CHAPTER 12

PRICING IN THE CRUISE LINE INDUSTRY

WARREN H. LIEBERMAN

Cruise line pricing challenges, tactics, and strategies differ greatly from hotels and other segments of the travel industry even though cruise ships are often described as floating hotels. Consider, for example, that hotels reporting annual *occupancy rates* of more than 70 percent are financial successes. The same is true for most airlines (although for airlines, it would be their utilization or *load factor*). When they have sustained occupancy rates of 80–90 percent, the profits of these firms are often enviable.

Successful cruise lines typically report utilization rates of at least 95 percent and the most financially successful cruise lines report utilization rates greater than 100 percent.[1] Empty cabins are not only problematic for the cruise line due to the potential loss of revenue, but for operational reasons as well. Many personnel on cruise ships depend on passenger gratuities for the bulk of their compensation; too many empty cabins can make it difficult for a cruise line to retain experienced employees and perhaps even more importantly, is also likely to have a negative effect on staff morale and consequently make the cruise a less pleasurable vacation for the passengers. The importance of filling every cabin makes pricing strategies and tactics especially critical for cruise lines.

This chapter reviews some of the pricing challenges faced by major cruise lines and how they respond to these challenges. While the designation is somewhat arbitrary, our primary focus is on the "mass market" and premium cruise lines rather than specialty, deluxe, or

I would like to express my great appreciation to Rod McLeod, Margarita Navarrete-Diaz, and Doug Santoni for reviewing this chapter and for providing me with a variety of ideas as well as many insightful recommendations for improving it. They were all very gracious in giving me more time than I had a right to ask of them. Having been a senior executive at several cruise lines during the past 40 years, Mr McLeod's knowledge of the industry is extraordinarily deep and broad. Beyond that, I have benefitted from the advice and guidance he has provided to me over many years. Not only did Ms Navarrete-Diaz offer her insights to me, but the friendship we have developed over the past 20 years has been extraordinarily valuable to me as well. I worked with Doug at American Airlines in the 1980s; having been with Royal Caribbean International for almost 20 years, he has witnessed and participated in much of the industry's evolution. To all three: Thank you!

[1] Cruise line occupancy rates are based on 2 passengers per cabin. As 3, 4, or 5 persons may occupy a cabin, occupancy rates can exceed 100 percent.

luxury cruise lines. Mass market and premium cruise lines are sometimes grouped together and referred to as contemporary cruise lines. Carnival Cruise Lines, Royal Caribbean International, Disney Cruise Line, Norwegian Cruise Line, Holland America Line, Princess Cruises, and Celebrity Cruises are examples of cruise lines whose operations are consistent with the theme presented in this chapter.

The cruise industry, and the pricing strategies and tactics employed by cruise lines, have undergone considerable evolution during the past 40 years. In the 1970s, cruise lines generally published prices commonly known as brochure rate, list price, or full inclusive tariff (FIT) by departure date, port of embarkation, and the duration of cruise. These rates did not change during the booking period. Passengers frequently paid the brochure rate for a cruise. Pricing became more complex in the 1980s and increasingly dynamic in the 1990s, reflecting significant changes in the industry's operations.

Today, cruise lines initially set base rates that serve as initial selling rates. During the booking horizon, stateroom or cabin category prices are then adjusted for each cruise.[2] This chapter focuses on the process and decisions made to adjust cruise prices during the booking horizon rather than how the initial base prices are set. We also focus on the pricing practices of cruise lines with US-based cruises since over 80 percent of cruise embarkations in 2006 were from North American ports and 78 percent of the world's cruise passengers lived in the United States (BREA 2007).[3]

Understanding the nature of the industry's evolution provides insights into the pricing challenges currently faced by cruise lines. Consequently, prior to discussing specific pricing challenges and cruise line efforts, we begin with an overview of the recent evolution of the cruise industry and the business environment faced by cruise lines, with an emphasis on covering those aspects of the industry that influence pricing decisions.

12.1 Cruise vacations: the modern era

Bob Dickinson and Andy Vladimir in their book *Selling the Sea* make a strong case that the modern cruising era began in the late 1960s or early 1970s (Dickinson and Vladimir 1997). After the television show, *The Love Boat* premiered in 1977, cruise vacations became more popular. Their market appeal and sales opportunities greatly expanded. Perhaps 2 percent of the United States population had gone on a cruise 35 years ago (McLeod 2008), doubling to more than 4 percent by 1990 (CLIA 1990); today that figure is approximately 20 percent (CLIA 2008).

During the formative years, cruise operations underwent significant changes, some of which were to have significant and lasting (40 years and counting!) impacts on the pricing structure and approach of cruise lines. These included:

[2] The potential for price adjustments to shift demand between cruises on nearby departure dates is considered. When sufficiently deep discounts are offered, passengers who have already booked a cruise have been observed to cancel their reservations and switch to another departure date. In addition, offering deep discounts on a cruise may slow down the booking process for cruises on nearby dates.

[3] Europe and Asia are becoming increasingly important cruise markets.

- the cruise port with the greatest number of passenger embarkments in the United States shifted from New York to Miami, as the popularity of Caribbean cruise vacations began to dwarf the popularity of trans-Atlantic crossings;
- airline flights and cruises could be purchased as an integrated package; air/sea departments became critical within cruise lines;
- cruise line marketing shifted from a destination-focus to an experience-focus;
- active promotion of cruises began further out (i.e. relative to departure date);
- cruise lines adopted computer-based reservation systems;
- substantially larger ships were constructed;
- many cabins, not just a few suites, were designed with balconies;
- cruise lines offered enhanced on-board services, some available for a supplemental charge;
- total industry capacity increased dramatically.

For many, especially those who live in North America, the phrase *cruise vacation* is likely to spark images of warm, sunny beaches and Caribbean islands. In 2006, almost 56 percent of 9 million cruise passengers that embarked on cruises from US ports began their cruises from one of five Florida ports and sailed to various Caribbean islands. Approximately 1.9 million sailed from Miami and approximately 4.4 million sailed from three Florida ports: Miami, Port Canaveral, and Port Everglades. Indeed, more cruise passengers sailed from each of these ports than from any other US port.[4] The fourth largest cruise port in the United States was Galveston, Texas, where approximately 617,000 passengers began their cruise vacations. But Caribbean cruises out of Miami, or out of Florida ports were not always so dominant (BREA 2007).

The contemporary Caribbean cruise vacation product began to take shape in 1966 (Dickinson and Vladimir 1997). In that year, Arison Shipping Company formed a partnership with a Norwegian firm that owned the *Sunward*, a new ship. Under the name Norwegian Caribbean Lines (NCL), 3- and 4-day cruises to Caribbean islands were offered year round. Originally built to offer a cruise-ferry service in Europe, but unable to do so for a variety of reasons, the *Sunward* contained a roll-on roll-off cargo deck capable of transporting up to 500 cars. NCL added a second ship in 1968, the *Starward*; the *Starward* also had the capability to transport cars and cargo, although it had a more limited capacity of 250 cars. Caribbean cruising, as we know it today with ship design focused on providing for passenger entertainment was ~~coming~~ on the horizon but at this point wasn't quite the product with which we are now familiar.

Additional ships and cruise lines began sailing from Miami. A wider variety of cruise lengths were offered. Among them, 3-, 4-, and 7-day cruise vacations formed the staple of Caribbean cruising and were to become far more popular than trans-Atlantic voyages ever were. The Miami-based Caribbean cruise became the focal point of cruising in North America, although cruises from Los Angeles to the West Coast of Mexico, from Vancouver

[4] With approximately 457,000 cruise embarkations, Tampa, Florida was the seventh largest US port of embarkation and fourth largest in Florida. Including the embarkations from Florida's fifth largest port, Jacksonville, over 40 percent of the world's 12 million cruise embarkations were in Florida.

to Alaska, from New York to Bermuda, and cruises out of other Florida ports were also destined to grow in popularity.

As Miami-based Caribbean cruising proved to be popular, the number of cruise lines and ships serving this market grew rapidly. Cruise line executives realized that the local population was too small to provide enough passengers to fill the ships. New York City and the nearby cities in the northeast were large enough to provide a strong demand for the relatively modest number of trans-Atlantic voyages departing from New York City. Filling the berths on Miami-based cruises, however, required more passengers than Miami, or even Florida, could provide. Recognizing the need to broaden their marketing efforts and attract a significant number of passengers from outside of Florida, cruise lines began to include air transportation into their product offering. Recalling events in January 1971, Rod McLeod, a former Executive Vice President of Sales, Marketing, and Passenger Traffic for Royal Caribbean Cruise Line (RCCL), commented:

> We were reaching out for a new market and offering round-trip air from Los Angeles. . . . Our price, including all port charges, transfers, and a quick sightseeing tour of Miami and lunch on Key Biscayne before boarding the ship, was only $368! Since this price was only $50 or $60 higher than RCCL's brochure-cruise-price, it was a tremendous bargain by any standards. (Dickinson and Vladimir 1997)

The integration of air flights and cruises had begun.

12.2 Air–sea pricing takes off

According to the Cruise Line Industry Association (CLIA), the number of worldwide cruise passengers grew from approximately 500,000 in 1970 to more than 12 million in 2006 (CLIA 2007). As noted previously, approximately 75 percent of the passengers in 2006 boarded cruises in North American ports and more than 80 percent lived in the United States. Approximately 60 percent traveled to their port of embarkation by air (BREA 2007). As the industry grew in the 1970s, 1980s and 1990s, so too did the importance of attracting passengers from cities throughout the United States.

Cruise lines tried a variety of pricing structures with varying results. Many, if not all cruise lines began to act as tour operators, packaging round-trip airfares, transfers between the airport and the ship, and hotel rooms for guests arriving the day prior to the cruise. Cruise line Air/Sea Departments became responsible for arranging air transportation for more and more passengers as the benefits of making integrated flight arrangements through the cruise line became apparent. Passengers benefited financially as the cost of getting to and from the cruise ship was often less when airline flights were arranged through the cruise line. In addition, when passengers booked an air–sea package through the cruise line, cruise lines assumed financial and logistical responsibility for transporting passengers to the ship even when flights were delayed, in some cases flying passengers to the ship's first port of call. In contrast, cruise lines did not assume any responsibility for getting passengers to the ship when they booked their own flights.

In many ways, the popularity of air–sea packages outpaced the ability of cruise lines to manage and price them. In the early 1990s, more than half the passengers on a 7-day Caribbean cruise might have purchased an air–sea package; an even greater percentage of the passengers on an Alaskan cruise were typically air–sea. The growth of the air–sea package raised new pricing questions:

- How should cruise-only prices relate to air–sea packages?
- Should the add-on for airfare depend on the gateway city (the city from which the passenger was flying from) and if so, how?
- When discounts were offered to air–sea passengers, should the price reduction be applied to the cruise or the flight cost?

As cruise executives struggled to address these questions, they generally adopted one of four pricing strategies:

- *Free airfare*. Advertise "free" airfare or "airfare included" in the cruise price, but provide a discount (often termed an allowance, credit, or deduction) from the all-inclusive price to those passengers who only wanted to book the cruise.
- *Air supplement*. Advertise a cruise-only price. Offer an optional air supplement for a specified set of cities. The supplement included round-trip airfare, ground transfers, and baggage transfer assistance. The air supplement was the same for passengers flying from any of the specified cities; for other gateway cities additional fees might apply and those fees could vary by gateway city.
- *Zonal fares*. Advertise a cruise-only price. Charge an airfare add-on for passengers who arrange their flights through the cruise line. Rather than charge a single air add-on for all cities or different add-ons for each gateway city, gateway cities were grouped into several zones. The airfare add-on to the port of embarkation was the same for all cities in the same zone.
- *Distinct air add-ons*. Advertise the cruise-only price and charge an air add-on, the amount of the air add-on varying by gateway city as well as by departure date.

Under all these strategies, the amount paid by the cruise line to the airline was generally not equal to the amount paid by the cruise passenger to the cruise line for the flight. Cruise lines typically negotiated contract airfares with each airline. The contract fares varied by gateway city, airline, and sometimes day of week. As passengers were not assigned to flights until after an air–sea rate was agreed to and the booking confirmed, cruise lines did not know the exact cost of transporting the passenger at the time of booking. Based on airline seat availability and the number of passengers flying out of a gateway city, cruise lines would frequently use multiple airlines from a gateway city (Lieberman and Dieck 2002).

During the past 20 years, most cruise lines have implemented at least two of the pricing strategies described above and some have probably tried three or all four strategies with varying levels of financial and marketing success. For example, a 1992–93 Carnival Cruise Lines brochure advertised a free round-trip airfare from over 175 cities to Miami, Los Angeles, or San Juan when taking a one-week cruise and a free round-trip airfare from over 150 cities to Miami or Orlando when taking one of their 3- or 4-day cruises. Passengers who purchased a cruise-only product were allowed to deduct $250 from the air-inclusive price when purchasing a 7-day cruise and $100 from the air-inclusive price when purchasing a 3- or 4-day cruise (Carnival Cruise Lines 1992). That pricing strategy was eventually abandoned.

When Disney Cruise Line (DCL) began offering 7-day vacations in 1998, a round-trip airfare was included for 114 airports in the United States and 3 Canadian airports. A $250 credit was granted to guests who provided their own air and ground transportation.[5] Within a few years, however, DCL no longer included airfare or ground transportation in its base price. As noted in its 2002–04 Vacations brochure, an airfare/ground transportation/baggage transfer add-on was available for 153 US airports with additional charges potentially applicable for other airports. Currently, DCL's charge for airfare varies by gateway city and departure date.

Offering free airfare is probably the easiest approach to market and communicate, but tends to limit a cruise line's ability to set cruise-specific prices that best attract the type and level of demand required. For example, as bookings are made for a cruise, stimulating demand in a particular city or set of cities is highly desirable. When free airfare is offered, cruise lines are more limited in their flexibility to use pricing to stimulate sales in these cities; this can be particularly problematic when sales need to be stimulated within a few weeks of departure.

Zonal fares are a middle ground. They are transparent, allowing potential customers to evaluate and compare the cost of a cruise vacation to other vacation options, without making a booking; but zonal fares are not quite as easy to communicate and market as free airfare. As with free airfare, zonal fares limit a cruise line's flexibility to use price reductions to stimulate cruise-only sales. Reductions in the cruise-only price can have the unintended consequence of stimulating sales from gateway cities that have high airfares and are subsequently less profitable for the cruise line. Limiting the number of air–sea packages that can be sold in a gateway city is one way of addressing this impact, but this requires a level of automation and management that was beyond the capabilities of many cruise lines in the 1980s and 1990s, when this pricing strategy enjoyed its greatest popularity.

Varying air add-ons by gateway city and day of departure provides a cruise line with the greatest flexibility in selling its product at profit-maximizing prices, but at the cost of significant added complexity. Potential air–sea cruise passengers are no longer able to easily estimate the cost of a cruise vacation from an advertisement; for example, specific travel dates and cruise departure date need to be provided to a cruise line or travel agent. Although cruise lines did not typically use this strategy in the 1980s and 1990s, this strategy is the most commonly used today.[6] Interestingly, the popularity of airline frequent flyer programs may have helped make this strategy more acceptable to cruise passengers. Compared to 1990, and certainly to 1980, many more cruise passengers redeem airline miles to procure their flights. (To be fair, it should be noted that American Airlines and United Airlines did not launch airline frequent flyer mileage programs until 1981). By the

[5] Initially, Disney Cruise Line's 7-day vacations combined a cruise of 3 or 4 days with a land vacation. Customers were referred to as *guests*, not as passengers. The air–sea price included ground transfers to and from *Walt Disney World Resort*, Port Canaveral, and the Orlando airport.

[6] In the 1980s and 1990s, cruise lines generally required reservations to be made through travel agents. Now, individuals can make reservations directly with cruise lines by phone or via their website. This has mitigated some of the complexity.

mid 1990s, cruise lines may have been making flight arrangements for almost 65 percent of their passengers; that fraction is likely now closer to 15 percent (McLeod 2008).

12.3 City-specific promotional fares

Migrating from the "one size fits all" strategy of having a single airfare add-on to a fully customized product where the airfare depends on the passenger's origin and travel dates allowed cruise lines to dramatically refine their pricing tactics. Promotional fares could now be directed at individual gateway cities or groups of cities without disrupting the integrity of the cruise line's pricing strategy.[7] For those cruise lines offering a Lowest Price Guarantee, this was especially valuable.

12.3.1 Lowest price guarantee

Those living near the ports from which cruise ships depart are geographically well positioned to take advantage of last-week or even last-minute discounting on cruise ships. Dickinson and Vladimir provide a wonderful description of last-minute pricing decisions (and we mean this literally) during the 1970s where "septuagenarians [were] milling about the embarkation area, bags in tow, hoping to take advantage of a standby rate or a last-minute cancellation." Additionally, embarkation supervisors and pursers "pocketed 'gratuities' in exchange for the cabin gratis or for a favorable rate", displaying entrepreneurial creativity (Dickinson and Vladimir 1997).

As more and larger cruise ships were built and operated, cruise lines placed higher importance on incentivizing passengers to book early. Without a sufficiently strong base of early bookings, deep discounting to fill a ship was often necessary and ultimately, a prescription for financial disaster.

To encourage early bookings, a few cruise lines, such as Princess Cruises and Holland America Line provided a "Lowest Price Guarantee". If the same product (e.g. cabin category, gateway city combination) was sold for a lower price on the same cruise at a later date, these cruise lines committed to refunding the difference to customers who booked earlier.

Distinguishing between the cruise-only and air–sea products, and setting airfare add-ons by gateway city, allowed these cruise lines enormous flexibility to offer discounts where and when they needed, with limited financial risk. For example, when booking levels were low on a departure, a review of the air–sea bookings for that departure enabled pricing and revenue management staff to identify those gateway cities from which air–sea passengers had booked; so discounted rates were only offered to air–sea passengers from other cities. If no air–sea passengers from Detroit had booked the departure, and the airfare from Detroit

[7] Cruise lines use a variety of tactics and strategies to sell their cabins for discounted prices. We use the term promotional fares as a broad reference to any of these options. Promotional fares may be highly targeted (e.g. to Florida residents, to passengers purchasing air travel from Detroit in conjunction with a cruise) or very broad. Some cabins on a cruise may be sold for full price while others are sold at discounted prices.

was $450, this essentially enabled the cruise line to discount the air–sea price for Detroit passengers by up to $450 without affecting air–sea bookings from any other gateway city or cruise-only bookings. Further, building up demand with such targeted discounts also meant that fewer deeply discounted cruise-only discounts would need to be offered closer in to a departure date.

In addition, depending on how much demand needed to be stimulated, opportunities existed for cruise lines to target air–sea promotions to those cities where they either had negotiated lower contract airfares, or in cases of cruise lines booking publicly available airfares, where those airfares were lowest.

12.4 When is a discount not a discount?

For the most part, people face, or artificially limit themselves to a relatively limited set of product choices when they travel. During the past 40 years, most airline flights have offered between two and four choices of cabin, such as Coach, Premium Coach, Business, and First Class. Given the price differential associated with these options, however, airline passengers rarely consider more than two of them and most only consider one when booking a flight. When renting a car, most customers typically consider no more than two or three car classes, although the rental car firm may offer 8–10 options. Even when booking a hotel room, no more than two or three choices tend to be considered by guests, even if the hotel offers 10–12 room categories.[8]

Cruise lines tend to classify their cabins in far more categories than other travel companies. We believe that many cruise passengers tend to weigh the advantages and disadvantages of more categories than they typically do when making their other travel choices. Excluding cabin categories that contain only 1 or 2 cabins, a large cruise ship is likely to have 15–25 different cabin categories, each with its own price.[9] Progressing from the least expensive cabin category on a ship to the most expensive, price differentials are frequently relatively small, ranging from perhaps just a dollar or two per day per person, up to perhaps $15 or $20 per day per person. Table 12.1 contains descriptions of the more common cabin categories for a particular ship (Royal Caribbean International 2008).[10] While many of the cabin categories are physically different from the others, this is not always the case. For example, Cabin Categories I and H are only differentiated by deck level.

Cruise lines have found that many customers have preferences and are willing to pay more for a wide variety of cabin features. Some of these features might be relatively easily anticipated, such as type of view (e.g. none, obstructed, small window, floor to ceiling window), whether or not the cabin has an outside balcony, and the size of the cabin.[11] Price

[8] These observations are based on our experience. More recently, some car rental firms seem to be borrowing from the cruise line playbook. Some rental locations offer as many as 25 car classes, although 15–20 of these may be *specialty* car classes containing only a single car model.

[9] The number of cabin categories on a ship has not always been as large as today. In 1990, for example, large ships generally had 10–15 cabin categories. Some newer ships have over 30 categories.

[10] Partial deck plan for the *Explorer of the Seas*.

[11] Lifeboats positioned outside cabins can obstruct views.

Table 12.1. Example cabin categories on a cruise ship

Cabin category	Cabin description	Accommodation description
D1, D2, D3	Superior ocean view stateroom	Two twin beds (can convert into queen-size), private balcony, sitting area, and a private bathroom. Rates vary from deck to deck (188 sq ft, balcony 50 sq ft). Some staterooms have a sofa bed.
E1, E2	Deluxe ocean view stateroom	Two twin beds (can convert into queen-size), private balcony, sitting area with sofa, and a private bathroom. Rates vary from deck to deck (173 sq ft, balcony 47 sq ft).
F0	Family ocean view stateroom	Two twin beds (can convert into queen-size), additional bunk beds in separate area, separate sitting area with sofa bed, and a private bathroom with shower (265 ft).
F	Large ocean view stateroom	Two twin beds (can convert into queen-size), sitting area with sofa, vanity area and a private bathroom (211 sq ft).
I	Ocean view stateroom	Two twin beds (can convert into queen-size), sitting area with sofa, vanity area, and a private bathroom (180 sq ft).
H	Ocean view stateroom	Two twin beds (can convert into queen-size), sitting area with sofa, vanity area, and a private bathroom (180 sq ft).
M, L, N, Q	Interior stateroom	Two twin beds (can convert into queen-size), sitting area with sofa, vanity area, and a private bathroom (160 sq ft).

differentials due to other cabin characteristics, such as a mid-ship versus end-of-ship location or deck level (large cruise ships generally have cabins on 5–9 decks) may be surprising to those who have not previously cruised. Consequently, booking a cruise vacation entails selecting from a portfolio of choices and prices.

Offering a portfolio of choices has enabled cruise lines to provide a wide variety of pricing incentives and promotions. Rather than simply lowering (or raising) prices, less transparent, but highly effective ways to manipulate demand and affect the net revenue received by the cruise line include offering Cabin Category Guarantees and Upgrades. While these techniques are available to—and are used by—travel companies such as car rental, hotels and resorts, tour operators, and even airlines, they tend to have more widespread application and offer greater value to the cruise lines because of the extent to which they have differentiated their physical product.

12.4.1 Cabin category guarantees

Although most reservations are for a specific cabin, some passengers may be allowed to book a cabin category instead. When passengers book a cabin category, they are guaranteed to receive a cabin in the designated category, or higher. This is called a *Cabin Category Guarantee*. The actual cabin and cabin category are selected at the cruise line's discretion prior to sailing.

For cruises where the lower priced cabin categories are fully booked, but higher cabin categories are not, selling guarantees helps a cruise line maintain integrity in its pricing structure and generate greater revenues. If demand is insufficient to sell-out the more expensive cabin categories, selling guarantees enables the cruise line to avoid explicitly discounting its premium cabins as it takes actions to ensure that the ship sails full. Depending on demand patterns, guarantees can be sold for selected lower priced cabin categories, even while additional reservations are accepted for the premium cabins at non-discounted prices to those who are willing to pay more to definitively secure such accommodations. Selling guarantees is essentially *overbooking* the lower cabin categories.

Selling guarantees allows the cruise line to maintain a high level of control over which of its guests are offered upgraded accommodations. For example, internal policies can be established to prioritize the order in which Cabin Category Guarantee bookings receive upgraded accommodations (e.g. those who have previously cruised with the cruise line might be rewarded for their loyalty). Cruise lines might even elect to offer upgrades to more valued customers who booked a specific cabin prior to upgrading customers who booked guarantees.

12.4.2 Upgrades

Guarantees do not require cruise lines to provide upgraded accommodations to a guest. By comparison, offering *upgrades* at the time of booking is a greater booking incentive, as passengers know for certain that they will be accommodated in a higher cabin category than the one for which they pay. When upgrades are offered, passengers may be informed that they will be upgraded to a specific cabin category or higher. Upgrades can be used strategically to encourage passengers to make purchases in higher categories than they otherwise might have done, lured by the promise of then being upgraded to an even better cabin.

For example, a cruise line might have several cabin categories for interior cabins (i.e. no window). Many passengers who book interior cabins choose to book the least expensive interior cabin category. Further, the price differential between the least expensive interior cabin category and the most expensive interior cabin category may be quite a bit less than the price differential between the least expensive cabin with a window and the least expensive interior cabin. Consequently, offering to upgrade those passengers who book a more expensive interior cabin category to a cabin with a window can induce some passengers to pay more for a cabin than they would otherwise have done.

Offering upgrades tends to have more financial risk for the cruise line than offering guarantees. Upgrades can dilute revenues when passengers who are willing to pay more for a more desirable cabin category elect to “buy down” from a higher cabin category to get the lower price, knowing that they will definitely be accommodated in a higher cabin category.

12.5 Case study: if there is no free lunch, who pays?

The prices offered by a cruise line are typically subject to extensive management review, analysis, and scrutiny. By comparison, internal *transfer pricing* decisions receive far less attention, yet can also have great impact on a cruise line’s bottom line, especially for cruise lines that offer combined land and sea excursions. Sales responsibility for the land portion of purchases typically resides in a department other than the one responsible for the cruise portion. Each department's staff is likely to be evaluated and receive bonuses based on the financial performance of their operations. The dilemma: when land/sea packages are sold at a discounted price, how should the discounts be apportioned between the land and sea excursions? While it might not seem that such an internally focused decision would have an impact on customer purchases, it turns out that such decisions influence the sales process. Consider the case of a cruise line that operates cruises to Alaska.

In combination with the cruise, land tours in Alaska are offered. Passengers are thus able to take a 12-day cruise/tour, where they might take a 7-day north-bound cruise originating in Vancouver with its final stop in Anchorage, leave the ship to spend 5 days in northern Alaska, and then fly home. Or, passengers can fly to Anchorage, spend their first 5 days in northern Alaska, and then take a south-bound cruise from Anchorage to Vancouver.

For some cruise/tour dates, demand needs to be stimulated; discounts are offered. So whose budget does the discount go against? The cruise department's? Or the land tour department's? There are certainly many ways to carry out the allocation. In this case, the discount was applied to the land tour department's budget. Consequently, the land tour department had a strong incentive to avoid selling the discounted vacations, as increasingly large discount totals would have a negative impact on the department's staff compensation. Of course, if cruise/tours went unsold, this would also have a negative impact on the department's performance and staff compensation. So that was not a feasible option either.

Rather than bear the brunt of the impact of the transfer pricing policy, the land/tour department simply had cruise line staff try to sell the cruise/tours for the full price or only a small discount. In contrast, third-party tour companies were allowed to sell the cruise/tours for more heavily discounted prices. Not surprisingly, most of the cruise/tours were sold through these third-party companies rather than by the cruise line itself. This approach essentially gave the third-party tour companies effective responsibility for setting the price at which the cruise/tours were sold (e.g. the tour companies decided whether to give a customer the full benefits of the available discount). In addition, the cruise line also had to pay a sales commission for every cruise/tour sold by a third party; a commission that did not have to be paid when the cruise line's own agents made a sale. In short, the cruise line's transfer pricing policy did much to decrease the cruise line's revenues as well as increase its costs; not exactly a prescription for financial success.

Broadly speaking, the undesirable sales behavior noted above arose because individual and departmental goals were poorly aligned with corporate goals (e.g. maximizing profits). There are many ways to address such situations, although none are perfect. Consequently, a process of incremental improvement may provide the best strategy. For example, suppose monthly allowances for discounts were established. So long as the threshold was not exceeded, staff compensation would not be adversely affected. Financial incentives could be offered when the total volume of discounts in a month was less than specified thresholds. The monthly allowances might vary, based on the strength of market demand in combination with sales thresholds. The key point here is that internal company practices can—and for the above company, certainly did—have dramatic impacts on the prices being offered.

12.6 Revenue management

Although many valid definitions of revenue management have been proposed, Bob Cross provides one that is succinct yet comprehensive: "Revenue Management is the art and science of predicting real-time demand at the micromarket level and optimizing the price and availability of products" (Cross 1997). Although the reports and techniques used were rudimentary, cruise lines were certainly practicing revenue management in the mid 1980s. The primary state-of-the-art practices included *handicapping formulas* to predict the cancellation rates of group and individual bookings, booking pace information to inform decisions about what pricing initiatives should be implemented, and weekly information about the number of unsold cabins in each cabin category for all departures in the next 12 months, or even further into the future.

Compared with other segments of the travel industry, business processes initially adopted by cruise lines to make and execute revenue management decisions required much more time from senior management. Up until the early 1990s, it was a relatively common practice for the CEO or other Senior Executive to spend time, perhaps 45 minutes a week, working with each Ship Manager (each ship might have a different Ship Manager). They would review the booking status of each ship's departure over the next 12–18 months, the number of cabins still available for sale, and the fares offered. Using this information, they would identify what changes, if any, to make, including which promotions to launch, continue, or stop.

When a cruise line has no more than three or four ships, as was the case for the largest cruise lines until the mid-1980s, the above approach is feasible. Even with six or fewer ships it remains possible (whether or not it is desirable is another matter). But the practice does not scale well and as cruise lines began to operate more ships, responsibility for tactical pricing decisions was necessarily driven down to lower levels of the organization. A CEO simply does not have the time to meet with the staff managing ten ships to review the status of each future departure.

Cruise lines expanded at an accelerated pace during the 1990s and thereafter. Indeed, by early 2008, Carnival Cruise Lines operated 22 ships, Royal Caribbean International operated 21, Princess Cruises operated 16, Holland America Line operated 13, and Costa Cruises and Norwegian Cruise Line both operated 12 ships. Additional ships were also under construction for each of these lines.

In addition to the increasing number of ships, cruise ships were designed to accommodate far more passengers than ever before. "Revenue managing" larger ships is more complex than for smaller ships and typically requires more time and effort. In 1970, the largest cruise ship sailing year round to the Caribbean islands may have been the *Song of Norway*, a Royal Caribbean Cruise Line ship with a capacity of less than 1,000 passengers. By the early 1980s, ships able to accommodate as many as 1,500 passengers were sailing year round in the Caribbean. The era of the mega ship began when Royal Caribbean's *Sovereign of the Seas* departed on its maiden voyage out of Miami in 1988. The *Sovereign of the Seas* was capable of handling approximately 2,500 passengers. While some wondered whether a ship accommodating so many passengers was "too large", the *Sovereign* is dwarfed by the newest (and largest) ship cruising in the Caribbean, Royal Caribbean International's *Oasis of the Seas* which accommodates more than 6,000 passengers!

The extent to which this growth led (or perhaps required) the industry to transform its revenue management practices should not be underestimated. As cruise lines grew, the traditional ways in which they managed and adjusted their prices began to break down. Greater automation became necessary. These advances may have led some cruise industry executives to seek more systematic approaches to pricing. Other factors that may have prompted cruise executives to explore ways to enhance their revenue management capabilities were the decisions of some cruise lines to become public companies in the late 1980s and early 1990s as well as the widely reported success of airlines with innovative revenue enhancement strategies. Such developments led to greater pressures to maximize revenues and profits for each sailing, as more was as stake. Also, the greater potential revenue and profit made it easier and more important for cruise lines to invest in systems and strategies that were expected to help drive additional revenue and profits. Among these strategies, one of the most important was revenue management. Next we examine some of the specific advances that were made in this area.

12.6.1 Handicapping formulas

When a booking is received for a specific cruise departure, the cruise line estimates the likelihood that the booking will either *materialize* and yield passengers, or that the booking will cancel.[12] In the 1980s these estimates were typically based on a *handicapping formula*.

To understand how a handicapping formula works, it is important to know that every booking involved a sequence of required actions, typically requiring a payment or a communication. The following illustrates a typical sequence of events for a group booking:

- Within 1 month of the date of the group booking, an initial deposit of $25/person is required.
- A second deposit of $200/person is required by 5 months prior to departure.
- Final payment is due 60 days prior to departure; passenger names are to be provided at this time.

Of course, as one might imagine, payment due dates were often enforced loosely, or not at all, for the larger travel agencies and those agencies that provided a high volume of bookings to a cruise line.

A common cruise line practice to forecast the number of group passengers (known as the handicapping formula) was something akin to:

- When a group booking is initially received, forecast a 10 percent show-up rate.
- If any additional money is received when the initial deposit is due, revise the forecast to 35 percent.
- When the second deposit is received, revise the forecast to 85 percent.
- When final payment is received, revise the forecast to 100 percent.[13]

[12] Materialization forecasts are sometimes referred to as *show-up* forecasts.

[13] In some cases, the names of passengers might be supplied even prior to final payment. In such instances, cabins for these passengers might be allocated and a 100 percent show-up rate forecast for these cabins.

With respect to bookings by individuals, a typical policy was:

- Within a week of a reservation being made, a deposit of $200 per person is required. A grace period of up to four days may be granted if the deposit is not received by this time. If the initial deposit is not received by the end of the grace period, the reservation is cancelled.
- Final payment is due 4 weeks prior to departure.

Deposits were fully or partially refundable, depending on when the travel agent contacted the cruise line (in the late 1980s and early 1990s, virtually all cruise line bookings were made through travel agents).

For individual bookings, handicapping formulas might have forecast materialization at 100 percent after the initial deposit was received. This tended to be an overestimate of the actual materialization, as some bookings would typically be cancelled after the initial deposit was paid.

As cruise lines frequently offered greater discounts to groups, it was common practice for some travel agents to make group bookings on a speculative basis. Groups typically reserve cabins on sailings before individuals. High volume travel agents specializing in selling cruises would create "groups" in anticipation of having customers who would want to sail on the same departure. Doing so gave these travel agents greater flexibility in deciding what price to communicate to the passenger, as travel agents only needed to pay cruise lines the net amount due on a booking. Travel agent commissions and any discounts applying to the booking were not remitted to the cruise line.

Consequently, many group bookings would eventually yield no passengers or fewer passengers than the travel agent initially communicated to the cruise line. The handicapping formula described above reflects this as it initially predicts only 10 percent materialization. On a ship with 700 cabins, at various dates prior to departure, it would not be unusual for group bookings to be recorded for as many as 500 cabins, yet end up using only 150 or 200. Indeed, because the overall materialization rate for groups was so low, on many sailings the number of group cabin requests accepted by a cruise line could be larger than the number of cabins on the ship! To manage its inventory effectively, cruise lines had to forecast how many group passengers (and the number of cabins) would actually materialize from the group bookings.

The group handicapping formula was a rule-of-thumb that generally provided reasonable materialization estimates at an aggregated level for the year, but there were many individual sailings where it led to poor estimates and ultimately to drastic and undesirable pricing actions. Sometimes, higher than expected group materialization led to significant upgrading of group passengers; significant revenue dilution occurred as more expensive cabins could not be sold to customers prepared to pay for them. On occasions, less than expected group materialization led to high levels of discounting within a few months of sailing.

By 1988, some of the larger cruise lines recognized that they were significantly limiting their revenues and profits by continuing to rely on these rudimentary forecasting methods. Also, the introduction of larger ships resulted in a stronger emphasis on obtaining groups to ensure that these ships sailed full. Consequently, inaccurate estimates of group materialization were becoming more costly.

Ozer & Phillips / The Oxford Handbook of Pricing Management 12-Ozer-ch12 FIRST PROOF page 213 11.1.2012 1:17pm

Some cruise lines began actively investing in designing and developing more advanced forecasting methods. Statistical models that considered the particular characteristics of group and individual bookings were developed. These models replaced the handicapping formulas that treated all group reservations and all individual reservations the same. Such models examine the specific composition of bookings on a ship and forecast group materialization based on factors such as type of group, travel agency, itinerary, season, and payment status. More accurate materialization forecasts of groups and individuals resulted, enabling better management and pricing of cabin inventory. These models are still state-of-the-art.

12.6.2 Early booking discounts

Early booking discounts were certainly available in the 1980s. Generally, these discounts were available to passengers who booked their cruise more than 12 months in advance. But booking early was no guarantee of getting a good price. Indeed, fare reductions far larger than the early booking discounts typically became available as the time to the cruise decreased.

As increasingly large discounts became more prevalent, savvy cruise passengers realized that bargains were to be had if they were willing to wait. And they waited. So much so, that cruise lines began to realize that something needed to be done. As early bookings dropped off and passengers demonstrated a greater willingness to book closer to departure date, cruise line staff grew increasingly nervous 6–9 months out, as they watched the number of unsold cabins on a cruise reach levels far greater than was comfortable. This led cruise lines to discount even further close in to departure, reinforcing the willingness of cruise line passengers to hold back on booking a cruise until closer to the departure date. A rather vicious cycle was taking hold and it did not bode well for the cruise lines.

Recognizing the benefits of getting passengers to book earlier, Royal Caribbean introduced its *Breakthrough Rates* program in 1992. Under this program, the lowest rates that were to be available for a cruise were offered when the cruise line began accepting reservations for that departure and over time, as sufficient bookings were received, the rates went up in pre-determined and specified increments. Communications from the company went out that booking earlier meant getting a better price. Other cruise lines soon adopted similar programs.

What was particularly innovative about the Breakthrough Rates program was that it began to systematize cruise line pricing tactics and discounting procedures. Potential customers received some assurance that fares would not decrease after they made their purchase, leaving them to feel foolish and regret having made the purchase. The new approach, however, made it even more important for cruise lines to manage their pricing decisions, as they were now faced with the decision of how deep a discount to provide to early booking customers and when those fares should be raised. Fortunately, for the cruise lines, their use of many cabin categories to sell cabins at a wide variety of prices, in combination with offering guarantees and upgrades on a selective basis (e.g. only in some markets) eased some of this pressure. Monitoring demand for each departure, cruise lines used these programs to stimulate demand when they mistakenly increased prices too quickly and inadvertently slowed demand for a cruise by more than anticipated. The integrity of the pricing structure was maintained, even while pricing promotions were offered.

12.6.3 Revenue management expands

By the mid to late 1990s, cruise lines were investing more resources towards improving their pricing decisions. Cruise lines were no longer willing to rely on manual review of booking activity reports as the primary basis for deciding where and when to direct promotional activity, as well as for determining the level of discounts to offer. Cruise lines undertook the design and development of data-driven models graphically depicting the historical impact of pricing actions on demand levels and quantifying response variation. State-of-the-art graphical interfaces supporting interactive queries at varying levels of detail were used.

These decision support tools provided great value helping cruise lines to better determine where and when to carry out promotions. By the late 1990s, virtually all the major cruise lines had launched revenue management initiatives. Some cruise lines focused on developing better descriptive decision support tools. Others were more ambitious, funding development efforts to more systematically review prices that included prescriptive tools providing recommendations of what actions to take.

As these decision support tools took greater hold in the industry, pricing analysts were given greater responsibility for making decisions. By 2000, pricing analysts at some cruise lines were using decision support tools recommending where and when price promotions should be launched or halted, as well as the magnitude of such promotions. The pricing decision support tools were far more advanced than those of 10 years earlier. In addition, pricing analysts also found themselves with greater responsibility and authority than ever before.

At many cruise lines, suggesting that the CEO or President meet with staff to discuss, review, and oversee specific tactical actions for each sailing would probably now be seen as a humorous and not too serious suggestion. But recall it was not too long ago that such meetings were common. Between the late 1980s and early 2010s, cruise line pricing strategies, tactics, organizational structure, and analytical methods have been greatly transformed.

12.7 So what else is there to know?

As is the case for many industries, there are a number of pricing issues specific to the cruise industry. To conclude this chapter, we present some curious and “fun” facts.

12.7.1 Lifeboat capacity

Occasionally, a ship departs with empty cabins despite there being sufficient demand to fill the ship. The maximum number of passengers legally allowed to sail on a cruise ship is generally less than the number of beds on the ship. Passenger capacity is limited by a ship's lifeboat capacity, which is generally more than the double occupancy carrying capacity. Many cabins, however, can accommodate 3, 4, or 5 passengers. Further, the fares for the third, fourth, and fifth person in a cabin are virtually always less what is paid for the first two passengers. Consequently, if too many reservations with three to five persons in a cabin are accepted, a cruise ship may have to sail with empty cabins. As this means reduced revenue, the number of bookings with more than two persons in a cabin needs to be closely monitored.

12.7.2 Fill the ship, but at what cost?

Transporting air–sea passengers to the port of embarkation at minimal cost while meeting customer service requirements involves many decisions (Lieberman and Dieck 2002). On one Caribbean cruise that had a number of empty cabins close to departure date, group sales was very proud of their ability to obtain a large group from Canada to occupy many of those cabins, although a fairly significant discount had to be given to the group. Unfortunately, group sales neglected to review the reservation request with the air–sea department. By the time the reservation was communicated to air–sea staff, the only seats still available on flights to transport the group were in first class. The cost of the group's airfare to the cruise line was greater than what the group paid to the cruise line for both airfare and the cruise. The cruise line must have hoped that those passengers spent a lot of money on board the ship!

12.7.3 It's a matter of perspective

Today, cabins with balconies are commonly found on newer ships. These cabins are priced at a premium relative to cabins without balconies. Passengers value having a private balcony and they are willing to pay extra for that privilege. While that may not be surprising, cruise line executives did not always have that perspective or understanding. In the mid-1990s, balconies were still relatively rare. When one cruise line introduced a new ship that had many cabins with balconies, the cabins with balconies were priced lower than cabins without. The logic governing this decision was based on the fact that the cabins with balconies were smaller than those without the balconies (the balconies were actually cut into the cabin space). Rather than consider the pricing issue from a customer value perspective, the cruise line approached it from an engineering perspective. Less interior cabin square footage meant charging a lower price. It was not long before the cruise line realized its mistake (with a little bit of help from pricing consultants) and reconfigured its pricing structure. Unfortunately for the cruise line's bottom line, although fortunately for many lucky passengers, the cabins with balconies did provide an incredible bargain for those who booked sailings before the pricing mistake was corrected.

In addition, I would like to thank all of my colleagues at Veritec Solutions for allowing me the time to write this chapter; not only did it give me an opportunity to document some of my experiences over the past 20 years, it was a great deal of fun. Of course, any errors or inaccurate assertions remain my full responsibility.

References

Business Research and Economic Advisors (BREA) (2007) *The Contribution of the North American Cruise Industry to the U.S. Economy in 2006*. Exton, PA: Prepared for Cruise Line International Association.

Carnival Cruise Lines (1992) *Carnival Cruise Lines Brochure. 1/2/92–6/11/93*, Miami: Carnival Cruise Lines.

Cross, Robert G. (1997) *Revenue Management: Hard-Core Tactics for Market Domination*. New York: Broadway Books.

Cruise Lines International Association (CLIA) (1990) *The Cruise Industry: An Overview, Highlights Edition*. New York: CLIA.

Cruise Lines International Association (CLIA) (2007) *Cruise Industry Source Book, 2007 Edition*. Fort Lauderdale, FL: CLIA.

Cruise Lines International Association (CLIA). (2008) *2008 CLIA Cruise Market Overview, Statistical Cruise Industry Data Through 2007*. http://www.cruiseexperts.org./resources/file/US%202008%20CLIA%20stats.pdf. accessed November 1, 2011.

Dickinson, B. and Vladimir, Andy (1997) S*elling the Sea*. New York: John Wiley & Sons.

Disney Cruise Line (1998) *Disney Cruise Line Brochure, April 1998–December 1998*.

Disney Cruise Line (2002) *Disney Cruise Line Brochure, 2002–2004 Vacations*.

Lieberman, Warren and Dieck, Tamara (2002) "Expanding the Revenue Management Frontier: Optimal Air Planning in the Cruise Industry", *Journal of Revenue and Pricing Management* 1/1: 7–24.

McLeod, Rod (2008) Personal Communication.

Royal Caribbean International (2008) *Alaska 2009 Cruise & Cruisetour Vacation Planner*. Miami: Royal Caribbean International.