employees according to work to be done.
- Avoid the need for using overtime.
- Train full-time employees to do more than one job.

Standardization – recipes, procedures, and production planning

When tasks are done the same way every time, employees are more productive. Station set-ups should be designed for maximum efficiency and then written into standard procedures. A standard recipe format, clear and concise mise en place, and work simplification strategies incorporated into recipes and production schedules help employees be more efficient. For instance, if six different recipes for one day need diced onions, then it's more efficient for one person to prepare all the onions at once, than several different cooks all dicing onions. In this case, a food chopper may also be used, which makes the task even more efficient. Production schedules provide the organization (mise en place) and standardized recipes provide all the details needed to increase efficiency.

Employee skill level, training, and supervision

How well employees are trained to do their jobs,

including knowing how to do multiple jobs in the foodservice operation (called cross-training) affects how productive they are and the efficiency of the operation as a whole. This is one of the reasons **employee turnover** is so costly. It takes time, effort and money to get an employee “up to speed” on any foodservice job, not to mention the specifics of each operation, including the menu, recipes, standard operating procedures, etc. When employees leave, new ones need to be trained, adding to decreased productivity and increased costs. Effective supervision keeps employees on task, motivated to do their jobs, and provides intrinsic rewards for a job well done.

Improving Productivity

In many situations there has been a lack of emphasis and training devoted to increasing productivity by foodservice managers. Labor costs are an issue today and foodservice operators who are placing emphasis on increasing productivity will be better able to remain competitive.

Management, being aware of productivity, can easily spot ways to improve. For example, it is not uncommon to see employees talking to each other because business is slow—this is poor use of paid time, and it is due to overstaffing or poor scheduling. “Standing time” should never be idle time.

Tasks should be set up that will “store up labor.” “Store up labor” means tasks that can be done when business is slow for use at peak times. For example, a cook can prepare nonperishable food items such as croutons, or grate cheese for later use; the waitstaff can wrap silver.

Today less and less “from scratch” cooking, particularly baking, is being done in the individual foodservices. Fine restaurants are even going outside to purchase dinner rolls,

croissants, and gourmet desserts (also “signature” items—those items the foodservice operation is known for).

It is wise for management to compare the costs of convenience foods with preparing “from scratch.” A substantial number of preparation and cooking hours can be eliminated through the use of convenience foods.

Convenience foods available can be sampled, and then the same items made from raw ingredients can be precosted and postcosted to determine how much time they take. Could one produce the items for less and will they be better than purchased? Is the frozen, prepared product more expensive? Can labor costs be reduced?

Ways of Increasing Productivity

To improve the productivity of employees, management must know what the existing productivity rate is, and what it should be, what affects productivity, and must set realistic goals for increasing productivity. Cutting the number of labor hours would seemingly increase productivity; however, that could mean that the job doesn’t get done. Increases in productivity don’t just happen and don’t come overnight. Setting standards, monitoring and adjusting any or all of the above workplace performance factors can all be ways of increasing productivity.

Productivity Standards

A first step in determining staffing needs is to establish productivity standards. These standards must take into account the amount of time necessary to produce food of the required quality. The standards are based on procedures dictated by standard recipes.

Productivity standards are measured in labor dollars or labor hours. Labor dollars measure productivity in terms of

the number of dollars that must be paid out in labor to generate a certain revenue. The advantage of this approach is that budgets and financial statements are also expressed in dollars so comparisons can be easily made. However, it can be very time-consuming to calculate the labor dollars given different wage and salary scales. Labor hours must still be calculated because the number of hours determines wages.

Labor hours indicate the number of hours of labor needed to produce a given number of meals or generate a certain amount of sales income. When you use labor hours as a standard, it is less time-consuming to calculate. As well, some simple tasks may take the same amount of time to complete, whether they are performed by a chef or a dishwasher. Using labor hours as the input for a productivity measure is a “true measure” of productivity because it is not affected by sales dollars or wage rates.

DETERMINING REQUIREMENTS

The productivity standard is determined by comparing the number of labor hours scheduled to meals served or to sales income generated. It can be produced by department, by shift, by position, or by position and shift. More detailed standards make it easier to pinpoint problem areas and take corrective action. The most detailed is to prepare productivity standards by position and shift. This allows you to examine the efficiency of each staff member.

It makes sense to look at each position and shift. For example, a breakfast cook working with a limited breakfast menu and items that are easy to prepare can produce many more meals in an hour than the cook on your evening shift who has a large number of menu items with more elaborate preparation needed. Generally, more servers are needed than

cooks for a given number of meals. Fewer dishwashers may be required. If only a single labor standard is developed for the restaurant, it will be harder to pinpoint problems with labor costs.

STAFFING GUIDE

Staffing guidelines are helpful for the task of staffing with just enough labor. However, the most exact method of staffing involves direct labor time analysis. Management generally is careful to hire only a basic core full-time crew and add flexible-hour employees as needed.

A staffing guide tells the manager how many labor hours are needed for each position and shift to produce and serve a given number of meals in the given restaurant. It incorporates the productivity standards. It tells managers what number of labor hours are needed for the volume of business forecast for a given meal period. The labor hours can be converted into labor dollars to establish standard labor costs.

The staffing guide serves as a tool for planning work schedules and controlling labor costs. The labor hours in the guide can be converted into labor dollars and standard labor costs by multiplying the labor hours for each position by the wage scale for that position. The staffing guide should be based on the performance of good employees. When scheduling new employees who have not completed an orientation training period, allowances will have to be made for their lower productivity.

This form of staffing guide is much more useful than industry guidelines that do not take into account the specific factors which affect the productivity in your workplace. It

may still be useful to compare your staffing guide to other properties in order to assess how competitive you are.

An example of a staffing guide is shown in Table 13.1. Note that the staffing guide shows the minimum number of staff per peak service period.

TABLE 13.1: STAFFING GUIDE

Type of Restaurant	Servers	Bus Persons	Chef or Sous Chef	Cooks	Dishwashers	Hosts
Coffee shop	1 per 25 seats	1 per 5 servers	1 per shift	2 per 65 meals	1 per 100 meals	1 per 10 servers
Casual dining room	1 per 20 seats	1 per 4 servers	1 per shift	2 per 50 meals	1 per 65 meals	1 per 8 servers
Formal dining room	1 per 15 seats	1 per 2 servers	1 per shift	2 per 40 meals	1 per 65 meals	1 per 4 servers

Guide shows minimum number of staff per peak service period.

Fixed Labor Costs

One factor that must be considered before developing a staffing guide is **fixed costs**. Fixed costs refer to the costs of running the operation that does not vary depending on the volume of business. For many businesses, the cost of the building, heating, lighting, insurance, and other similar costs are fixed. They do not change if the restaurant is busy or half empty. In fact, they continue even when the restaurant is closed.

Some labor costs are also fixed. If a restaurant has salaried employees, these costs are fixed and do not change depending on the volume of business. The business must pay

the salary of these employees, even if the restaurant is not busy. In most restaurants, management positions, including the chef and sous-chefs, are salaried employees.

Variable Labor Costs

Variable costs must also be accounted for. Variable costs are costs that change based on the volume of the business. Food costs are the most obvious example of variable costs. Provided that the restaurant has not overstocked food, food costs will increase in a direct correlation with the volume of business. Labor hours above the salaried staffing levels are also variable costs. As the volume of business increases, hourly labor costs will increase proportionately.

Peak Periods

When the staffing guide is used to develop a staff schedule, the supervisor needs to consider the peak periods. For example, if the volume reaches 150 meals, 10.5 labor hours may be needed in the kitchen. An analysis of sales shows that the busiest period is between 6 p.m. and 9 p.m. The supervisor might schedule the cooks so that the first cook comes in from 4:00 p.m. to 9:30 p.m. and the second cook comes in from 6:00 p.m. to 11:00 p.m. This would ensure that there are two cooks available to prepare meals throughout the busiest period.

Scheduling Staff

The scheduling of staff is based on the labor hours needed to meet the projected sales volume. The supervisor also needs to keep an eye on labor dollars by considering whether staff on a lower wage scale could be scheduled. For example, on holidays or other times when overtime rates must be paid, it would be less costly to bring in a new employee who is not eligible for statutory holiday pay.

Other factors to consider when developing schedules include the following:

Staggered work schedules can be used to meet the demand over peak periods without incurring additional labor costs throughout the full shift.

Part-time staff can be used to work short shifts of four or five hours to reduce overall labor costs.

Full-time staff are usually used to cover all key administrative positions; sometimes full-time positions can consist of a mix of supervisory and front-line tasks in order to make up a full-time job.

Temporary employees can be used to meet labor needs that are temporary in nature such as banquets, employee illness, or vacation relief.

Legal considerations such as the requirements of the Fair Labor Standards Act and provisions of any collective agreement must be kept in mind.

Staff capabilities should be taken into consideration; some employees may thrive in a stressful dinner rush while others perform well under less stressful situations. Some employees may have additional skills (e.g., hosting, bartending), which can be used effectively when sales volume is low if collective agreements or staff policies permit.

Employee's preferences should also be accounted for in the schedule. Policies should be in place for requesting shift preferences or exchanging shifts between staff members.

No matter how well you have planned the schedule, problems can arise. A staff member may call in sick or fail to show up without warning. The volume of sales may be lower or higher than anticipated. You must have contingency plans to deal with these problems. You could have a staff member (or a casual employee) on call in case he

or she is needed. You also have to know the capabilities of your staff. On a night when you have mostly experienced, capable servers and cooks who can handle stressful situations, you may be able to get by with one fewer staff than your staffing guide calls for.

When demand is lower than expected, you must know what limitations there are on sending staff home early, while still maintaining the minimum staffing needed to remain open. Of course, you must comply with collective agreements and all legislation that affects your workplace. If you understand the agreements and the Fair Labor Standards Act (2) well, you will know what flexibility you have to adjust to the situations that arise in the workplace.

Staying within Budgeted Labor Cost

A comparison of actual to budgeted labor costs can be used to plan future expenses. If your labor costs are higher than desired, you need to find ways to reduce them. One method of analyzing labor costs is to look at the actual and budgeted labor cost percentage. The projected labor cost percentage is calculated by dividing labor dollars by the projected volume of sales. The actual labor cost percentage is the actual labor dollars spent for a given time period divided by the actual volume of sales.

Example

A small restaurant has the standard labor hours and rates of pay shown in Table 13.2

Position	Labor Hours for 50 Meals	Labor Hours for 75 Meals	Labor Hours for 100 Meals	Hourly Rate (including benefits)
Food Server	8.5	12.5	16	\$9.85
Bus Person	6.5	6.5	9	\$10.95
Cook	7	10	14	\$16.50
Steward	6.5	6.5	9	\$12.00
Host	0	0	4	\$10.25

Table 13.2: Labor Planning and Cost Sheet

Based on previous sales figures for a Tuesday night, the manager expected 77 customers on a particular Tuesday evening. The projected revenue for this evening was \$1500.25. The manager developed a staff schedule based on the labor hours for 75 meals. The labor dollars were computed by multiplying the scheduled hours for each position by the hourly rate. The total labor cost for the evening was \$437.30. The projected labor cost percentage was:

$$\$437.30 \div \$1500.25 \times 100 = 29.1\%$$

On this evening, the sales were down. Although 76 customers were served, very close to the number expected, the average cheque size was lower. Only \$1425.95 worth of menu items were sold. The actual labor cost percentage was:

$$\$437.30 \div \$1425.95 \times 100 = 30.7\%$$

One of the best ways to improve productivity is to continually review and revise performance standards. Use the problem-solving process to identify the problem, generate alternatives, evaluate the alternatives, choose the

best ideas, and implement them. Some questions you might ask yourself are:

- Can a particular task be eliminated?
- Is training or cross-training needed to improve the skills of staff?
- Can a task be reassigned to a person who is not as busy (e.g., could the dishwasher assist with some pre-preparation of items early in the shift)?
- Can slow periods be utilized more effectively to prepare for high-volume times?
- Does the menu need to be simplified?
- Is there standardization or simplification that can be done for systems of the operation?
- Do menu or volume changes require changes in facility layout?
- Would convenience items reduce costs without reducing the required quality?
- Should more part-time workers or temporary workers be used? Or is there a need for more flexible schedules or split shifts?
- Is overtime being used carefully or not at all?
- Is there an opportunity to introduce self-service or vending somewhere in the operation?
- Are the activities of another part of the operation affecting the performance of this department (e.g., the catering department has opened a new conference room some distance from the kitchen

which requires food service)?

- Have there been changes in volume and peak times that need to be considered? Is the time open for service being maximized or does it need to be adjusted?
- Has paperwork been reduced as much as possible through computerization?

After considering all of these factors, you may still not be able to reduce your labor costs. You may have to raise your menu prices to improve the profitability of your operation. Of course, you need to consider the price the market will bear and the prices charged by your competitors before taking such an action.

It is often useful to look at both your food costs and labor costs when deciding whether a price increase is needed. If your labor costs are a little higher than anticipated and your food costs are lower, there may not be a problem. Some companies use a figure of 70% to 80% as a target for the sum of labor and food costs. Another strategy is to have lower contribution margins but increase your volume. This makes sense because the more volume you have, the more money is contributed toward meeting your fixed costs of doing business.

Position Performance Analysis

Productivity standards are developed by considering the labor hours needed to perform assigned tasks. During a designated observation period, employees are asked to perform their jobs, adhering carefully to all established policies and procedures. They are carefully observed to ensure compliance. For example, cooks would be expected

to follow all standard recipes, take scheduled rest breaks, and meet the required quality standards. This process of analyzing productivity is called a position performance analysis.

The employee is observed over several shifts. At the end of each shift, the supervisor completes a report, as shown in Figure 13.4, which indicates the name of the employee observed, the meal period considered, the number of meals prepared, the number of hours worked, and number of guests per labor hour. The supervisor also records comments on workflow, adequacy of service, problems that arose, etc.

Figure 13.4 Position Performance Analysis

Position:

Name of employee:

Shift:

Task	April 5	April 6	April 7	April 8	April 9
Number of meals served	-	-	-	-	-
Number of hours worked	-	-	-	-	-
Number of meals per labor hour	-	-	-	-	-

Supervisor comments:

General comments:

Recommended meals/labor hour for this position 30

Performance review by:

Restaurant Manager

Figure 13.4: Position performance analysis

Tools like this can help you identify the productivity of

each staff member. Perhaps one cook is capable of producing 40 meals to the same standard in the time it takes another cook to produce 30. The first cook is more productive, and therefore a better choice to schedule on the busier evenings. You may also use this analysis to set goals and identify development options.

Controlling labor costs is critical

All in all, food costs and labor costs make up the bulk of the costs in running a successful kitchen. Having a solid understanding of both and how to manage them will be key in running a successful food service operation, whether it be a food truck or a major hotel.

REVIEW QUESTIONS

- What are some examples of labor costs other than just salaries and wages?
- How is “minimum staff” different than an effective staffing plan for providing high-quality customer service?
- How would you define labor productivity?
- Describe factors that can be controlled by the foodservice manager that affect workplace performance and productivity.
- What are some factors to consider in choosing a productivity measure to use as a benchmark for a foodservice operation?
- How are sales forecasting and labor scheduling related?
- Why is service labor in a foodservice operation

considered a “perishable” expense?

- What are some best practices for reducing labor costs, but maintaining high-quality customer service?

REVIEW EXERCISES



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Chapter 14 - Managing and Controlling Other Expenses

Chapter Outline:

- What are Other Expenses?
- Controllable Expenses
- Non-controllable Expenses
- Fixed versus Variable Expenses
- Managing and Controlling Other Expenses
- Contracting
- Technology Tools
- Occupancy Costs and Interest Expense

Learning Objectives:

- Define “other expenses” or expense items that are not directly related to Food & Beverage or Labor
- Categorize “other expenses” in a typical foodservice operation profit and loss statement

- Explain the sources of “other expenses” and the variations that may result from the ownership structure of a restaurant
- Distinguish between variable, fixed, mixed, controllable and non-controllable expenses
- Describe strategies to control “other expenses”

Key Terms:

- **Other Expenses**
- **Uniform System of Accounts for Restaurants**
- **Statement of Profit and Loss or “Income Statement”**
- **Controllable versus Non-Controllable Expenses**
- **Controllable Profit**
- **Fixed versus Variable expenses**
- **Budget**

WHICH LINE ITEMS ARE CONSIDERED “OTHER EXPENSES”?

The Uniform System of Accounts for Restaurants published by the National Restaurant Association provides a standardized account classification system that is used by most restaurant operators. Other Expenses are categorized as controllable or non-controllable. The Uniform System advocates the following presentation for the Statement of

Profit and Loss or “Income Statement” (Other Expenses are highlighted):

Revenue

- subtract Cost of Sales
- subtract Payroll & Employee Benefits
- subtract Controllable Expenses
- equals **Controllable Profit**
- subtract Occupancy & Depreciation Expenses
- add Other non-operating Income
- subtract Interest Expenses
- equals **Net Income Before Taxes**

The **Other Expenses** category regroups all expenses that do not directly relate to Cost of Goods Sold and Employee Payroll & Benefits. A detailed list of Other Expenses line items is presented in the list below. However, restaurants have customized lists that suit the nature of their operations.

On-site foodservice operations, such as those in education, healthcare, etc. may not follow the Uniform System of Accounts for Restaurants, but all segments in the industry have some accounting system that separates food & beverage, labor and “other” expenses. Those foodservice operations in non-profit settings may not pay occupancy expenses and taxes, but they may have expenses considered “indirect” costs or other similar categories. No matter what the category of operation, other expenses are part of the picture and must be controlled to manage the “bottom line.”

Controllable Expenses

Controllable expenses adjust as a result of managerial

decisions. These costs can be increased or decreased within a reasonably short period and include such categories as:

- Direct Operating Expenses (uniforms, laundry, tableware, paper supplies, cleaning supplies, contract cleaning, etc.)
- Music & Entertainment
- Sales & Marketing
- Utilities
- General & Administrative
- Repairs & Maintenance

As an example “Flowers and Decorations”, which is a line item under Direct Operating Expenses, is a controllable expense insofar as the related cost is directly under the control of a manager who can modify the amount at will.

Non-Controllable Expenses

Non-controllable expenses tend to be fixed in nature and cannot usually be changed within the normal rhythm of business (or fiscal year) and include costs under the following categories:

- Occupancy Costs (Rent, building insurance, real estate and property taxes, equipment leases, etc.)
- Depreciation & Amortization
- Corporate Overhead
- Interest Expense
- Taxes (local, state and federal)

Rent comes under “Occupancy Cost” and is an example of

a non-controllable cost. While it is possible to renegotiate more favorable conditions, the outcome would take a long time and involve the decisions of multiple stakeholders.

Other Expenses: Controllable:

- **Direct Operating Expenses:**
 - Auto or Truck Expenses
 - Banquet and Catering
 - Bar Supplies
 - Cleaning Supplies
 - Contract Cleaning
 - Equipment/Other Rentals
 - Flowers and Decorations
 - Guest Supplies
 - Kitchen Utensils and Supplies
 - Laundry and Dry Cleaning
 - Linen and Linen Rental
 - Menus and Drink Lists
 - Miscellaneous
 - Paper and Packaging
 - Parking
 - Tableware /Smallwares
 - Uniforms
- **General & Administrative:**
 - Accounting and Payroll

- Bad Debts
- Bank Charges
- Cash (Over) / Short
- Claims and Damages Paid
- Collection Fees
- Consulting and Coaching Services
- Credit Card Charges
- Directors' or Officers' Fees
- Dues and Subscriptions
- Franchise Fees
- Insurance – Liability and General
- Licenses and Permits
- Miscellaneous
- Office Printing and Supplies
- Personnel
- Postage
- Professional Services
- Security and Deposit Services
- Telephone and Communications
- Training
- **Repairs & Maintenance:**
 - Building and Structure
 - Equipment and Furniture
 - Grounds and Parking Lot

- Total Repairs & Maintenance
- **Music & Entertainment:**
 - Audio Broadcast Service
 - Bands and Musicians
 - Comedians and Entertainers
 - Meals Served to Musicians and Entertainers
 - Music Licensing Fees
 - Television Broadcast Service
- **Marketing:**
 - Advertising
 - Direct Response Marketing
 - Public Relations and Publicity
 - Research
 - Other
- **Utilities:**
 - Electricity
 - Gas
 - Heating Oil and Other Fuel
 - Recycling Credits
 - Trash Removal
 - Water and Sewage

Other Expenses: Non Controllable

- **Occupancy Costs :**
 - Rent (facility, parking...)
 - Common Area Maintenance
 - Insurance of Building and Contents
 - Other Municipal Taxes
 - Personal Property Taxes
 - Real Estate Taxes
- **Equipment lease, Depreciation & Amortization, Interest Expense**
 - Notes
 - Long-term Debt
 - Other

The list is provided as an example, restaurants have their customized list that reflects their operation.

FIXED VERSUS VARIABLE EXPENSES

For management and control purposes, expenses are further categorized as fixed, variable or semi-variable depending on how they vary as the activity level of an operation fluctuates:

- Food cost is an example of variable expense as it fluctuates in direct proportion to increases and decreases in sales (volume of business or number of customers)
- Rent is a fixed cost that stays the same irrespective of changes in revenues or volume of business
- Energy is a semi-variable expense. Security lights,

refrigeration, and air-conditioning or heat stay on when the restaurant is closed. Energy costs increase when the restaurant resumes operation and things like ovens, grills, and lighting are operating at peak levels.

Managing and Controlling Other Expenses

Other Expenses are expressed in either Percentage of Total Sales:

Other Expenses (\$) divided by **Total Sales (\$)** equals **Other Expenses %**

and/or Dollar Cost per Guest:

Other Expenses (\$) divided by **Number of Guests** equals **\$ Cost per Guest**

Individually, the “other expenses” line items represent a small percentage of total revenues and are often overlooked. According to a study by the National Restaurant Association, Direct Operating Expenses (c.f. previous definition) account for 3% to 5% of revenues. However, restaurant operations are low margin businesses and 3% to 5% of revenues could also represent the net income (or profit). Therefore, restaurant managers need to pay attention to each line of expense.

According to the formula stated above, in order to reduce the other expenses percentage, either sales have to go up or expenses have to decrease. Controlling other expenses requires managers to monitor and reduce the variable portion of these other costs where appropriate. However, controllable expense items are mostly semi-variable. In an on-going operation, some costs will decrease but a fixed portion will continue to occur when the activity slows down or even closes. Maintenance and reduced cleaning schedules will still be enforced, advertising will be reduced but not eliminated,

guest supplies will be stocked for re-opening, a person will need to keep on taking reservations, security lights and refrigeration will still be switched on.

As previously mentioned, variable costs are influenced by managerial decisions and policy. Therefore, establishing and enforcing operating procedures is an essential part of controlling other expenses.

EXAMPLE: UTILITY POLICIES AND EXPENSES

14.1 ENERGY CONSUMPTION - FOOD SERVICE

Category	Percentage
Space heating	8.95%
Cooling	5.84%
Ventilation	6.03%
Water heating	8.37%
Lighting	3.70%
Cooking	38.72%
Refrigeration	22.18%
Office equipment	1.36%
Computing	0.78%
Other	4.09%
Total	100.00%

Utilities in restaurants represent 3.5% to 5.5% of revenues. Cooking-related activities (water heating, cooking, and refrigeration) account for approximately 70% of total energy expenses.

Restaurants manage energy costs by combining proper management and maintenance policies with technology. Checklists are provided to employees responsible for turning

off cooking equipment, exhaust fans, lights, computers, and office equipment. The following checklist is an example of an energy-saving program.

Equipment and Energy Saving Program

- Switch off the door heater on your reach-in refrigerator or freezer
- Check the temperature setting in refrigerators and freezers
- Temperatures that drift below recommended levels waste energy
- Clean refrigerator coils regularly
- Reduce defrost cycles in refrigerators
- Inspect refrigerator and freezer doors to prevent leakage of cool air
- Upgrade your walk-in refrigerator and freezer
- Adding strip curtains cut air infiltration by 75 percent, automatic door closers are inexpensive
- Shift ice production time in ice machines
- Timers shift ice production to nighttime off-peak hours
- Replace incandescent light fixtures with LEDs
- Install occupancy sensors
- Replace air filters in air-conditioning (AC) systems
- Check AC temperatures
- Maintain panels on rooftop AC units
- Maximize location of kitchen appliances

- Group heavy-duty appliances, such as charbroilers under the center of the hood, and place ovens at the ends
- Install a low-flow pre-rinse sprayer valve
- Set your hot water temperature at around 130° F
- Fix leaks
- Maximize efficiency of dishwashers

Longer-Term Solutions

- Invest in connectionless steamers for cooking
- Install a variable-speed (exhaust) hood controller
- Install fan controllers for walk-in coolers and freezers
- Retrofit the defrost controller
- Invest in remote air-cooled ice machines
- Invest in a high-efficiency, condensing water heater
- Consider low-flow toilet fixtures
- Install energy-efficient windows
- Paint the exterior in a light color

The above energy-saving program is an example of the type of program and decisions that foodservice managers need to consider in controlling costs. Procurement and buying decisions for direct operating expenses (see Table 14.1) need to be carefully researched and considered to be sure that other

expenses that are controllable are being managed as carefully as possible.

Contracting

Food service operations farm out numerous services to suppliers. These may include maintenance (kitchen equipment, building mechanical, etc.), pest control, grounds services (landscaping, snow removal), uniform rental and cleaning, insurance, communication, printed material, and various guest supplies. To ensure that the operation benefits from the most competitive rates, contracts should be awarded through a request for proposal (RFP) or bid process and re-examined periodically.

Technology Tools

Restaurant operations are increasingly reliant on technology for the front of the house operations with the use of such systems as reservation management, kiosks and tabletop tablets, digital point of sales, and loyalty programs, or back of the house with inventory and ordering systems, energy management, maintenance records, and scheduling.

While technology assists management decision processes optimizing revenues and expenses, it also generates significant costs (investment, equipment and software maintenance and upgrade, obsolescence, etc.) and a related investment should be the subject of a detailed cost/benefit analysis.

Occupancy Costs & Interest Expense

Occupancy and Interest expenses include such items as rent (ground, facility, parking), common area maintenance, insurance of building and contents, taxes (municipal, personal property, real-estate) and interest expenses on long-term debt (generally mortgages.) Occupancy and interest expense, therefore, depend on the ownership structure of the

operation. Does the operator own or lease the facility? If owned, is the mortgage paid-off?

This expense category is fixed and non-controllable. It can only be changed in the long run through lease renegotiations, loan refinancing or repayment, or an appeal for real estate tax revision.

If the foodservice operation is part of a non-profit business or institution, indirect costs and budget categories that cover overhead costs may be beyond the control of the foodservice director, but they are still costs that need to be covered by revenue generated by the operation.

A note of caution:

- While a manager has little power of decision over non-controllable expenses, he/she is still accountable for producing enough revenues to cover them.
- Controlling expenses is not synonymous with cost-cutting. Indiscriminately cutting costs can result in using inferior products, constant breaking down of equipment, run-down facilities, outdated décor, etc. which can also lead to low employee morale, being understaffed or left with unskilled workers, all of which could damage guest experience and ultimately ruin a business.

It's a Constant Balancing Act

Controlling expenses consist of aligning an operation's expense level with the service standard and price point that is advertised (and hopefully delivered) to the guests. Therefore, proper control requires a manager to forecast the desirable expense level and benchmark the actual costs against forecasts

that are materialized in a budget (c.f. Budgeting chapter). It's a managerial skill that takes experience and practice to develop.

REVIEW QUESTIONS

- What is the difference between controllable, non-controllable, fixed and variable other expenses?
- Where should a foodservice manager spend most of their time and energy when trying to control other expenses?
- Describe two ways to analyze the other expense category when making management decisions.
- What are some best practices for controlling equipment and energy expenses?
- What kinds of responsibilities might be contracted out to other suppliers and why would a foodservice manager decide to do this?
- Which types of "other expenses" are different for non-profit foodservice operations?

REVIEW EXERCISES



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Section 5 - Planning for Profitable Business

Chapter 15 - Cost-volume Profit (CVP) Analysis and Break-Even Point

Chapter Outline:

- Introduction to CVP analysis
- Calculations for a CVP analysis
- Using a CVP to target a desired profit
- Break-even point explained
- Computing the break-even point

Learning Objectives

- Explain how Cost-Volume Profit (CVP) analysis

is related to planning for a profitable business

- Describe the relationship between sales volume, costs and profit
- Describe the notion of costs behavior (variable vs. fixed)
- List the assumptions behind a CVP analysis
- Calculate a CVP analysis using a step-by-step process
- Explain the concept of a Break-Even Point
- Calculate break-even points for both sales/revenue dollars and number of units sold.

Key Terms and Concepts:

- CVP analysis
- revenues and sales volume
- contribution margin income statement
- contribution margin
- contribution margin percentage
- variable costs/ expenses
- fixed costs/expenses

- operating income
- break-even point
- break-even sales
- break-even number of units sold

INTRODUCTION:

CVP analysis looks at the effect of sales volume variations on costs and operating profit. The analysis is based on the classification of expenses as variable (expenses that vary in direct proportion to sales volume) or fixed (expenses that remain unchanged over the long term, irrespective of the sales volume). Accordingly, operating income is defined as follows:

$$\text{Operating Income} = \text{Sales} - \text{Variable Costs} - \text{Fixed Costs}$$

A CVP analysis is used to determine the sales volume required to achieve a specified profit level. Therefore, the analysis reveals the **break-even point** where the sales volume yields a net operating income of zero and the sales cutoff amount that generates the first dollar of profit.

Cost-volume profit analysis is an essential tool used to guide managerial, financial and investment decisions.

COST-VOLUME PROFIT ANALYSIS**Contribution Margin and Contribution Margin Percentage**

The first step required to perform a CVP analysis is to display the revenue and expense line items in a Contribution Margin Income Statement and compute the Contribution Margin Ratio.

A simplified Contribution Margin Income Statement classifies the line items and ratios as follows:

*Contribution Margin Income Statement***Table 15.1 Contribution Margin Income Statement**

Statement Item	Amount	Percent of Income
Sales	\$100	100%
(Deduction) Variable Costs	\$60	60%
(Total) Contribution Margin	\$40	40%*
(Deduction) Fixed Costs	\$30	30%
(Total) Operating Income	\$10	10%

Table 15.1 Contribution Margin Income Statement. The table shows the percent of income for sales, contribution margin, and operating income are observed as totals, after variable and fixed cost deductions.

** Contribution Margin Percentage*

The method relies on the following **assumptions**:

- Sales price per unit is constant (i.e. each unit is sold at the same price);
- Variable costs per unit are constant (i.e. each unit

costs the same amount);

- Total fixed costs are constant (i.e. costs such as rent, property taxes or insurance do not vary with sales over the long term);
- Everything produced is sold;
- Costs are only affected because activity changes.

The equation: **Operating Income = Sales – Variable Costs – Fixed Costs**

Sales = units sold X price per unit

Variable Costs = units sold X cost per unit

The first equation above can be expanded to highlight the components of each line item:

Operating Income = (units sold X price per unit) – (units sold X cost per unit) – Fixed Cost

The **contribution margin** is defined as Sales – Variable Costs. Therefore,

Contribution Margin (\$) = (units sold X price per unit) – (units sold X cost per unit)

And the Contribution Margin Percentage (CM%) is computed as follows:

CM% = Contribution Margin (\$) / Sales (\$)

Accordingly, the following is another way to express the relationship between contribution margin, CM percentage, and sales:

Contribution Margin \$ = Sales \$ X Contribution Margin %

The **contribution margin percentage** indicates the portion each dollar of sales generates to pay for fixed expenses (in our example, each dollar of sales generates \$.40 that is available to cover the fixed costs).

As variable costs change in direct proportion (i.e. in %) of revenue, the contribution margin also changes in direct proportion to revenues, However, the contribution margin percentage remains the same. Example:

$$\begin{array}{l} \text{Revenues } \$100 - (20 \text{ units} \times \$5) \\ \text{Var. Costs } \$60 - 60\% (20 \text{ units} \times 60\%) \\ \text{CM} \quad \quad \$40 \quad - \quad \mathbf{40\%} \end{array}$$

If revenues double:

$$\begin{array}{l} \text{Revenues } \$200 - (40 \text{ units} \times \$5) \\ \text{Fixed Costs } \$120 - 60\% (40 \text{ units} \times 60\%) \\ \text{CM} \quad \quad \$80 \quad - \quad \mathbf{40\%} \end{array}$$

Targeted Profit

CVP analysis is conducted to determine a revenue level required to achieve a specified profit. The revenue may be expressed in number of units sold or in dollar amounts.

Income Statement

Table 15.2 Income Statement

Statement Item	Amount	Percent of Income
Sales (20 units X \$5)	\$100	100%
(Deduction) Variable Costs (20 units X \$3)	(\$60)	(60%)
(Total) Contribution Margin	\$40	40%
(Deduction) Fixed Costs	(\$30)	(30%)
(Total) Operating Income	\$10	10%

Table 15.2 Income Statement. The table shows an income statement that observes total income from sales, contribution margin total after variable cost deduction, and operating income total after fixed cost deduction.

How much sales is required to achieve a \$20 profit?
This can be answered by finding the **number of units sold**
or the **sales dollar amount**.

1. Required number of units sold:

Profit = Revenues – Variable Costs – Fixed Costs

$$\$20 = (\text{Units Sold} \times \$5) - (\text{Units Sold} \times \$3) - \$30$$

$$\$50 = (\text{Units Sold} \times \$5) - (\text{Units Sold} \times \$3)$$

Sales deducted from Variable Costs is the
definition of contribution margin

$$\$50 = (\text{Units Sold}) \times (\$5 - \$3)$$

(\$5-\$3=\$2 which is the \$ contribution margin
per unit)

**\$50/\$2 = 25 Units sold needed to achieve \$20
in profit**

$$\frac{\text{Units sold to achieve targeted profit} = (\text{Fixed Costs Dollar} + \text{Targeted Profit Dollar})}{\text{Contribution Margin Dollar Per Unit}}$$

Verification:

*Income Statement***Table 15.3 Income Statement**

Statement Item	Dollar Amount	Percent of Income
Sales (25 units X \$5)	\$125	100%
(Deduction) Variable Costs (25 units X \$3)	(\$75)	(60%)
(Total) Contribution Margin (25 units X \$2)	\$50	40%
(Deduction) Fixed Costs	(\$30)	(30%)
(Total) Targeted Operating Income	\$20	10%

Table 15.3 Income Statement. The table shows an income statement that observes sales, contribution margin, and targeted operating income totals, after variable and fixed cost deductions.

Note: while Operating Income doubled, (from \$10 to \$20) only 5 additional units sold (+25%) were required as only variable costs changed while fixed costs remained at \$30.

2. Required sales dollar amount

Profit \$ = sales \$ – Variable Costs \$ – Fixed Costs \$
and

Sales \$ – Variable Costs \$ = Contribution Margin \$
So,

Profit \$ = Contribution Margin \$ – Fixed Costs \$

We saw earlier that Contribution

Margin \$ can be expressed as:

Sales X Contribution Margin %

Contribution Margin \$ = (Sales \$ x Contribution Margin %)

Profit \$ = (Sales \$ x Contribution Margin%) – Fixed Costs \$

Profit \$ + Fixed Costs \$ = (Sales \$ x Contribution Margin %)

(Targeted Profit \$ + Fixed Expense \$) / Contribution Margin % = Sales \$

Verification:

Sales Required to achieve \$20 in targeted profit:

$$(\$20 + \$30) / 40\% = \$125$$

CVP formulas to be remembered:

- Required sales based on units sold to yield a targeted operating income:

Required number of units sold For Targeted Profit =

$$\frac{(\text{Fixed Costs Dollar} + \text{Targeted Profit Dollar})}{\text{Contribution Margin Dollar Per Unit}}$$

- Required sales based on contribution margin percentage to yield a targeted operating income:

Required Dollar Sales For Targeted Profit =

$$\frac{(\text{Fixed Costs Dollar} + \text{Targeted Profit Dollar})}{\text{Contribution Margin Percentage}}$$

Break-even Point

The break-even point is reached when total costs and total revenues are equal, generating no gain or loss (Operating Income of \$0). Business operators use the calculation to determine how many product units they need to sell at a given price point to break even or to produce the first dollar of profit.

Break-even analysis is also used in cost/profit analyses to verify how much incremental sales (or revenue) is needed to justify new investments.

The following graph illustrates the break-even point based on the number of covers sold in a restaurant

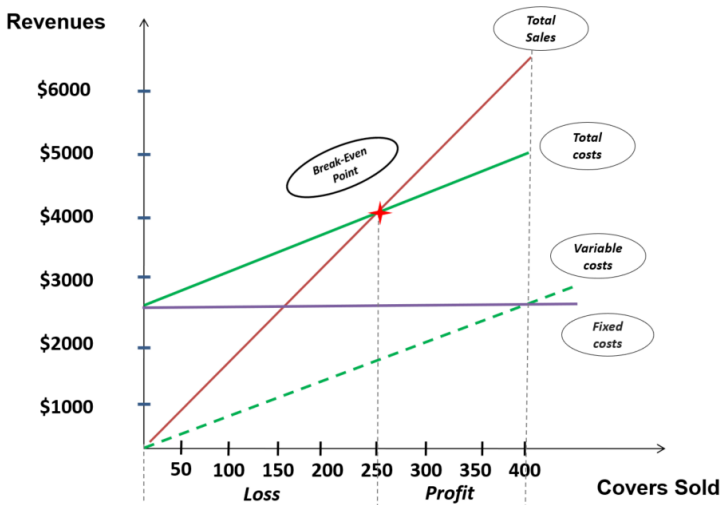


Figure 15.1 Break-even point based on the number of covers sold in a restaurant

Long description:

A line graph with covers sold on the x axis. the x axis starts at 0, and has increment markers in intervals of 50, increasing to a maximum of 400. There is a label for loss indicated from the start of the x axis (0) to the fifth interval marker (250). There is a label for profit indicated on the x axis starting after the 250 marker. The Y axis is labeled for revenues, also starting at 0, incrementing by one thousand dollars every marker, to a maximum of six thousand dollars. There are four lines graphed. One of which is a line representing total sales, which increases at linear rate, starting point (0 , \$0), and ending point (400, \$6000). Another line represents the total costs, which also increases at a linear rate. Its starting point is (0 , \$2500), and its ending point is (400, \$5000). The total sales and total costs lines that are graphed, intersect at the point (250, \$4000) which is labeled as the break even point. the intersection of these two lines emphasize (as the x axis profit label does, which was mentioned earlier in this description) that profit occurs after 250 covers are sold. A fixed cost line is represented in this graph as well. Starting point (0 , \$2500), and ending point (400, \$2500). Showing that fixed costs are static and not dependent on covers sold. The last line represents variable costs, starting point (0 , \$0) and ending point (400, \$2500). Notice the ending point of the total costs line equals the fixed cost and variable cost totals. End long description.

- The Sales line starts at the origin (0 revenue for 0 covers) and grows in direct proportion to the number of covers sold;
- Variable costs grow in direct proportion to Sales but at a slower rate. The line starts at the origin

since no variable cost arises if no sale occurs;

- The Fixed Costs line remains flat (unchanged irrespective of the number of covers sold). The operation incurs Fixed Costs such as rent whether the operation operates (is open for business) or not;
- Total Cost grows at the same rate as Variable Costs. The Total Cost minimum is represented by the Fixed Costs line;
- The Break-Even point occurs where the Total Sales line crosses the Total Costs line. In this illustration, the operation starts being profitable when selling exceeds 250 covers.

Computing the Break-Even Point

Computing the break-even point is equivalent to finding the sales that yield a targeted profit of zero.

Example

The average check (selling price per cover) for the Roadside Exotic BBQ Restaurant is \$16. The restaurant averages 85 covers sold a day or 2,250 covers per month. The restaurant currently loses money as indicated in the following statement:

Roadside Exotic BBQ Restaurant
Income Statement

**Table 15.4 Income Statement for an Exotic
Barbecue Restaurant**

Statement Item	Dollar Amount	Percent of Income
Sales (2,250 Covers x \$16)	\$40,800	100%
(Deduction) Variable Costs	(\$29,376)	(72%)
(Total) Contribution Margin	\$11,424	28%
(Deduction) Fixed Costs	(\$13,464)	(30%)
(Total) Operating Income	(\$2,040)	(5%)

***Table 15.4 Income Statement for an Exotic
Barbecue Restaurant.***

The owner wants to know the sales volume required in terms of both dollars (\$) and the number of covers for the restaurant to break even considering its current expense structure.

1. Required number of covers sold

$$\frac{\text{Required number of covers sold} = (\text{Fixed Costs Dollar} + \text{Targeted Profit Dollar})}{\text{Contribution Margin Dollar Per Unit}}$$

In this case,

- Targeted Profit = zero (definition of Break-even)
- Contribution Margin per unit: \$16 X

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$$28\% \text{ (CM\%)} = \$4.48$$

$$\frac{\text{Fixed Cost Dollar}}{\text{Contribution Margin Dollar /unit}} = \frac{\$13,464}{\$4.48}$$

= 3,005.36 (3,006) covers or
100.18 (101) covers per day.

Verification

Roadside Exotic BBQ Restaurant

Income Statement

Table 15.5 Income Statement of an Exotic Barbecue Restaurant

Statement Item	Dollar Ammount	Percent of Income
Sales (3,005.36 Covers x\$16)	\$48,086	100%
(Deduction) Variable Costs	(\$34,622)	(72%)
(Total) Contribution Margin	\$13,464	28%
(Deduction) Fixed Costs	(\$13,464)	(28%)
(Total) Operating Income	(\$0)	(0%)

Table 15.5 Income Statement of an Exotic Barbecue Restaurant

2. Required Sales

Sales \$ = Targeted Profit \$ + Fixed Expense \$

Contribution Margin %

Since targeted profit is zero, the formula for the Break-Even Sales is:

Fixed Expense \$ = \$13,464 = **\$48,086**

Contribution Margin % 28%

Break-Even formulas to be remembered:

- Break-Even number of Units sold

Break-Even number of units sold =

**(Fixed Costs Dollar / Contribution
Margin Dollar per unit)**

- Break-Even Sales

Break-Even Sales \$ =

**(Fixed Costs Dollar / Contribution
Margin Percentage)**

Summary

The break-even point calculation allows food service operators to calculate the number of covers (or units sold) or total sales needed to cover all costs of the operation given the level of business generated. Once the break-even point is met, additional revenue (or sales) starts to generate a profit, which is typically at least one purpose of running a business. Cost volume profit analysis allows the food service operator to calculate similar figures but with a targeted profit in mind. This CVP analysis is an essential tool in guiding managerial, financial and investment decisions for current operations or future business ideas or plans.

REVIEW QUESTIONS

Short Answer

1. How would conducting a cost volume profit analysis help a food service operator make decisions about future business ideas?
2. What sort of assumptions need to be made about a food service operation in order to complete a cost volume profit analysis
3. How might calculating a break-even point be useful to a food service manager?

Matching



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Chapter 16 - Developing and Analyzing the Budget

Chapter Outline

- Introduction to budgeting for business
- Operating, cash, and capital budgets
- Budgeting process
 - Articulate assumptions
 - Quantify assumptions
 - Budget versus actual – monitor the variances

Learning Objectives

- define budgeting and financial management terminology
- recognize the importance of planning, including accurate budgeting, in the operational and financial success of a food & beverage operation
- analyze the economic and competitive environment confronting a business (when involved in the budgeting process)
- identify the specific characteristics that provide a competitive advantage (or disadvantage) to a particular operation
- explain how budget figures are developed based on previous years data and projected increases or decreases in activity
 - recognize restaurant revenue and cost drivers
 - Number of covers
 - Average Check
 - Contribution Margin
 - Prime Cost
 - Variable and fixed costs
 - explain how revenues and expenses flow through the financial statements
 - analyze budget figures to compare projections to actuals

- describe the difference between
 - net income and operating cash flow
 - cash versus operating budget

Key Terms and Concepts

- operating budget
- cash budget
- capital budget
- restaurant revenue and cost drivers
 - Number of covers
 - Average Check
 - Contribution Margin
 - Prime Cost
 - Variable and fixed costs
- net income
- operating cash flow

INTRODUCTION TO BUDGETING FOR BUSINESS

Budgeting and Cost-Volume-Profit (Breakeven) analysis are two main tools available to food service managers when planning for profit. This chapter will explore developing and analyzing the budget.

In its simplest form, a budget is a projection of anticipated revenues and expenses over a specific period of time. In the case of businesses, this is typically on a monthly, yearly and multi-year basis. The budget functions as a plan materializing what a business expects to achieve during the stated period.

A budget details the operational direction and the anticipated financial results of an operation. It provides a basis for continuously monitoring the operational and financial conditions and trends of an entity. The budget also defines the operational and financial limits of the operation.

The budget serves as a benchmark against which actual results are measured. As such, the budget is a tool supporting managerial decisions regarding resource allocation in order to achieve the goals of the organization.

A budget allows the operator to:

- conduct a critical review and learn from past performance
- involve those responsible for future performance in the forecasting process.
- be aware of how revenues, expenses, and cash flow interact in a restaurant

- plan for future cash events to avoid shortfalls
- evaluate different scenarios and courses of action to achieve desired profit levels
- monitor actual performances and compare them with the standards established in the budget
- take timely corrective actions to correct potential problems

A budget is not a static document and should be periodically modified to take into account the actual data about sales and costs affecting the direction of the overall operation.

Companies generally produce different types of budgets.

- **The operating budget** forecasts revenues and expenses for the operation. This budget mimics the profit & loss statement and provides anticipated revenues and expenses for each accounting period. An operating budget usually includes twelve monthly statements with a year-to-date and a yearly report. This budget also shows projected net income, the final amount of profit or loss after all expenses have been subtracted from sales (revenue.)
- **The cash budget** forecasts the cash outflows and inflows for a specific period. It assesses the ability of a business to meet its payment obligations and to ensure that excess cash is managed in a productive way.

In general, an operation's revenues and cash cycles are not in line. Employee and supplier's payments may not correspond to the timing of revenues. Revenues may not generate

immediate cash when booked as account receivables.

Restaurant operations are affected by seasonality where expenses occur on an on-going basis while revenues may be concentrated over a shorter period (eg. resorts, educational settings, locations experiencing severe climatic events, etc.) requiring operations to plan for the periods of cash shortfalls. This requires food service managers to pay careful attention to operating cash flow, which is the amount of cash generated by regular business operations and indicates whether an operation has the cash it needs to grow.

Cash issues are one of the leading factors for the restaurant's high rate of failure. A restaurant may appear to be profitable while being unable to meet its payment obligations (revenues exceed expenses but are booked as account receivables).

- **The capital budget** anticipates future cash requirements for investments in assets and equipment.

Food & beverage operations are particularly vulnerable to rapid shifts in consumption trends as illustrated by the demand for organic food products, sustainable and traceable production sources, healthier cooking methods, and ethnic/fusion cuisine.

Accordingly, the life cycle of a restaurant is limited and requires periodic renovations to maintain an attractive servicescape (impact of the physical environment and service process on guests' behavior) and functioning equipment. In addition, food & beverage operations are increasingly

investing in technology and information systems for such functions as point-of-sales and reservation systems, loyalty programs, purchasing and inventory, accounting, and human resources management.

Businesses may have multiple capital budgets based on the investment horizon under consideration (one to five years). Sound cash management allocates a portion of the operating cash flow to a reserve that will fund any future capital outlays.

Budgeting Process – focused on the operating budget

1. Articulate the assumptions

Responsibility for preparing the budget depends on the size of the operation. For smaller restaurants, the owner/operator would be in charge. In larger operations, top-level management defines the objectives and a bottom-up budgeting process involves the persons responsible for future performance. This is crucial, as the managers need a degree of ownership in the assigned goals to believe that they are achievable,

Accountants formalize the budget as a projected financial statement and a committee reviews and approve its final version. To be useful, a budget needs to be ambitious but realistic.

The budget relies on assumptions that should be clearly spelled out:

- General economic environment

- Expanding or receding economy
- Consumer confidence indicators
- Overall state of the food and beverage industry
- Food, beverage and labor costs in the marketplace
- Local environment/events affecting the operation such as:
 - Business openings or closings
 - Changes in local regulations
 - Road or construction work affecting the access to the operation
 - Labor issues – hiring or retention difficulties
- Competitive environment
 - Restaurant openings, closing or renovating
 - Competition pricing policies
 - SWOT (strengths/weaknesses/opportunities/threat) analysis
- Historical operating ratios and trends
 - Changes in customers' demand and taste
 - Revenue

- Cost of goods sold
- Labor (Payroll & benefits)
- Other expenses
- Other factors and constraints relevant to a specific operation

2. Quantify the assumptions

- **Revenue** targets are the first line items in the budget. Previous chapters in this textbook address revenue-forecasting methods in more detail. Forecasted sales determine the production goals and the resources required to achieve the performance levels dictated by the budget (food cost, labor, and other expenses). A revenue forecast results primarily from the anticipated average check (average dollars spent by guests on food and beverage) and guest count, though some operations have other sources of income, such as merchandise or room rental.
- Projecting **expenses** requires an analysis of the cost drivers and an understanding of the behavior of each line item.

Variable costs such as cost of goods sold (food & beverage cost) vary in direct proportion with changes in revenues. Items such as labor costs or energy are semi-variable or mixed as they only partially change as revenues do. (Eg. Only one General Manager, F&B Director or Marketing and Sales Manager is required per operation. Safety lights and power for the refrigeration units are permanently on irrespective of the changes in revenues.) Finally, costs such as equipment leases, insurance, rent, property taxes or mortgage payments are fixed over an extended period.

- **Cost of Sales,**
including food &
beverage costs, are
estimated based on a
percentage of the
corresponding
revenues.
 - Food
Revenue (\$)
X Food Cost
% = Food
Cost (\$)

- Beverage
Revenue (\$)
X Beverage
Cost % =
Beverage
Cost (\$)
- Other Sales
(\$)
X Other
sales % =
Cost of
Other Sales
(\$)

According to the
Operations Report
published by the
National Restaurant
Association (NRA),
the Cost of Sales
median value for full-
service restaurants
approximates 32% of
total sales.

- **Labor costs:**
 - The simplest
(and less
accurate)
way to
forecast labor
costs (payroll
+ benefits) is
to have

separate estimates for management and hourly personnel and multiply the total revenue figure by the historical cost percentage derived from prior year financial statements.

- A more accurate approach is to review the forecasted monthly (or weekly) sales figure and guest counts and apply an operating labor productivity standard such as “guests per front or back

of the house employee”, to estimate how many persons in each category are required.

According to the NRA study, the median value for payroll cost and benefits is approximately 34% of total sales

- **Prime Cost:** a review of reasonableness
 - Prime cost (Cost of Sales + Labor) is a controllable expense (see the previous chapter on “managing other expenses”) and managers have the power to adjust cost

items representing a targeted percentage of total sales within a short period. Accordingly, the prime cost is one of the most closely scrutinized profitability indicators.

- **Other Controllable Expenses**
 - Other controllable expenses include non-food or labor expenses that support daily operations. The main line items are:
 - Direct operating

rating
expenses

■ Music
&
Entertainment

■ Marketing

■ General
&
Administration

■ Repairs
&
Maintenance

nan
ce

Other controllable expenses are usually calculated by either using historical ratios of total sales or a growth rate percentage determined by the management team.

■ **Non-controllable expenses**

- Occupancy Costs
- Equipment lease
- Depreciation & Amortization
- Interest Expense
- Property and Sales Taxes

Non-controllable expenses are fixed and do not change in the short term, so projecting these expenses is usually

based on past history in the operation.

Refer to an earlier chapter in this book on “managing other expenses” for a detailed list of the costs classified as controllable and non-controllable expenses.

3. Budget vs. Actual: Monitor the variances

A budget variance is the difference between the budgeted expense or revenue and the actual amount. The variance is favorable when actual revenues exceed the budgeted revenues or when the actual expense is below the budgeted expenses.

Variances highlight potential problems that managers have to investigate. The following table illustrates some of the issues that may cause unfavorable revenue or cost variances.

Revenue Problems

Table 16.1 Revenue Problems

Potentially Manageable Reasons	Potentially Unmanageable Reasons
<ul style="list-style-type: none">◦ Revenue theft by employees◦ Ineffective marketing/sales tactics◦ Guest-relations issues◦ New and significant competition for the same guest market◦ Operating hours are longer than necessary; incurred labor costs are not offset by sufficient revenue	<ul style="list-style-type: none">◦ Significant layoffs within the community reducing the size of the guest market◦ Economic recession◦ Significant capital improvement/remodeling project leading to restaurant downtime◦ Street/other community improvement project yielding difficult/no access to property◦ Shortage (lack) of key menu ingredients which require popular items to be temporarily removed from the menu

Table 16.1 Revenue Problems

*Food Cost Problems***Table 16.2 Food Cost Problems**

Potentially Manageable Reasons	Potentially Unmanageable Reasons
<ul style="list-style-type: none"> ◦ Product theft ◦ Failure to effectively follow procedures for effective purchasing, storing, issuing, and producing food products ◦ Improper/inaccurate procedures to calculate actual food cost ◦ Ineffective selling techniques resulting in sales of higher food cost items ◦ Portion control issues ◦ Waste, such as overcooking, reduced yield percentages, cooking errors 	<ul style="list-style-type: none"> ◦ Significant increases in costs paid for food ◦ Shift of guest preferences to higher-food cost menu selections ◦ Storage losses (refrigerator/freezer breakdown requiring stored food to be destroyed) ◦ Shift to more convenience foods in efforts to reduce labor costs

4. **Formalize the budget** (see table below for an example operating budget) Forecast, forecast, forecast, then “crunch” the numbers to make the best projections and plan possible given past history, the current economic situation, and future goals.

BETH'S HOMESTYLE RESTAURANT

Budgeted Fiscal Year Ending December 31, 2020

Revenue

Statement Item	January	February	March	April	May	June	July
Covers Per Day	110	105	130	135	130	120	120
Number of Covers	3,410	3,255	4,030	4,185	4,030	3,720	3,720
Average Check	\$28.00	\$28.00	\$28.00	\$28.00	\$28.00	\$28.00	\$28.00
Food Revenue	\$87,686 (90.0%)	\$83,700 (90.0%)	\$103,629 (90.0%)	\$107,614 (90.0%)	\$103,629 (90.0%)	\$95,657 (90.0%)	\$95,657 (90.0%)
Beverage Revenue	\$7,794 (8.0%)	\$7,440 (8.0%)	\$9,211 (8.0%)	\$9,566 (8.0%)	\$9,211 (8.0%)	\$8,503 (8.0%)	\$8,503 (8.0%)
Food & Beverage Revenue Total	\$95,480 (98.0%)	\$91,140 (98.0%)	\$112,840 (98.0%)	\$117,180 (98.0%)	\$112,840 (98.0%)	\$104,160 (98.0%)	\$104,160 (98.0%)
Other Sales Revenue	\$1,949 (2.0%)	\$1,860 (2.0%)	\$2,303 (2.0%)	\$2,391 (2.0%)	\$2,303 (2.0%)	\$2,126 (2.0%)	\$2,126 (2.0%)
Total Revenue	\$97,429 (100.0%)	\$93,000 (100.0%)	\$115,143 (100.0%)	\$119,571 (100.0%)	\$115,143 (100.0%)	\$106,286 (100.0%)	\$106,286 (100.0%)

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BETH'S HOMESTYLE RESTAURANT (COST OF
SALES)

Statement Item	January	February	March	April	May	June	July
Cost of Food Sold	\$24,114 (27.5%)	\$23,018 (27.5%)	\$28,498 (27.5%)	\$29,592 (27.5%)	\$28,498 (27.5%)	\$26,306 (27.5%)	\$26,306 (27.5%)
Cost of Beverages Sold	\$1,208 (15.5%)	\$1,153 (15.5%)	\$1,428 (15.5%)	\$1,483 (15.5%)	\$1,428 (15.5%)	\$1,318 (15.5%)	\$1,318 (15.5%)
Total Food & Beverage Cost of Sales	\$25,322 (26.0%)	\$24,171 (26.0%)	\$29,926 (26.0%)	\$31,077 (26.0%)	\$29,296 (26.0%)	\$27,624 (26.0%)	\$27,624 (26.0%)
Cost of Sales (Other)	\$877 (45.0%)	\$837 (45.0%)	\$1,036 (45.0%)	\$1,076 (45.0%)	\$1,036 (45.0%)	\$957 (45.0%)	\$957 (45.0%)
Total Cost of Sales	\$26,199 (26.9%)	\$25,008 (26.9%)	\$30,962 (26.9%)	\$32,153 (26.9%)	\$30,962 (26.9%)	\$28,580 (26.9%)	\$28,580 (26.9%)

**BETH'S HOMESTYLE RESTAURANT (PAYROLL
AND EMPLOYEE BENEFIT COSTS)**

Statement Item	January	February	March	April	May	June	July
Salaries and Wages (Management)	\$8,769 (9.0%)	\$8,769 (9.4%)	\$8,769 (7.6%)	\$8,769 (7.3%)	\$8,769 (7.6%)	\$8,769 (8.3%)	\$8,769 (8.3%)
Salaries and Wages (Hourly Personnel)	\$20,460 (22.0%)	\$20,460 (21.0%)	\$20,460 (17.8%)	\$20,460 (17.1%)	\$20,460 (17.8%)	\$20,460 (19.3%)	\$20,460 (19.3%)
Salaries and Wages Total Cost	\$29,229 (30.0%)	\$29,229 (31.4%)	\$29,229 (25.4%)	\$29,229 (24.4%)	\$29,229 (25.4%)	\$29,229 (27.5%)	\$29,229 (27.5%)
Employee Benefits	\$2,338 (2.4%)	\$2,338 (2.5%)	\$2,338 (2.0%)	\$2,338 (2.0%)	\$2,338 (2.0%)	\$2,338 (2.2%)	\$2,338 (2.2%)
Payroll and Employee Benefits Total Cost	\$31,567 (32.4%)	\$31,567 (33.9%)	\$31,567 (27.4%)	\$31,567 (26.4%)	\$31,567 (27.4%)	\$31,567 (29.7%)	\$31,567 (29.7%)
Prime Cost	\$57,765 (59.3%)	\$56,575 (60.8%)	\$62,529 (54.3%)	\$63,720 (53.3%)	\$62,529 (54.3%)	\$60,147 (56.6%)	\$60,147 (56.6%)
Gross Margin	\$39,663 (40.7%)	\$36,425 (39.2%)	\$52,614 (45.7%)	\$55,852 (46.7%)	\$52,614 (45.7%)	\$46,139 (43.3%)	\$46,139 (43.4%)

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BETH'S HOMESTYLE RESTAURANT (OTHER CONTROLLABLE EXPENSES STATEMENTS)

Statement Item	January	February	March	April	May	June	July
Music Entertainment Cost	\$779 (0.8%)	\$779 (0.8%)	\$779 (0.7%)	\$779 (0.7%)	\$779 (0.7%)	\$779 (0.7%)	\$779 (0.7%)
Marketing Cost	\$3,410 (3.5%)	\$3,255 (3.5%)	\$4030 (3.5%)	\$4,185 (3.5%)	\$4,030 (3.5%)	\$3,720 (3.5%)	\$3,720 (3.5%)
Utilities Cost	\$2,436 (2.5%)	\$2,325 (2.5%)	\$2,879 (2.5%)	\$2,989 (2.5%)	\$2,879 (2.5%)	\$2,657 (2.5%)	\$2,657 (2.5%)
General and Admission Cost	\$4,384 (4.5%)	\$4,185 (4.5%)	\$5,181 (4.5%)	\$5,381 (4.5%)	\$5,181 (4.5%)	\$4,783 (4.5%)	\$4,783 (4.5%)
Repairs and Maintenance Cost	\$1,267 (1.3%)	\$1,209 (1.3%)	\$1,497 (1.3%)	\$1,554 (1.3%)	\$1,497 (1.3%)	\$1,382 (1.3%)	\$1,382 (1.3%)
Other Expenses Total Cost	\$12,276 (12.6%)	\$11,753 (12.6%)	\$14,366 (12.5%)	\$14,889 (12.5%)	\$14,366 (12.5%)	\$13,321 (12.5%)	\$13,321 (12.5%)
Controllable Profit	\$27,387 (28.1%)	\$24,672 (26.5%)	\$38,248 (33.2%)	\$40,963 (34.3%)	\$38,248 (33.2%)	\$32,817 (30.9%)	\$32,817 (30.9%)

SUMMARY: BUDGETS AND THE BUDGETING PROCESS

Though this chapter on budgeting is toward the end of this book, it could also be one of the first. Developing the budget is critical for planning for a profitable food service operation. An effective food service manager also recognizes that a budget is a plan or roadmap, but not “set in stone.” The budget requires analysis on a regular basis to be sure that either things are going as planned or that adjustments are made as necessary throughout the budget period to achieve the profit goals of the operation.

REVIEW QUESTIONS

Short Answer

1. What are some of the purposes of a budget for a food service operation?
2. What is the difference between an operating budget, a cash budget, and a capital budget?
3. What are some types of assumptions that a food service budget planner has to consider and articulate?
4. What are some of the different expense categories in a food service operation budget?
5. If there are unfavorable variances in a food service operation budget, what are some examples of manageable problems that could be better controlled to create a more favorable outcome?

Matching



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Section 6 - Guest Services

Chapter 17 - Managing Guest Services

This chapter is remixed from [Basic Kitchen and Food Service Management by The BC Cook Articulation Committee](#).

Chapter Outline:

- Introduction to guest services
- Types of service
- The guest experience
- Preparing for successful service
- Providing guest service
- Creating exceptional service
- Customer Relationship Management (CRM)
- Service Recovery
- Guest service resources & technological support
- Remarkable service

Learning Objectives

- Describe the types and value of service in the food and beverage industry
- Describe the service sequence in full-service dining
- Differentiate between planning and providing guest services in food service establishments
- Identify tools utilized in providing guest service
- Identify “rules” and unique standards associated with different levels of dining experiences
- Relate the importance of service recovery and guest satisfaction to repeat business and customer loyalty
- Identify important steps in a service recovery model for a foodservice operation

Key Terms:

- Table Service
- Family-style Service
- Buffet Service
- Cafeteria Service

- Quick Service
- Standard Operating Procedures
- Touchpoints
- Moment of Truth
- Customer Relationship Management (CRM)
- Customer lifetime value
- Loyalty programs
- Service recovery
- Suggestive selling
- Gratuity
- Kiosk
- Point of Sale (POS) terminals

Introduction to Guest Services

A chief goal for any establishment, particularly hospitality providers, is providing a pleasant experience for guests. To exceed expectations is not just a goal, but also a state of mind. In the food and beverage industry, providing exceptional services requires teamwork, training, standard operating procedures, technology and most importantly the right attitude. Guests experience has the potential to affect not only that guest, but their friends, friends of their friends, and so on. The service provided is an imprint of the food service establishment and can leave a lasting impression on each and every guest they come in contact with.

Types of Service

The style of meal service chosen by a food service establishment impacts the operation's ability to make meaningful impressions on customers. There are many different styles of delivery for food service and it is ideal that an operation chooses the style that best meets their guest expectations. Types of service include table, buffet, cafeteria as well as other services including quick service and deli service.

Table service is traditionally provided to seated guests and is common with fine dining, casual dining, diners, bars, and pubs as well as many other establishments. **Table service** traditionally involves servers responsible for providing meals, maintaining guest experiences, and clearing tables at the conclusion of a meal. Table service can be organized into four categories including plate, family-style, cart, and platter.

Plate Service

Plate service is the most common service style and involves guest orders being taken at their table. The server then provides information to production staff. Items are prepared and delivered to the table by servers who also are responsible for maintaining tables during the guest's dining experience. Plate service provides ample time for service staff to build a relationship with guests.

Family-style Service

Family-style service is increasingly becoming more common in dining establishments, particularly farm to table restaurants. **Family-style service** involves shared dishes

served and distributed amongst a table of diners. Servers deliver ordered food to the table and guests are able to pass the items amongst themselves based on their desired choice. Family-style service provides an environment more closely related to dinner service at home.

Cart Service

Cart service is more commonly associated with fine dining experiences and incorporates a portion of tableside preparation. Although guests are seated and order as typically utilized with most table service, meals are delivered via cart and are commonly finished in the presence of the guest. This may include the selection of a specific cut of meat, the slicing of cooked meat, or the addition of a sauce to be served with a dish. Examples of cart service are common in French –style restaurants and can be commonly observed in Mexican restaurants where guacamole is made tableside. The restaurant *Rosa Mexicana*, with locations expanding from Los Angeles to New York, is known for its signature guacamole en Molcajete.

Platter Service

Platter service is another form of table service with similarities to cart service. Platter service involves food being arranged specifically on a platter and brought out to tables for guests viewing. After unveiling food, servers are responsible for serving portions onto guest plates. Platter service is commonly associated with banquet service.

Buffet Service

Buffet service involves food arranged and held under appropriate temperature standards while guests willingly come and choose as they prefer to select food items. Buffet service differs significantly from table service in the manner of food selection and service. Although guests are typically seated and utilize servers for ordering and other necessities, guests freely choose and arrange meals on plates. Buffet services typically contain carving stations for select items. Buffet services are common for banquets and are commonly found in hotels as well as full-service restaurants. Some operations utilize buffet service specifically for brunch on weekends while others utilize a buffet service daily.

Cafeteria Service

Cafeteria service or a-la-carte service is a common service style for lunch and operations involving many establishments under one roof. Academic facilities, shopping malls, and corporate environments often provide this service as a means of providing variety with centralized resources. Commonly cafeteria service has one entry and one exit point. Guests are presented with options such as a salad bar, soup station, pizza area, hot and cold sandwich areas, etc. Guests have the option to choose items based on their preferences and are expected to pay at the exit. Cafeteria services are typically designed in a scrambled layout, which involves stations spread out and no direct approach to selection. However, some cafeteria service outlets are designed with a straight-line approach where guests follow a line through all items until the end of the counter payment point.

As mentioned previously, many other services or combination options exist including quick service and deli service. **Quick service** is a style of service that allows seating, drive-through, and take-out options and provides guests the opportunity to order food at a counter and choose a dining location of their choice. Employee and customer interaction typically only occurs at the point of order in these service styles, which is very similar to cafeteria service.

The style of service selected by a dining establishment provides an indication of the service experience offered. The characteristics associated with table service dining varies greatly from the dining experience associated with cafeteria service. Table service provides more opportunities for engaging with guests and requires servers with soft skills and a dedicated level of customer service training.

The Guest Experience

One of the primary goals of a restaurant is to provide guests with an enjoyable dining experience. This experience extends beyond the food served and the price associated. Restaurants strive to provide an atmosphere that is both welcoming and comforting. Restaurateur Danny Meyer is quoted in his book, *Setting the Table* as stating “food is secondary to something that matters even more. In the end, what’s most meaningful is creating positive, uplifting outcomes for human experiences and human relationships.” Meyer, who is the CEO of Union Square Hospitality has created an entire organization of restaurants whose primary goal is providing the best possible service. A visit to one of his restaurants exemplifies what the guest experience should

include. The success of his restaurants is a testament to the importance of the guest experience.

Preparing for Successful Service

When creating the ideal guest experience, it starts with planning and organizing your establishment and the procedures that are followed. From an organizational standpoint, a restaurant should establish **standard operating procedures**, which are procedures designed to allow businesses to create consistency in workflows and job performance. Training of staff is another essential element of high-quality service. Staff should be prepared to understand guest concerns and should be prepared to embody an attitude that “the guest is always right.” Servers should be knowledgeable on menu offerings as well as service expectations. Servers must be trained to be problem solvers and empowered with the ability to provide exceptional recovery. The investment in guest service training has the ability to provide benefits for not only the guest but also management and other personnel.

Properly trained staff have the ability to improve teamwork, which helps create a “we” versus “I” mentality. The significance of teamwork is a necessity for providing quality guest service. A team approach makes the guest experience the responsibility of all staff, not just the server. Finally, among all other steps, it is essential that operations evaluate the unique needs of their own establishment. The type of service, the number of reservations, the experience of servers, the variety of menu amongst other things are all key criteria when planning an approach to providing outstanding guest service.

Providing Guest Service

From the onset of inquiring about a dining establishment, a guest often has an expectation of service provided by an establishment. Guest experience is a combination of touchpoints that occur before, during, and after meal service. A **touchpoint** is defined as any way a [consumer](#) can interact with a [business](#), whether it be person-to-person, through a [website](#), an app or any form of communication. In the restaurant business, from the moment a guest communicates with a member of a restaurant, they have created an impression about the location. However, first impressions are often implied from previous guest reviews or they can be a product of second-hand feedback from previous diners.

Guests create opinions upon arrival onto the property and continue as a guest is greeted by a host, maître d', receptionist or another employee responsible for welcoming guests. Welcoming employees should be knowledgeable and sensitive to guests' requests, needs, and desires. Guests may require accommodations for disabilities or prefer a table in a non-smoking section. Guests have many preferences and the welcoming provides an opportunity to learn about a guest before they are seated.

When discussing the service sequence associated with restaurant guests, it is important to note that there is not an industry-specific standard to follow. To simplify the process we will look solely at a table service dining experience. Typically, the service sequence begins once the guests are seated. The sequence may look similar to the following:

- Welcoming the guests – Create a comfortable environment

- Serve or pour water – Pour cleanly and confirm if any accommodations or special requests exist
- Present the menu and beverage list (if alcohol is offered) – Provide any specials and ensure all guests have appropriate menus
- Take the beverage order – Be specific on how guests drinks should be served
- Serve beverages – Beverages typically delivered from the right of the guest with the right hand.
- Ask guests if they would like to order appetizers – Provides an opportunity to ask if any questions on the menu and initiate the ordering process. Some guests may wish to order at this time.
- Serve the appetizers – Food is generally served from the left with the server's left hand.
- Take the food order – Be specific on any special requests. Answer any questions guests may have on items
- Remove appetizer dishes – Creates room for the next course and provides opportunities to create a dialogue with guests.
- Serve salad and bread – Salads should be chilled and bread at room temperature unless specified otherwise
- Remove salad dishes – If guests are done. Opportunity to see if guests need anything prior to the main entrée arriving.
- Serve the entrée dishes – Served as noted or with

the main item closest to the guest. If there are side dishes, they should be placed on the side of the item.

- Confirm that all items are prepared correctly – Are items accurate, temperatures correct, any necessary condiments, etc.
- Clear the table – Ensure guests are satisfied and provide to go service opportunity
- Offer dessert and after dinner drink options (if available) – Provide suggestions
- Take the dessert order – Ask about beverages
- Serve the dessert and after-dinner beverages – Confirm guests do not need anything else.
- Present the guest check – Efficiency, do not let the guest wait.

This is a sample of a service flow from welcome to departure and presents a representation of the various touchpoints associated with the guest experience. Following this sequence will help an establishment meet the core needs of its guests. Often establishments have unique standards and operations they follow to exceed expectations and create memorable experiences for diners. When providing service, a good standard to follow is the golden rule “treat others as you would like to be treated.”

In addition to working through this type of service sequence, effective servers can also be a key factor in increasing the average check and overall revenue for the foodservice operation by using **suggestive selling** or “upselling.” Servers are often able to recommend additional

purchases, beverages, etc., that increase the amount of money spent in the operation. This practice can benefit both the overall operation and potentially the gratuity or tip left by the customer for excellent service.

Providing Exceptional Service

Exceptional service includes being prompt, being friendly, being available, and going above and beyond for the customer. Danny Meyer states “Business, like life, is all about how you make people feel. It’s that simple and it’s that hard.” This is notable in the restaurant industry as the recognition of restaurants relies heavily on the ability to provide exceptional service throughout the guest experience. While food quality, food presentation, restaurant décor are incredibly important, it is the experience diners have that counts. According to entrepreneur Chris Hurn, “Exemplary customer service distinguishes your brand, builds repeat business, combats price competition, and even improves employee morale.”

When we think about the components of exceptional service in restaurants, we often think of the balance of communication and genuine attention to diners. Exceptional service is not judged on one moment, but is the product of many encounters. Exceptional service can be determined by the attention you provide at the onset of a meal to how you handle difficult situations. In his book, *The Heart of Hospitality*, Micah Solomon compiled a list of five customer service lessons from successful business people and companies.

1. Richard Branson – Scripted customer service is the ultimate turnoff for today’s customer service.

2. Danny Meyer – Customers crave recognition and acknowledgment.

3. The Ritz Carlton – It takes empowered employees to deliver great service.

4. Tom Colicchio – Great customer service depends on trait-based hiring.

5. Patrick O'Connell – Build a culture of “yes.”

There are just a few ideas of providing exceptional service from influential entities in the world of hospitality, but they serve as a reminder that exceptional service is about employees and customer interaction. Tips such as the ones mentioned help create loyalty in the restaurant industry. Repeat business is more about good customer service experience than a quality meal.

To exceed expectations in the restaurant industry requires a mix of the following fundamental service focuses:

- **First impressions matter** – From how you greet a customer to how you listen to their needs is essential to creating an appropriate dining experience. Addressing guests in a courteous manner – sets the tone.
- **Be considerate of a customer's time** – A waiting customer is an unhappy customer. A waiting, uninformed customer is a customer who will not return. If service is slow, be forthcoming and informative.
- **Being accessible** – Without specifically stopping by a table, your sheer presence near a table can have a meaningful impact. Your visibility allows the customer to feel they are having a better

experience, because if they need something, you are available.

- **Problem-solving** – Problems often arise and part of exceptional service is the ability to empathize, apologize, and offer solutions to service failures. Acting immediately is essential when a problem arises as it prevents the ability of a problem to escalate. Lastly, the knowledge of knowing when to involve your supervisor is critical.
- **Maintain professionalism**– Scenarios often can become challenging and you must always remain dedicated to representing the company. Your appearance and your attire matter.
- **Show appreciation** – Guests choose to dine at your restaurant, but also choose to return. Show appreciation for their decision to dine with you. A simple gesture of kindness or a genuine visit by management can accomplish this at a minimal cost.
- **Effective Communication** – Utilizing proper tone, listening to requests, providing accurate information are all essential elements in communicating effectively. The message is often not conveyed by words, but by actions. A simple smile or thank you has the ability to create a lifetime customer.

Exceptional service is not standard but is the product of multiple touchpoints throughout the experience. It is as much as about the smile when you are greeted when entering the decisive moment that occurs when a customer's experience has not gone as planned. The ability to be tactful in handling

customers is the difference between service and excellent service.

NOTE: This next section is from BC OER textbook:
URL: <https://opentextbc.ca/introtourism/chapter/chapter-9-customer-service/>

Customer Relationship Management

Most hospitality businesses today also have some sort of form a **customer relationship management (CRM)** strategy for their organization. CRMs are tools used by businesses to select customers and maintain relationships with them to increase their lifetime value to the business.

There are a number of points in time where this relationship is maintained. For example:

- The first time potential guests visit a website and leave their email address to receive more information
- The moment a reservation is made and the company captures their personal details
- The in-person service encounters from the front desk to the parking lot
- Welcome notes, personalized menus, friendly hellos, and other touches throughout the interaction
- Background messages including clean facilities and equipment in good repair, pleasant decor, and ambiance (flowers, etc.)
- Follow-up communications like a newsletter

- Further interactions on social media

All of these touchpoints are opportunities to maintain strong relationships with customers and to increase the likelihood of positive word of mouth sharing.

Let's take a closer look at one tool that tourism and hospitality businesses are increasingly using as part of their CRM strategies: rewarding customer loyalty.

With competition between tourism destinations and businesses continuing to grow, organizations are increasingly focusing on retaining existing customers, which is often less expensive than attracting new ones. This focus forces tourism businesses to look at the customer relationship over the long term, or the **customer lifetime value (CLV)** cycle, rather than at single transactions only.

It has been proven that it is much less expensive for a company to retain an existing customer than acquire a new one (Beaujean, Davidson & Madge, 2006). Ultimately, successful organizations will strive to build a base of loyal customers who will provide repeat business and may influence other potential customers. Building positive relationships with loyal customers requires planning and diligence for all customer touchpoints. This may include (Lovelock & Wirtz, 2007):

- Managing service encounters: training staff to provide personal service to customers
- Providing customer incentives: inducing customers to frequent the business
- Providing special service options: offering enhanced services or extra offerings to loyal customers

- Developing pricing strategies to encourage long-term use: offering repeat customers special prices or rates
- Maintaining a customer database: keeping an up-to-date set of records on customer purchase history, preferences, demographics, and so on.
- Communicating with customers: reaching individual customers through direct or specialized media, using non-mass media approaches

Loyalty programs pull together several of these elements to help a business identify, maintain contact with, and reward frequent customers.

Examples of Outstanding Service

If one uses the definition of quality in service as “meeting or exceeding customer expectations” (Kapiki, 2012), then the following examples certainly fit the description. These embody a concept known as a **moment of truth** (Beaujean, Davidson & Madge, 2006) when a customer’s interaction with a front-line employee makes a critical difference in his or her perception of that company or destination. The characteristics of employees that are best able to create these moments include self-empowerment and self-regulation, a positive outlook, awareness of their feelings and the feelings of others, and the ability to curb fear and anxiety while being able to access a desire to help others.

Service Recovery

If a business fails to meet customer expectations, there’s a risk

the customer will tell others about it, often through social media networks. An on-location problem that turns into an online complaint, going from private to public, can become far more damaging to a business than the original issue. To avoid any problem from escalating, organizations and staff must work hard to resolve issues before the customer walks out the door — or pulls out a smartphone to make an online posting.

Of course, it's not always possible to resolve issues on the spot. A customer's expectations may go beyond the service the business is able to provide, or staff might not be authorized by management to provide the means necessary to resolve the complaint. In these cases, staff must still step up as service professionals, realizing that the actions they take when faced with a complaint can have a significant impact.

Online complaints highlight this point; reviewers are often more upset about how a problem was handled than about the problem itself. As well, potential guests who read online complaints are looking for reassurance that the same thing won't happen to them. If they don't find it, they may dismiss the business as an option and move on. How a business handles complaints, face-to-face and online, is critical to ensuring successful recovery from service failures.

Service recovery occurs when a customer service professional takes action that results in the customer being satisfied after a service failure has occurred. Often service failures are not the fault of front-line staff, and at times, may not even be the fault of the business. Failure may be the result of an error made by another employee, by the guest him- or herself, or by a technical error. Regardless of where the problem originated, when customers bring it to the attention of the staff, they have certain expectations for resolution.

Disappointed customers often want:

- An empathetic ear. Sometimes they simply want to vent. They want to know that the employee or manager is listening and cares.
- An apology. In some cases, a sincere apology is enough.
- A solution. Typically customers bring issues to the attention of staff because they want them fixed.
- Compensation. Upset customers are looking for compensation, but not always.
- Follow-up. For some people, it's important to know that their concerns are brought to the attention of management and are fixed for future customers.
- Reassurance. Customers want to know they're in good hands.

Skilled service recovery is especially important in the age of social media. Customers who are active on social networks are likely to be equally vocal about their satisfaction with service recovery when a problem is expertly handled as they are with their displeasure when they are disappointed with service (WorldHost Training Services, 2013).

While service recovery is a critical skill, all tourism and hospitality professionals should approach each encounter with the goal of providing remarkable service.

Guest Services Resources & Technological Support

In the age of technology, social media, and advanced automated systems customer interaction is closer than ever before. Restaurants have the ability to reach customers without physical interaction and it is important that restaurants are savvy in their use of technology. A balance of professionalism, timeliness, and creativity can create interest and future business. Inside the walls of a restaurant, technology has the ability to automate the guest experience and create a more efficient and effective service.

Social Media

The impact of social media on the service process is both an opportunity and a challenge for the industry. On one hand, online platforms such as Yelp and Twitter create readily available information to allow customers to find information on your restaurant. On the other hand, they create challenging environments where restaurants are unable to control their public presence. The freedom to create and provide reviews helps provide customer expectations but creates more responsibility for managers. Online presence and online reviews can single-handedly influence a customer's choice of where they will dine.

Technology

Within the operation, restaurants use a variety of technological services to impact their guest experience. Technology includes point of sale terminals, precheck terminals, self-service order entry kiosks, online ordering, etc. The usage of technology within a restaurant has the ability

to store information in a database to create more effective, personalized service in the future. It has the potential to automate service and remove human error.

The majority of businesses utilize **Point of Sale Terminals**, which are the basic hardware components of food service computer systems. Point of sale terminals allow a safe system to input and output orders, reconcile receipts, and compile data associated with sales. Terminals can be located at various locations throughout the restaurant and can be associated with payment terminals to create a cash control system. Terminals can be a touchscreen, keyboard, handheld, or magnetic strip operated.

Remarkable Service

We've discussed the basic ingredients of meeting customer expectations. However, for a business to be successful, it's important to not only meet but exceed expectations. Remarkable service doesn't necessarily require a great deal of cost, time, or resources. Often it's the little details, the special attention from employees and the personalized touches that people remember most. There is no formula for remarkable service. It will depend on the type of customers, the nature of their visit, and the things they value. Finding ways to provide remarkable service requires support from management, keen observation skills, and a willingness to "go the extra mile" (Destination BC, 2013).

Providing good service is about understanding, recognizing, and anticipating the needs of customers and working hard to meet or exceed them. The core service essentials are also simple: make eye contact, smile, greet

warmly, and use the customer's name. These simple actions tell customers that your organization values them and is eager to help. In order to exceed expectations, your organization must be on the alert for opportunities to provide remarkable service (WorldHost Training Services, 2013).

REVIEW QUESTIONS

Short Answer

1. Identify several ways food service operations can maintain a long-term relationship with their customers.
2. Think about the loyalty programs you belong to. Choose one and try to identify why you joined this program, what benefits you receive from the program and what benefits you think the company might get from having you as a member of the program.
3. Identify are some of the key components of remarkable guest service.
4. Explain why repeat business is so important to food service operations.
5. Describe some of the important steps in a guest service recovery model 6. Identify at least two challenges and two advantages of using social media as a part of a food service operation's public presence.

Matching



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Multiple Choice



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Glossary

Section 1, Chapter 1

Casual restaurants – restaurant that serves moderately-priced food in a casual atmosphere.

Casual upscale restaurants – Similarly to casual dining, they typically feature a dining room section and a lounge section with multiple screens. They are typically found downtown or in shopping districts and attract young professionals and millennial's with an urban ambiance. Premium casual restaurants carry a wide range of menu options including burgers, steaks, seafood, pizza, pasta and Asian foods.

Commercial food service – Commercial food service, sometimes referred to as market-oriented food service, is the largest and most recognizable form of food service operation in the world, accounting for approximately 77% of food expenditures outside of people's homes. You'll recognize commercial food service operations as you drive around your town and down the highway, with large, fluorescent signs advertising hamburgers, pizza, and sub sandwiches.

Family restaurants – An eating establishment that serves

relatively simple food at reasonable prices, and welcomes children as well as adults.

Food trucks/street food – is ready-to-eat food or drink sold by a hawker, or vendor, in a street or other public place, such as at a market or fair. It is often sold from a portable food booth, food cart, or food truck and meant for immediate consumption.

Hyper-local sourcing –is food grown, processed, and consumed at the neighborhood level of a community.

Non-commercial food service –found in corporations, healthcare facilities, schools, and military or government installations.

Quick casual restaurants –found primarily in the United States, does not offer full table service, but advertises higher quality food than fast-food restaurants, with fewer frozen or processed ingredients. It is an intermediate concept between fast food and casual dining, and usually priced accordingly.

Quick service restaurants – is a specific type of restaurant that serves fast food cuisine and has minimal table service. The food served in fast-food restaurants is typically part of a “meat-sweet diet”, offered from a limited menu, cooked in bulk in advance and kept hot, finished and packaged to order, and usually available for take away, though seating may be provided.

Theme restaurants – restaurants in which the idea for the restaurant takes priority over everything else. It influences the architecture, food, music, and overall “feel” of the restaurant. The food usually takes a backseat to the presentation of the theme.

Upscale/fine dining restaurants – also referred to as white-tablecloth restaurants, are typically higher-end and

fancier restaurants. As opposed to casual eateries, cafes or family-style restaurants, fine dining caters to an upscale clientele and provides the highest quality of food.

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Section 1, Chapter 2

Revenue – The income returned by an investment

Upselling – To persuade a customer to buy more than he or she had intended.

Loyalty programs – a structured and long-term marketing effort that provides incentives to repeat customers who demonstrate **loyal** buying behavior.

Expense -A spending or consuming, often a disbursement of funds.

Controllable expenses – variable costs such as raw materials, labor, and other overheads deemed controllable by management.

Non-controllable expenses -An expense that cannot be unilaterally changed by an individual, department or business.

Profit -Total income or cash flow minus expenditures.

Profit and Loss Statement –a financial report that provides a summary of a company's revenues, expenses, and profits/losses over a period of.

Budget – The amount of money or resources earmarked for a particular institution, activity or time-frame.

Cost percentage – $\text{Beginning Inventory} + \text{Purchases} - \text{Ending Inventory} / \text{Food Sales}$

Ideal expense – revenue minus profit

Performance to budget – budgeted expense or revenue

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Section 1, Chapter 3

Sales history – Summarized data of a company's revenue from the sales of a product (goods or services) for a given time period (months or years).

Customer count or covers – The number of customer checkout transactions for a day or week.

Guest check average – a calculation of the average transaction amount.

Food cost percent – cost of goods sold / total sales for a certain time period.

Popularity index – the ratio of portion sales for a given menu item to total portion sales for all menu items.

Beverage cost percent – calculated by adding up the cost of the product used and dividing it by the cost of the product sold.

Labor Cost percent – labor cost divided by total operating cost.

Over/Under-pouring – using less or more alcohol than a drink recipe specifies.

Emergency stock – quantity of a material, parts, or supplies that must be kept on hand at all times to provide for an effective response to an emergency.

Table turns – the number of parties served divided by the number of tables.

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Section 2, Chapter 4

Dietary Guidelines for Americans – government advice that emphasizes the importance of creating a healthy eating pattern to maintain health and reduce the risk of disease.

Cycle menu – a set of menus that repeat over a given amount of time mostly used for non-commercial food-service operations.

Daily (or single-use) menu – menus that are changed on a daily basis or used as a one-time-only event.

Static menu – a menu that stays the same every day.

Theme menu – a menu for a specific type of cuisine or dining experience that is enhanced by concept, decor, architecture and other techniques.

Sociocultural factors – customs, lifestyles, and values that characterize a society.

Aesthetics – the study or philosophy of beauty.

Cross-utilization – using an ingredient, sauce, or condiment that is usually used for one or two specific dishes for another dish or two where, perhaps, they are not expected, or are not usually used.

“Truth in menu” – creating a menu that doesn’t misrepresent your cuisine or misleads the public in terms of quantity, quality, price, brand names, production identification, points of origin, merchandising terms, food preparation, verbal and visual presentation, and dietary & nutritional concerns

Menu labeling – government-required disclosure of certain nutrition information for standard menu items in certain restaurants and retail food establishments.

Menu psychology – creating a menu to maximize the restaurant’s profitability by subconsciously encouraging customers to buy what you want them to buy, and discouraging purchase of items you don’t want them to buy.

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Section 2, Chapter 5

HACCP – Hazard Analysis Critical Control Points – a point or procedure in a specific FOOD system where the loss of control may result in an unacceptable health RISK.

TCS foods (time temperature control for safety) – a FOOD that requires time/temperature control for safety (TCS) to limit pathogenic microorganism growth or toxin formation.

Critical control points (CCPs) – a point or procedure in a specific FOOD system where the loss of control may result in an unacceptable health RISK.

Critical limits – the maximum or minimum values to which a physical, biological, or chemical parameter must be

controlled at a CRITICAL CONTROL POINT to minimize the RISK that the identified FOOD safety HAZARD may occur.

Section 2, Chapter 7

Portion cost – the cost of the ingredients (and sometimes labor) found in a standard recipe divided by the number of portions produced by the recipe.

As purchased

Edible portion – Used in food composition tables to indicate that the data refer to the part of the ingredient that is usually eaten—e.g. excluding skin or pips of fruit and vegetables, bones in meat and fish.

Yield – how much you will have of a finished or processed product; for example, a tomato soup recipe may yield 4 gallons or 15 L, and a muffin recipe may yield 24 muffins.

Yield percentage – the edible portion expressed as a percent of the entire ingredient i.e. piece of fruit, portion of meat, etc.

Waste – the inedible portion of an ingredient, e.g..g. the skin or pips of fruit and vegetables, bones in meat and fish.

Waste percentage – waste expressed as a percent of the entire ingredient

Edible portion cost (“true cost”) – the price per pound of the edible portion of an ingredient, after the waste is removed.

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Section 2, Chapter 8

Price/value relationship – the price of an item compared to its perceived value, e.g. a meal versus a meal with live music.

Ambiance – the character and atmosphere of a place.

Menu mix – planning a menu by considering factors such as cross-utilization of products, balance, variety, customer preferences and trends, as well as management factors.

Blended pricing – a menu where the low and high food cost items work together to help you reach your target food cost.

Food cost percent – cost of goods sold / total sales for a certain time period.

Mark up factor – the amount you add to the cost of your product to determine the selling price.

Contribution margin – the selling price per unit minus the variable cost per unit.

Plate cost – found by dividing the total food cost by the number of customers served.

Bundling – combining a group of menu items, typically an entrée, side and beverage, and selling the items together for one price, sometimes called a combo meal.

Coupons – a small piece of paper that allows one to get a service or product for free or at a lower price, intended

to increase the number of customers, thus increasing overall revenue.

Value pricing – reducing the price of a few popular menu items to encourage customers to visit the operation for these great values, thus increasing the total number of customers for the operation.

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Section 2, Chapter 9

Menu analysis – used to determine how often each item on the menu is sold.

Contribution margin – the selling price per unit minus the variable cost per unit.

Profitability – affording profits: yielding advantageous returns or results

Popularity – the quality or state of being popular

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Section 3, Chapter 10

Inventory – an itemized list of current assets.

Receiving – acquiring incoming inventory.

Invoice – an itemized list of the goods or products delivered to a food preparation premise.

Requisition – an internal form used to track inventory when it leaves the storeroom.

Perpetual inventory – a running balance of what is on hand.

Physical inventory – an inventory that requires all items in storage to be counted periodically at least monthly.

Par stock – the quantity of a product that should ideally be on hand at a given time.

Inventory price extension – the values (the unit cost and total value of each item in storage) of the inventory items added together to give the total dollar value of the inventory.

Point-of-Sale (POS) system – the place where a customer executes the payment for goods or services. POS terminals and systems are used to process card payments and add sales tax.

Holding cost – the costs of storing the material (electricity, insurance, security, data processing, handling), financial costs that reflect the money that is tied up in inventory and costs related to deterioration and damage.

Ordering cost – costs associated with ordering and receiving inventory. These costs consist of salaries of the

purchasing and accounting departments, wages in the receiving area, and transportation.

Shortage cost – occurs when the demand exceeds the supply.

Inventory turnover – the number of times your restaurant sold its total average inventory during a period of time.

Procurement – the act of obtaining or getting possession of an item

Purchasing – the determination of needs of the restaurant and the placement of the orders with suppliers.

Buying – the decisions regarding where to place orders on the basis of quality, price, and service. The foodservice manager or director usually assumes responsibility for deciding on the suppliers from which to purchase food and supplies.

Ordering – the determination of the quality and quantity of food and supplies required to satisfy menu requirements, at a price within budgetary guidelines. Ordering is usually a supervisory function, and a foodservice supervisor is often given responsibility for ordering.

Cherry-picking – the practice of buying each item from whichever supplier has the lowest cost, no matter the size of the overall order.

Vendor – a company that supplies inventory for your restaurant, both ingredients and equipment.

Distributor – someone that markets a commodity. A merchant middleman who sells chiefly to retailers, other merchants, or industrial, institutional, and commercial users mainly for resale or business use

Broker – one who acts as an intermediary: such as an

agent who negotiates contracts of purchase and sale of commodities.

Manufacturer – a company that makes a product from raw materials by hand or by machinery.

Specifications – a detailed precise list of something which can contain type, grade, amount/weight/count, thickness, age, packaging, condition, etc.

Contract Buying – a hired managed service that orders inventory for a restaurant.

Par levels – the amount you should have on hand to get through to the next order of inventory.

Amount on hand – current amount of goods/inventory.

Line item bid award – choosing and purchasing from the supplier with the lowest price.

Market basket bid award – an approach to buying which groups similar items, or items that would logically be purchased from a single supplier, such as produce.

Purchase order – a formal document that is used by an employee to request that something is purchased by a company.

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[Purchase order](https://www.merriam-webster.com/dictionary/purchase%20order) <https://www.merriam-webster.com/dictionary/purchase%20order>

Section 3, Chapter 11

Production schedule – a list of menu items with the foodservice staff and equipment assigned to each item, along with the time of day assigned for producing the menu item.

Forecasting –the ability to accurately predict sales and expenses.

Activity analysis – watching activity on several (2 to 3) occasions to obtain an average time for the activity, or using a committee of two or three employees, such as cooks and supervisors or managers, to determine the time required for specific activities based on their experience.

Batch cooking – entails pre-prepping smaller batches of a recipe and cooking as needed. An example would be cutting all the vegetables and preparing the stir fry sauce for 100 servings of stir fry, then cooking just 12-15 servings of the stir fry at a time during the service period.

Carryover – leftovers or overproduction.

Portion control – planned portion sizes for orders which help meet customer expectations, assure that the recipe will yield the planned portions and that the portion cost established for the recipe stays in the expected range.

Overcooking – cooking an order too long shrinks its size, and the yield of a recipe is reduced. This results in fewer servings available for sale and a higher food cost per serving.

Waste – poor preparation techniques that cause the yield to be smaller. For example, if the beef roast is supposed to yield an 80% edible portion and the cook trims and/or cuts incorrectly so that the edible portion yield is only 75%, that 5% loss is waste and does not generate revenue for the operation.

Section 4, Chapter 12

Food & Beverage Cost of Goods Sold – the dollar amount spent on items actually used to provide the menu items sold to the guests.

Food & Beverage Cost of Goods Consumed (used) – the cost of products that were used to produce items that were not associated with corresponding sales

Beginning Inventory – the dollar value of the food and beverage items held in storage at the beginning of an accounting period.

Ending Inventory – the dollar value of the food and beverage items held in storage at the end of an accounting period.

Credits and transfers – inventory items that are not directly used to generate sales

Food to beverage or beverage to food – food items called for in drink recipes and beverage called for in food recipes

Standard food & beverage cost – the number of items sold (from a sales report) by the cost from the relevant standardized recipes

Attainable food & beverage cost – an “ideal” cost figure derived from the standardized recipes

Direct purchases – the amount for the ingredients, mostly fresh products, that are delivered and directly transformed every day

Requisition voucher – a form that is filled out for every item removed from storage

Adjustments – include credits for returned products or discounts, price adjustments from the purveyor/supplier, employee and complimentary meals, transfers in or out

Operational efficiency ratio – a measure of the extent to which the actual and standard (Ideal) costs differ. It is expressed as the ratio of Actual Cost to Standard Cost.

Variance – the difference between the standard and actual cost

Section 4, Chapter 13

Fringe benefits – extra benefits supplementing an employee’s salary, for example, a company car, subsidized meals, health insurance, etc.

Overtime – time in addition to what is normal, as time worked beyond one’s scheduled working hours

Minimum staff – the least number of staff members to adequately perform a business’s needs

Variable labor/payroll cost – costs that change based on the volume of the business. Food costs are the most obvious example of variable costs.

Fixed labor/payroll cost – the costs of running the operation that do not vary depending on the volume of

business. For many businesses, the cost of the building, heating, lighting, insurance, and other similar costs are fixed.

Productivity – the amount of output gained from a given amount of input. For instance, it could be the amount of food produced and served for each labor hour worked.

Employee turnover – the act of replacing an employee with a new employee.

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Section 4, Chapter 14

Other Expenses – all expenses that do not directly relate to Cost of Goods Sold and Employee Payroll & Benefits.

Uniform System of Accounts for Restaurants – a standardized account classification system that is used by most restaurant operators

Statement of Profit and Loss or “Income Statement” – a definition or formula of revenue advocated by the Uniform System

Controllable versus Non-Controllable Expenses– managerially decided versus fixed expenses

Controllable Profit – revenue after subtracting cost of sales, payroll, employee benefits and controllable expenses

Fixed versus Variable expenses – depends on how the expense varies as the activity level of an operation fluctuates

Budget – the amount of money or resources earmarked for a particular institution, activity or time-frame.

Appendix A: Cooking Principles

Learning Objectives:

- Describe common cooking techniques used in commercial foodservice kitchens

Key Terms:

- Caramelization
 - the browning of sugar, a process used extensively in cooking for the resulting sweet nutty flavor and brown color
- Gelatinization
 - the process of breaking down the intermolecular bonds of starch molecules in the presence of water and heat, allowing the hydrogen bonding sites (the hydroxyl hydrogen and oxygen) to engage more water. This irreversibly dissolves the starch granule in water.
- Maillard Reaction

- a chemical reaction between amino acids and reducing sugars that gives browned food its distinctive flavor.
- Smoke Point
 - also known as burning point of an oil or fat; the temperature at which, under specific and defined conditions, it begins to produce a continuous bluish smoke that becomes clearly visible.
- Heat Transfer:
 - Conduction
 - energy is transferred from molecule to molecule by direct contact; the molecules themselves do not necessarily change position, but simply vibrate more or less quickly against each other.
 - Convection
 - often referred to simply as convection, is the transfer of heat from one place to another by the movement of fluids. Convection is usually the dominant form of heat transfer in liquids and gases.
 - Radiation

- a method of heat transfer that does not rely upon any contact between the heat source and the heated object as is the case with conduction and convection.
- Moist Heat Methods:
 - Boil
 - the rapid [vaporization](#) of a [liquid](#), which occurs when a liquid is heated to its [boiling point](#), the [temperature](#) at which the [vapor pressure](#) of the liquid is equal to the pressure exerted on the liquid by the surrounding atmosphere.
 - Simmer
 - a [food preparation](#) technique in which [foods](#) are cooked in hot liquids kept just below the [boiling point](#) of [water](#)^[1] (which is 100 °C or 212 °F at [average sea level air pressure](#)), but higher than [poaching temperature](#) (higher than 71–82 °C). To keep a pot simmering, one brings it to a boil and then reduces the heat to maintain the temperature.

- Poach
 - a type of moist-heat [cooking](#) technique that involves cooking by submerging [food](#) in a [liquid](#), such as [water](#), [milk](#), [stock](#) or [wine](#). Poaching is differentiated from the other “moist heat” cooking methods, such as [simmering](#) and [boiling](#), in that it uses a relatively low temperature (about 160–180 °F (71–82 °C)).
- Blanch
 - a [cooking](#) process wherein a food, usually a vegetable or fruit, is scalded in [boiling](#) water, removed after a brief, timed interval, and finally plunged into iced water or placed under cold running water ([shocking](#) or refreshing^[1]) to halt the cooking process. Blanching foods will help reduce quality loss over time.
- Steam
 - a method of [cooking](#) using [steam](#). This is often done with a [food steamer](#),

a kitchen appliance made specifically to cook food with steam, but food can also be steamed in a [wok](#).

- Cooking en papillote

- a method of [cooking](#) in which the food is put into a folded pouch or parcel and then [baked](#). The parcel is typically made from folded [parchment paper](#), but other material, such as a [paper bag](#) or [aluminium foil](#), may be used.

- Braise

- a combination-cooking method that uses both wet and dry heats: typically, the food is first [sautéed](#) or [seared](#) at a high temperature, then finished in a covered pot at a lower temperature while sitting in some (variable) amount of liquid (which may also add flavor).

- Stew

- similar to simmering but using a smaller amount of liquid; good for tough cuts of meat.

- Dry Heat Methods:

- Roast/Bake

- a cooking method that uses dry heat where hot air envelops the food, cooking it evenly on all sides with temperatures of at least 150 °C (~300 °F) from an open flame, [oven](#), or other heat source.
- Barbecue
 - a cooking method which is usually done outdoors by [smoking the meat](#) over wood or charcoal.
- Pan Smoking
 - using a pan to smoke food by adding chips, wood, or chile to the pan, placing a metal rack in the pan for the meat. When the wood or chile starts to smoke, after 2 to 3 minutes, cover the pan, placing a weight on the lid to seal it tight.
- Broiling
 - the method of [cooking](#) food in boiling [water](#) or other water-based liquids such as [stock](#) or [milk](#).
- Grilling
 - a form of cooking that involves dry heat applied to the surface

of food, commonly from above or below.^[1] Grilling usually involves a significant amount of direct, radiant heat, and tends to be used for cooking meat and vegetables quickly.

- Griddling
 - cooking on a flat pan or griddle
- Pan-broiling
 - a cooking technique used for thin steaks, thin chops and fish fillets. It is a dry cooking method done in a frying pan on top of the stove with no added fat or liquid. It sears the surface of the meat, sort of like proper broiling would.
- Dry Heat Methods Using Fats:
 - Sauté
 - a method of cooking that uses a relatively small amount of [oil](#) or [fat](#) in a shallow pan over relatively high heat. Various sauté methods exist, and sauté pans are a specific type of [pan](#) designed for sautéing.
 - Pan-fry
 - characterized by the use of

minimal [cooking](#)
[oil](#) or [fat](#) (compared to [shallow](#)
[frying](#) or [deep frying](#)); typically
using just enough oil to
lubricate the pan

- Deep-Fry

- a [cooking](#) method in which food is submerged in hot [fat](#), most commonly [oil](#), rather than the shallow oil used in conventional [frying](#), done in a [frying pan](#).

- Sous Vide

- a method of [cooking](#) in which food is placed in a plastic pouch or a glass jar and cooked in a water bath or steam environment for longer than normal cooking times (usually 1 to 7 hours, up to 48 or more in some cases) at an accurately regulated temperature. The temperature is much lower than normally used for cooking, typically around 55 to 60 °C (131 to 140 °F) for meat, higher for vegetables.

- Molecular Gastronomy

- a subdiscipline of [food science](#) that seeks to investigate the [physical](#) and [chemical](#) transformations of ingredients that occur in [cooking](#). Its

program includes three areas, as cooking was recognized to have three components: social, artistic, and technical.

- Building Flavor:
 - Seasoning
 - the process of adding salt, herbs, or spices to food to enhance the [flavor](#).
 - Flavoring
 - Herbs
 - plants with savory or aromatic properties that are used for flavoring and [garnishing](#) food, excluding [vegetables](#) and other plants consumed for [macronutrients](#). Herbs generally refers to the [leafy](#) green or [flowering](#) parts of a plant.
 - Spices
 - a [seed](#), [fruit](#), [root](#), [bark](#), or other [plant](#) substance primarily used for [flavoring](#), [coloring](#)

or [preserving](#) food.

Spices are distinguished from [herbs](#), which are the leaves, flowers, or stems of plants used for [flavoring](#) or as a [garnish](#).

- Stir-Fry
 - a [Chinese cooking technique](#) in which ingredients are fried in a small amount of very hot oil while being stirred in a [wok](#).

Appendix B: Foodservice Equipment

Learning Objectives:

- Identify equipment used in commercial foodservice kitchens.
- Select appropriate commercial equipment to use in a quantity foodservice recipe originally written for home use.

Key Terms:

- **Rangetop**
 - a device commonly used for [cooking](#) which is commonly found in kitchens, for applying heat to the base of [pans](#). Cooktops are commonly powered by gas or electricity and often found integrated with an oven.



Range top. By [Marcelo](#) on Pixnio –[CC0](#)

- **Flattop**

- a type of cooking **range** whose surface is sort of a cross between a griddle and a grill. Unlike a grill, a **flat top** doesn't have a grate, but simply a **flat** cooking surface.



Flat top range. By [M](#) from Wikimedia Commons –[CC0 Public Domain](#)

- **Induction Cooktop**
 - A stove where your pan is heated by a magnetic field instead of having its bottom sitting on a flame with a gas **cooktop** or on an element with an electric stove.

- **Ovens**
 - **Conventional**
 - An oven that uses radiant heat (such as from burners or heating elements) to heat; and does not use a fan to recirculate heated air or electromagnetic induction or other means to heat.

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Conventional oven. By [HomeSpot HQ](#) on Flickr –[CC-BY](#)

- **Convection**

- An oven that has a fan with a heating element around it. A small fan circulates the air in the cooking chamber.



Convection oven. By [BoneDaddy](#) on Flickr er
–[CC-BY-SA](#)

- **Combi**

- an oven with three functions: convection, steam and combination cooking.



Convection oven. By [BBCLCD](#) from Wikimedia Commons –[CC-BY-SA](#)

- **Broilers and Salamanders**
 - a grill characterized by very high temperature overhead electric or gas heating elements.
image of an oven that heats from above.
- **Grill**
 - a metal framework used for cooking food over an open fire; a gridiron.



Burgers cooking on a grill. By [bkchaundy](#) on Pixabay –[CC0](#)

- **Deep Fat Fryer**
 - A heated vessel for frying food by immersing in hot **fat** or oil, as opposed to shallow frying in a frying pan.



Frying potatoes. By [byrev](#) on Pixabay –[CC0](#)

- **Tilt Skillet**
 - a versatile restaurant appliance that holds 30 gallons and can be used to simmer, steam, braise, roast, saute, fry, boil or broil.



- **Steam-Jacketed Kettles**
 - an improved, self-contained version of the large stockpot used for range top cooking. **Steam kettles** are often used to boil pasta, simmer sauces, stocks and stews.



- **Steam Cookers**
 - a kitchen appliance used to cook or prepare various foods with **steam** heat by means of holding the food in a closed vessel reducing **steam** escape.



Steam Cooker. By [noktao](#) on Pixabay –[CC0](#)

- **Mixers**

- a kitchen utensil that uses a gear-driven mechanism to rotate a set of beaters in a bowl containing the food to be prepared which automates the repetitive tasks of stirring, whisking or beating.

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- **Bench**

- a mixer which sits on a counter and has hinges to allow the beaters to rise out of the mixing bowl.



Mixers. By [Pear285](#) on English Wikipedia –[CC0](#)

- **Floor**

- A large mixer which is 3 to 4 feet tall and sits on the floor.



Large mixer. By [falco](#) on Pixabay –[CC0](#)

- **Attachments**

- **Paddle**

- an accessory for a mixer that spins to mix

the contents of the
mixer's bowl.

Image of a metal paddle attachment to a mixer

- **Wire Whip**

- Also called a whisk, this is a cooking utensil that fits into a mixer and can be used to blend ingredients smooth or to incorporate air into a mixture.

Image of a metal wire whip attachment to a mixer

- **Dough Arm**

- a metal helical accessory for a mixer used to make dough.

Image of a metal dough arm attachment to a mixer

- **Buffalo Chopper (Food Chopper)**

- **Slicer**

- a tool used in butcher shops and delicatessens to slice meats, sausages, cheeses and other deli products. Also called a slicing machine, deli slicer or a meat slicer.



Metal meat slicer. By [Sailko](#) from Wikimedia Common
-CC-BY

- **Food Processor**

- an electric appliance with interchangeable blades within a closed container into which food is inserted for slicing, shredding, mincing, chopping, puréeing, or otherwise processed at high speeds.



Food Processor. By [Your Best Digs](#) on Flickr –[CC-BY](#)

- **Blender**

- a kitchen appliance used to mix, purée, or emulsify food and other substances. A stationary blender consists of a blender jar with a rotating metal blade at the bottom, powered by an electric motor in the base.



Blender. By an [Unknown](#) on Pxhere
–[CC0](#)

- **Burr Mixer (Immersion Blender)**
- **Sous Vide**
 - Immersion Circulator: an electrical appliance used for sous vide cooking that is immersed in a container of water and that circulates and heats the water to a precise, consistently maintained temperature.



Sous Vide. By [Erikoinentunnus](#) on Wikimedia Commons
–CC-BY-SA

- **Vacuum Sealer**
 - a device that enables a method of packaging that removes air from the package prior to sealing. This method involves (manually or automatically) placing items in a plastic film package, removing air from inside, and sealing the package.



Vacuum Sealer. By [BBCLCD](#) on Wikimedia Commons
-CC-BY

- **Steam Table**
- **Cold Food Storage Equipment**
 - **Cooler – Walk-in & Reach-in**
 - an enclosed storage space refrigerated to temperatures

equivalent to a normal refrigerator that can be walked into, and has a total chilled storage area of less than 3,000 square feet.



Walk-in & reach-in cooler.

By [Sarah Oh](#) on Flickr

–[CC-BY-NC-SA](#)

- **Reach-in**
 - an enclosed storage space refrigerated to temperatures equivalent to a normal refrigerator and is closer in size to a household refrigerator than a walk-in cooler.



Reach-in cooler. By [Barebibotra](#) on Wikimedia Commons
-CC-BY-SA

- **Freezer – Walk-in & Reach-in**
 - an enclosed storage space refrigerated to temperatures equivalent to a freezer that can be walked into, and has a total storage area of less than 3,000 square feet.

Image preview

- **Cold Pass-through**
 - a combination of a walk-in and reach-in cooler where you can enter the refrigerated area and stock the shelves in the back, while customers can access the refrigerated products through glass doors on the front.



Cold pass-through refrigerator. By [Unknown](#) on Pexel –[CC0](#) ([Pexel specific licensing](#))

- **Cold drawers**
 - Refrigerated storage that opens like drawers.



Cold drawers. By [Susan Serra](#) on Flickr –[CC-BY-SA](#)

- **Pots & Pans**

- **Stockpot**

- a generic name for one of the most common types of cooking pot used worldwide. A stockpot is traditionally used to make stock or broth, which can be the basis for cooking more complex recipes.



Stockpot. By [Unknown](#) on Pixabay
–CC0

- **Saucepot**

- a cooking pot that has handles on either side and tight-fitting lid; used for stewing or boiling.



Saucepot. By [Marcelo](#) on Pixnio –CC0

- **Brazier/Rondeau**

- a cross between a pan and a pot, this pot is about 3–4 inches deep and about 1 foot in diameter with 1 long handle or 2 on either side and a lid.



Brazier/Rondeau. By [Erik Streb](#) on Wikimedia Commons –[CC-BY-SA](#)

- **Saucepan**

- a deep stovetop pan with a long handle and, usually, a lid, used to cook sauce.



Saucepan. By [Unknown](#) on Pxhere –[CC0](#)

- **Sauté Pan**

- **Straight**

- a pan with a wide flat bottom and vertical sides 4-5 inches high with a long handle on one side and a helper handle on the

other and a lid.



Straight pan. By [FiveRings](#) on Wikimedia Commons –[CC0](#)

- **Sloped**

- a pan with a wide flat bottom and sloped sides 3–4 inches high with a long handle on one side.



Sloped pan. By [Cooks & Kitchens](#) on Wikimedia Commons –[CC-BY](#)

- **Cast Iron Skillet**

- Cast-iron cookware is valued for its heat retention properties and can be produced and formed with a relatively low level of technology. Seasoning is used to protect the bare cast iron from rust and to create

a non-stick surface.



Cast Iron Skillet. By [Evan-Amos](#) on Wikimedia Commons –[CC0](#)

- **Double Boiler**

- A large pan containing hot water, into which other smaller pans are set in order to cook food at low heat (below the boiling point) or to keep food warm.



Double Boiler pot. By [Beth](#) on Flickr –[CC-BY](#)

- **Sheet Pan**

- a flat, rectangular metal pan typically

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about 2 feet by 1 foot and 1 inch deep used in an oven. It is often used for baking bread rolls, pastries and flat products such as cookies, sheet cakes, Swiss rolls and pizzas.



Sheet pan. By [Unknown](#) on Pxhere –[CC0](#)

- **Baking Pan**

- deeper than a sheet pan at about 3–4 inches and used for cooking meats.



Baking pan. By [Michael J. Bennett](#) on Wikimedia Commons –[CC-BY-SA](#)

- **Roasting Pan**

- a piece of cookware 5–6 inches deep typically with a lid used for roasting meat in an oven, either with or without vegetables or other ingredients. A roasting pan may be used with a rack that sits inside the pan and lets the meat sit above the fat and juice drippings.



Roasting pan. By [Carol VanHook](#) on Flickr
–[CC-BY-SA](#)

- **Wok**

- a versatile round-bottomed cooking vessel with a long handle, originating from China and used in a range of different Chinese cooking techniques, including stirfrying, steaming, panfrying, deep frying, poaching, boiling, braising, searing, stewing, making soup, smoking and roasting nuts.



Wok. By [Clem Onojeghuo](#) on Pexels –[Pexels Photo Licensing Info](#)

- **Hotel Pan**
- **Bain Marie**
 - a type of heated bath used in cooking to heat ingredients gently and gradually to fixed temperatures, or to keep materials warm over a period of time. A bain-marie is also used to melt ingredients. Also known as a water bath or double boiler.



Bain Marie. By [grongar](#) on Wikimedia Commons –[CC-BY](#)

- Scales
- Portioning Scale



Portioning Scale. By [Unknown](#) on Pxhere –[CC0](#)

- Digital Scale

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Digital Scale. By [xw7229525](#) on Pixabay –[CC0](#)

- **Volume Measures**
- **Liquid**
- **Measuring Cups**



Measuring cup. By [HomeSpot HQ](#) on Flickr –[CC-BY](#)

- **Measuring Spoons**



Measuring spoons. By [Julie Magro](#) on Flickr –[CC-BY](#)

- **Portion Control Tools**
- **Ladles**



Ladles. By [Graeme Bartlett](#) on Wikimedia Commons
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- Scoops/Dishers
- Spoodles
- Solid
- Perforated
- Thermometers
- Bimetallic
- Meat
 - a thermometer used to measure the internal temperature of meat, especially roasts and steaks, and other cooked foods.



Thermometer. By [Steven Jackson](#) on Flickr
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- Thermocouple



Thermocouple. By [Harke](#) on Wikimedia Commons
-CC-BY-SA

- **Instant Read**
- **Knives**
- **Chef's (French)**
- **Santoku**
 - a medium-sized, multipurpose kitchen knife of Japanese origin that has a lightweight blade with a straight or slightly curved cutting edge and a spine that curves downward to the tip. The santoku has long been the Japanese equivalent of a chef's knife.



Santoku. By [Plonk420](#) on Wikimedia Commons
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- **Utility**
 - The utility knife was originally a fixed blade knife with a cutting edge suitable for general work such as cutting hides and cordage, scraping hides, butchering

animals, cleaning fish, and other tasks.



Utility Knife. By [Simon Speed](#) on Wikimedia Commons –[CC0](#)

- **Paring**

- A thin-bladed knife intended for coring and paring (peeling) fruit such as apples as well as slicing small ingredient it is majorly used for detailed & controlled cutting.



Paring Knife. By [?](#) on Wikimedia Commons –[CC-BY-SA](#)

- **Boning**

- a type of kitchen knife with a sharp point and a narrow blade. It is used in food preparation for removing the bones of poultry, meat, and fish



Boning Knife. By [MrDarcy](#) on Wikimedia Commons –[CC0](#)

- **Slicer**
- **Serrated**
 - its edge is lined with small teeth, similar to a saw's. It will cut tomatoes, bread, and meat more effectively than a smooth-edged blade.



Serrated Knife. By [WLU](#) on Wikimedia Commons –[CC0](#)

- **Butcher**
 - a large, very sharp knife for cutting or

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trimming meat.



Butcher Knife. By [Seniju](#) on Flickr –[CC-BY](#)

- **Clam**

- A kitchen utensil that is used to pry open the hard shell of a clam or an oyster in order to remove the meat.



Clam. By [Wotlarx](#) on Wikimedia Commons –[CC-BY-SA](#)

- **Oyster**

- a short, thick blade that is used to pry

open oysters and separate their meat from the shell (shucking).



Oyster Knife. By [VIUDDeepBay](#) on Wikimedia Commons -[CC-BY](#)

- **Vegetable Peeler**
 - a kitchen tool consisting of a slotted metal blade attached to a handle that is used to remove the outer skin or peel of certain vegetables.



Vegetable Peeler. By [Peter Halasz](#) on Wikimedia Commons –[CC-BY-SA](#)

- **Tomato Shark**
- **Sharpening Steel**
 - a rod of steel, ceramic or diamond-coated steel used to realign/sharpen blade edges.



Sharpening Steel. By [Donovan Govan](#) on Wikimedia Commons –[CC-BY-SA](#)

- **Hand Tools & Small Equipment**
- **Parisienne Scoop**

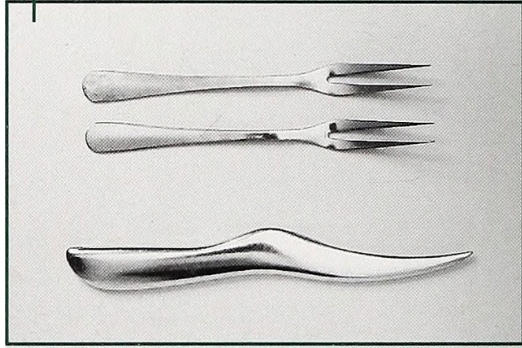
- is a small spoon-like tool used to cut round- or oval-shaped sections of melon, known as a melon baller, by pressing them into the melon's flesh and then rotating. It can also be used to cut other soft fruit and ice cream.



Parisienne Scoop. By [Alan Levine](#) on Wikimedia Commons –[CC-BY](#)

- **Cook's fork**

- A type of fork that is used for many different cooking tasks when working with a variety of different foods that are boiled, baked, cooked, stir-fried, or grilled. Cooking forks may be very short in length to enable smaller foods to be moved or removed from pans or they may be longer in length and larger in size to keep hands away from heat and to enable larger food items to be easily handled.



Cook's fork. By [UNC Sea Grant College Program](#)
on Flickr -[CC0](#)

- **Palette knife**

- A palette knife is a knife with a broad, flat, flexible blade used in cooking, or in painting to apply oil paint to a canvas or other surface.



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Palette knife. By [Just plain Bill](#) on Wikimedia Commons –[CC0](#)

- **Sandwich spreader**
- **Offset Spatula**
 - long, narrow tools that have a thin, flat metal blade or paddle at one end. The blade is blunt, not sharp, and is used for spreading frosting onto a cake or pushing batter into an even layer in a cake pan.



Offset Spatula. By [Dnor](#) on Wikimedia Commons –[CC0](#)

- **Rubber Spatula**
 - a flat thin implement used especially for spreading or mixing soft substances, scooping, or lifting.



Rubber Spatula. By [Marco Verch](#) on Flickr
-CC-BY

- **Pie Server**

- A cake and pie server, also called a cake shovel, pie knife, crêpe spade, pie-getter, pie lifter or cake slice, is a serving utensil used in the cutting and serving of pies and cakes. Some cake and pie servers have serrated edges. Another use can be to serve pizza.



Pie Server. By [3268zauber](#) on Wikimedia Commons –[CC-BY-SA](#)

- **Bench Knife**
 - a straight-edged metal rectangle with a handle along one side. Its primary use is to scrape unrolled dough from a work surface and cut dough into smaller pieces, but it comes in handy for other tasks, too.



Bench Knife. By [Schnolle](#) on Wikimedia Commons
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- **Pastry Wheel**

- A kitchen utensil used for cutting pastry dough as it is being formed and prepared for baking.



Pastry Wheel. By [Dnor](#) on Wikimedia Commons
–[CC0](#)

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- Spoons (metal, plastic)
- Slotted
- Perforated



Perforated Spoon. By [Coyau](#) on Wikimedia Commons
-CC-BY-SA

- Solid



Solid Spoon. By [Donovan Govan](#) on Wikimedia Commons
-CC-BY-SA

- **Skimmer**

- A skimmer is a flat, sieve-like scoop or spoon used for skimming cooking liquids or lifting ripened cream from milk, such as a spider used in Chinese cuisine.



Skimmer. By [Dnor](#) on Wikimedia Commons –[CC0](#)

- **Tongs (metal, plastic) (short, medium, long-handled)**

- a type of tool used to grip and lift objects instead of holding them directly with hands. There are many forms of tongs adapted to their specific use. Some are merely large pincers or nippers, but most fall into these few classes:
 - Tongs that have long arms terminating in small flat circular ends of tongs and are pivoted at a joint close to the handle used to handle delicate objects. Common fire-tongs, used for

picking up pieces of coal and placing them on a fire without burning fingers or getting them dirty are of this type. Tongs for grilling, tongs for serving salad or spaghetti are kitchen utensils of the same type. They provide a way to move, rotate and turn the food with delicate precision, or fetch a full serving in one grab.

- Tongs consisting of a single band of metal bent round one or two bands joined at the head by a spring, as in sugar-tongs (a pair of usually silver tongs with claw-shaped or spoon-shaped ends for serving lump sugar), asparagus-tongs and the like.
- Tongs in which the pivot or joint is placed close to the gripping ends are used to handle hard and heavy objects. Driller's round tongs, blacksmith's tongs or crucible tongs are of this type.



Tongs. By [Sac86738](#) on Wikimedia Commons –[CC0](#)

- **Chinois**

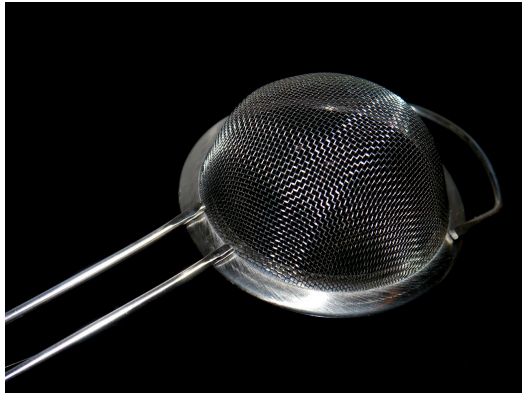
- a conical sieve with an extremely fine mesh. It is used to strain custards, purees, soups, and sauces, producing a very smooth texture. It can also be used to dust food with a fine layer of powdered ingredients.



Chinois. By [Laurent van Roy](#) on Wikimedia Commons –[CC-BY-SA](#)

- **Wire Mesh Strainer**

- A sieve, or sifter, is a device for separating wanted elements from unwanted material or for characterizing the particle size distribution of a sample, typically using a woven screen such as a mesh or net or metal.

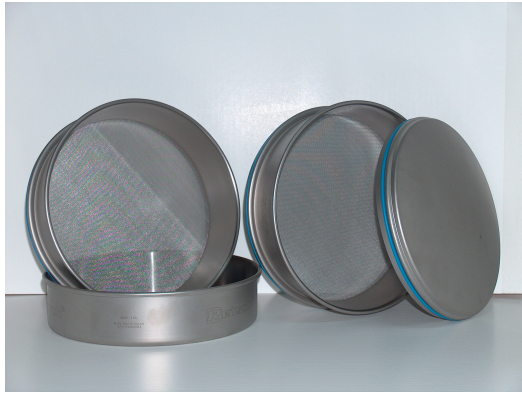


Wire Mesh Strainer. By [jhusemannde](#) on Pixabay
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- **Tamis**

- A tamis (pronounced “tammy”, also known as a drum sieve, or chalni in Indian cooking) is a kitchen utensil, shaped somewhat like a snare drum, that acts as a strainer, grater, or food mill. A tamis has a cylindrical edge, made of metal or wood, that supports a disc of fine metal, nylon, or horsehair mesh. To use one, the cook places the tamis above a

bowl and adds the ingredient to be strained in the center of the mesh.



Tamis. By [João Carvalho](#) on Wikimedia Commons
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- **Colander**
 - A colander (or cullender) is a bowl-shaped kitchen utensil with holes in it used for draining food such as pasta or rice.



Colander. By [Hustvedt](#) on Wikimedia Commons
-CC-BY-SA

- **Food Mill**

- A food mill (also called passatutto, purée sieve, moulinette, mouli légumes, or passe-vite) is a food preparation utensil for mashing and sieving soft foods.



Food Mill. By [Rickwakenyc](#) on Wikimedia Commons -CC0

- **Grater**

- A grater (also known as a shredder) is a kitchen utensil used to grate foods into fine pieces. It was invented by François Boullier in the 1540s, originally to grate cheese.



Grater. By [Donovan Govan](#) on Wikimedia Commons –[CC-BY-SA](#)

- **Zester**
 - A zester (also, citrus zester or lemon zester) is a kitchen utensil for obtaining zest from lemons and other citrus fruit.



Zester. By [Steven Jackson](#) on Flickr –[CC-BY](#)

- **Tomato Shark**
- **Mandolin**
 - a cooking utensil used for slicing and for cutting juliennes; with suitable

attachments, it can make crinkle-cuts. Its name is derived from the wrist-motion of a skilled user of a mandolin, which resembles that of a player of the musical instrument mandolin.



Mandolin. By [Alex Sims](#) on Wikimedia Commons
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- **Pastry Bag**

- A pastry bag (or piping bag in the Commonwealth) is an often cone- or triangular-shaped, hand-held bag made from cloth, paper, or plastic that is used to pipe semi-solid foods by pressing them through a narrow opening at one end, for many purposes including cake decoration. It is filled through a wider opening at the opposite end, rolled or twisted closed, and then squeezed to extrude its contents.



Pastry Bag. By [Polyparadigm](#) on Wikimedia Commons –[CC-BY-SA](#)

- **Pastry Brush**

- A pastry brush, also known as a basting brush, is a cooking utensil used to spread butter, oil or glaze on food.



Pastry Brush. By [Evan-Amos](#) on Wikimedia Commons –[CC0](#)

- **Can Opener**

- A can opener (in North American English and Australian English) or tin opener (in British and Commonwealth

English) is a device used to open tin cans (metal cans).



Can Opener. By [Evan-Amos](#) on Wikimedia Commons –[CC0](#)