

Hospitality Revenue Management

Concepts and Practices



Peter Szende
editor



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Edited by

Peter Szende

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ABOUT THE EDITOR

Dr. Peter Szende has over 25 years of management experience in the hospitality industry in both Europe and North America. He joined the Boston University School of Hospitality Administration as Assistant Professor in 2003. He was promoted to Associate Professor of the Practice in 2010. He was promoted again in 2017 to Professor of the Practice. Between 2016 and 2019, he served as Associate Dean of Academic Affairs.

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Adam Snitzer

Adam Snitzer is President of Peak Revenue Performance, Inc., an international pricing and revenue strategy consulting firm with expertise in consumer products, financial services, and travel, particularly cruise lines, riverboat companies, and tour operators. For sixteen years, he occupied senior revenue management positions at cruise lines such as Royal Caribbean, NCL, Cunard, Costa, and Seabourn. He lectures on cruise line revenue management and writes frequently on pricing and revenue management topics.



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FOREWORD

It is hard to believe that both Dr. Peter Szende and I got our starts in the hotel and restaurant business before revenue management was “invented” in the industry and certainly before the term was coined. As the notion of yield management has given way to the larger concept of revenue management and as terms such as “opaque rates,” “rate parity,” “dynamic pricing,” “BAR,” and “LRA” have entered the hospitality lexicon, it has become more and more important for students, professionals, and academics to become experts in this still-emerging field.

When I joined the Boston University faculty in 2011, Dr. Szende was working hard on developing a series of hospitality management learning modules centered around food and beverage management. He and I commuted to home from work together nearly every night; the one-mile walk and conversation was interrupted only by a stop at the grocery store for the daily samples, and we would remark on how and why they could price bananas at only 19 cents each (29 cents for organic)—an interesting revenue management question!

Our conversation on this walk usually focused on the progress of his module project and what major project he would pursue next. As a then 25-year industry practitioner who had just made the transition to academia, I was keenly interested in identifying areas that were important to practitioners but had not yet been fully explored by scholars. I had a particular interest in those topics that were not necessarily taught (or taught well) to students in hospitality programs. Dr. Szende’s mind was, as usual, working at a feverish pace, looking to apply his many years of direct operational experience to solving hospitality-related problems.

He described for me, many times, what ultimately became this textbook, which brilliantly combines, as the title indicates, both *concepts* and *practices*, making this a single-source resource for practitioners, faculty members, and students. He has identified, hounded, and, in some cases, harassed many leading experts in their respective subject areas to deliver their expertise in a manner that expands their reach far beyond their current roles. These experts include seasoned industry professionals as well as relative newcomers to the revenue management field, including many of whom were Dr. Szende's students, others who are adjunct faculty members at a number of leading institutions, and others who are bringing to light, for the first time formally, revenue management insight from additional allied hospitality segments.

Chapter 1 begins with a broad introduction to hotel revenue management. From this very first chapter, care is taken to include the numerous pedagogical elements outlined in the Editor's Preface and which should be of tremendous benefit to students learning from this textbook.

The various fundamentals of hotel revenue management are then presented in a logical sequence, although each chapter serves as a self-contained presentation of a given topic. This sequence begins with Chapter 2 on the most fundamental revenue management concept, pricing hotel guest rooms. As we have learned over time, the way hotels mix and stack business is critically important; hence, Chapter 3 introduces the concept of hotel segmentation.

Further investigation into hotel segmentation leads to distribution channels in Chapter 4 as optimal building of each segment and the overall hotel is dependent on reaching the right audience in the most effective manner. This then transitions into Chapter 5 with the evolution of competitive analysis and the creation and use of STR reports, which, coming from someone who recalls counting cars in the parking lots of roadside motels for feasibility studies in the mid-1980s, have been a most welcome addition to the industry.

With the current environment in mind, there is likely no chapter more useful than Chapter 6, which details how to translate the voluminous data produced by revenue management systems and its focus on revenue

forecasting and budgeting. Chapter 7, which provides the tools for both *pre-hoc* and *post-hoc* performance analysis, contains novel material that can be readily applied to real-life scenarios. Chapter 8 then concludes the hotel revenue management portion of the text with practical ideas on how to benchmark performance.

Among the unique features of this textbook is the inclusion of a comprehensive series of chapters on restaurant revenue management. This section of the text begins with basic concepts in Chapter 9 and then walks through advanced concepts related to demand in Chapter 10 and supply in Chapter 11. These chapters provide the most comprehensive overview of restaurant revenue management to appear in print to date, and the chapters included provide this in a logical and thoughtful progression that can add a current view to any restaurant management curriculum.

The final chapters of the text expose the reader to additional areas of revenue management that have only recently been codified. The presentation in Chapter 12 of how best to optimize function space has become a critically important tool in an environment where group demand growth is often exceeding transient demand growth, and where properties are either functionally or economically limited in their ability to expand their meeting space.

Significant ancillary spend, fixed embarkation and debarkation dates, and the ability to physically move the product have resulted in revenue management in the cruise industry developing its own unique systems and vernacular as explained in Chapter 13. Chapter 14 moves on to present both a framework for applying revenue management concepts to new areas as well as identifying opportunities for applying these principles to golf and spa operations.

Finally, Chapter 15 brings everything full circle and provides the hotel owner's perspective on the revenue management process. After all, what use is maximizing revenue if it does not ultimately improve profit?

When I made the decision to return to the industry in 2013 after a six-year absence, one of the areas where I knew my skills had fallen behind was understanding the dramatic evolution that was occurring in the revenue

management area. Quite frankly, it's been a challenge to keep up with it, and I had never identified quite the right resource to learn from and use to teach within my own organization. Fortunately, Dr. Szende has recruited outstanding industry leaders as authors and gathered the information necessary to prepare and produce this exemplary textbook on the topic that will undoubtedly be utilized by students of all varieties in universities and companies throughout our great industry.

—**Barry A.N. Bloom, PhD**
President and Chief Operating Officer
Xenia Hotels & Resorts, Inc.

EDITOR'S PREFACE

Hospitality Revenue Management: Concepts and Practices provides an in-depth review of basic concepts and best practices of hospitality revenue management. Unlike standard textbook construction, in which chapters build upon the knowledge gained from previous chapters, each chapter of this book is a self-contained view of a specific aspect within hospitality revenue management. Our aim is to offer a comprehensive and contemporary textbook to effectively meet the curricular requirement of undergraduate and graduate students. The book can also be used as a reference for practitioners and as a text for executive education programs.

Through its real-world approach, students are placed in the role of a revenue manager striving to succeed in an ever-changing business environment.

This book has been designed with distinctive features:

- ***A self-contained structure that allows for greater teaching flexibility***

Because each chapter is self-contained, the sequence of chapters can be altered to fit any class timeline, and the material can be used in a variety of formats to fit personal teaching preferences or time constraints of individual courses. Although chapters are standalone, our goal has been to develop a product that follows a logical flow of ideas both within each chapter and from one chapter to the next.

- ***Multi-author, collaborative approach***

Given the constant changes in the field of revenue management and to ensure that the book content would be relevant and include the most updated

information, multiple authors contributed to this textbook. The purpose of this was to capture the collective expertise of contributors in the hospital-ity revenue management field yet remain cohesive in content and style. By engaging a number of topic experts, the expertise each contributor brings surpasses what any single author could have achieved.

Once we identified the contributors, we established the emphasis of each chapter and the overall organization of the book. The uniform orientation of the text reflects the ideas and styles of individual contributors, but we have also been able to integrate the chapters into a coherent whole.

• ***Pedagogical features that keep students engaged and challenged***

Distinguishing pedagogical features define the overall tone of any textbook. Although the chapters in this book are standalone, a uniform pattern of pedagogical aids across all chapters has been designed to create a consistent learning experience, while accommodating a variety of teaching styles.

Learning Objectives: Each chapter opens with a list of learning objectives that serve to focus the reader's attention on key concepts.

Key Terms: Key terms are emphasized in bold when first used in the text and listed at the end of each chapter in the glossary.

Boxed Features: Each chapter includes five standard, boxed pedagogical features. These boxes are intended to briefly depart from the flow of the chapter in order to expand upon the concepts presented and enliven the discussion.

- ***So What?***—An opener designed to draw the student into the chapter and stimulate them with a critical-thinking question
- ***Think Historically***—A reflection on historical events intended to promote a deeper understanding of the material and demonstrate ways in which past events relate to current management issues.
- ***Real People***—A presentation of difficult situations that real managers have faced, which helps students understand and relate chapter content to managerial practices.

- **Pros/Cons**—Features that present opposing views on a relevant issue and prompt debate or discussion.
- **Seeing Further**—A theme that reflect the latest hot topics or professional concerns related to the topics discussed.

Spreadsheet Exercises: Proficiency with spreadsheets is a great advantage to revenue managers. In order to develop students' computational skills, each chapter includes two practical problems that can be solved using Excel.

Discussion Questions: Questions challenge students to think critically about the material.

Applications: Short case studies allow students to analyze and dissect chapter concepts through real-life scenarios.

Team Activity: Each chapter includes an experiential activity that will assist learners in the practical application of the chapter's concepts.

Internet Activity: Designated internet activities link the chapter and the Internet to create a dynamic learning environment.

Glossary: The glossaries provide students with an accessible reference tool and a list of key concepts that they should master.

The password protected instructor area is available for qualified instructors only. It includes:

- **Instructor's Manual:** The comprehensive instructor's manual contains answers/solutions for all discussion questions, problems, spreadsheet exercises, and applications.
- **Test Bank:** The exam test bank contains 20 multiple choice questions for each chapter (10 easy and 10 advanced).



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We are especially grateful to Nicholas Catalfamo, Director of Revenue Management at Highgate, for serving as our editorial assistant throughout the publication process.

We owe special thanks to Timothy Kenney, Director of Revenue Management at Kimpton Hotels & Restaurants, who served as an early reviewer of the manuscript.



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CHAPTER 1

Hotel Revenue Management: An Introduction

Carolyn Fredey and Roy Madhok



OVERVIEW

Revenue management is the art of selling the right inventory to the right customer at the right price at the right time to yield optimal profit. The practice of revenue management can be applied to a multitude of industries that share similar characteristics, including high fixed costs, fixed capacity, perishable inventory, variable demand, price sensitivity, and segmentation. In this chapter, we will specifically discuss the management of hotel room inventory, but the same principles can be applied to other hospitality sectors such as airlines, cruise lines, rental cars, catering, and restaurants.

LEARNING OBJECTIVES



After studying this module, you should be able to:

- 🎯 Underline the fundamental concepts of revenue management in order to optimize hotel revenues and profit
- 🎯 Identify the components of the revenue cycle in order to recall the economic relationships at play
- 🎯 Define segmentation, channel mix, and the differences in buying behavior
- 🎯 Calculate basic room statistics, market share, and profit measurements
- 🎯 Demonstrate a clear understanding of organizational structure as it relates to revenue management
- 🎯 Articulate revenue management strategy with various industry stakeholders

OUTLINE

Introduction

Qualifications for Applying Revenue Management

Segmentation

- Buying Behavior
- Optimal Mix of Sales
- Channel Management

Performance Metrics

- Room Statistics
- Occupancy
- Average Daily Rate (ADR)
- Profitability
- Market Share
- Forecasting and Budgeting

Inventory Management

Communication

Daily Interaction with Property Operations and Sales

Discussion Questions and Applications

INTRODUCTION

Hotel revenue management (HRM) focuses on how a hotel can produce the highest amount of “profitable” revenue given its fixed number of rooms to sell and varying levels of demand. Traditional **yield management** would suggest that HRM is only necessary when demand exceeds capacity and is limited to the practice of inventory allocation of already established price points and the “opening and closing” of qualified rates (rates that a guest must qualify for, such as corporate negotiated rates). However, in the last two decades, with escalating rate transparency and the tools available, the practice of HRM has evolved into a more comprehensive profession with more involvement beyond traditional yield management. HRM is now fully integrated with all sales and marketing disciplines to optimize pricing level, segmentation, and distribution **channel** mix in several

organizations. Proper communication of the HRM strategy throughout the organization is paramount, with clear and concise reporting and regular strategy meetings.

Mastering the basic principles and components of HRM is critical in building a strong foundation to later apply to more advanced revenue management applications, such as demand forecasting, segment specific pricing, channel management, and strategic inventory management. Obtaining a clear picture of the hotel revenue management discipline and gaining the necessary tools to perform the basic and widely adopted performance metrics will be the focus of this chapter.

The goal of any business is to create a valuable product or service and to maximize profits through revenue generation and cost control. Revenue generation can be accelerated with the skillful combination of guest satisfaction, demand creation, and optimization commonly referred to as the **revenue cycle**. Revenue management is primarily tasked with generating the strategies and tactics that will optimize demand.

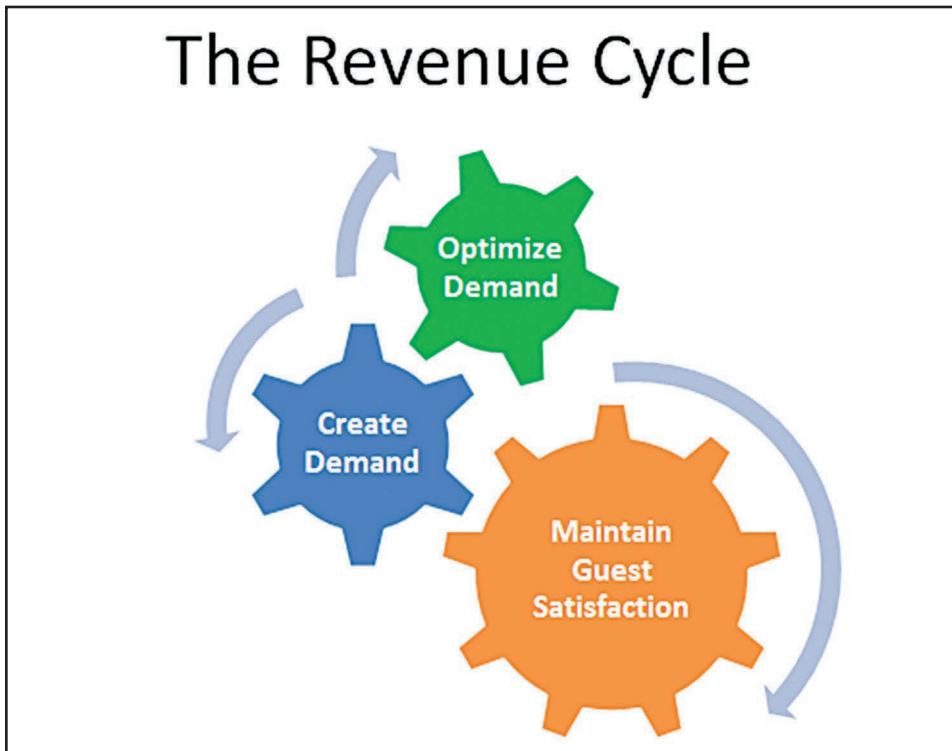


Figure 1.1: The Revenue Cycle

HRM optimizes demand by selling the right room to the right customer at the right price at the right time to yield optimal profit.

The **revenue manager** (RM) is not directly responsible for executing against guest satisfaction or creating demand but is reliant on these functions and therefore must be involved in business development and stay informed.

QUALIFICATIONS FOR APPLYING REVENUE MANAGEMENT

There are several characteristics that exist in hotels and other industries that make it necessary to apply revenue management in its operations:

Fixed Costs versus Variable Costs

- Hotels generally have high fixed costs in proportion to their variable costs (mainly labor). The hotel must absorb these fixed costs regardless of the occupancy level. **Fixed costs** may include mortgage, insurance, property taxes, management salaries, and benefits. In addition, fixed costs include any hourly wages, administrative expenses, and utilities expenses that must be maintained even if the hotel is empty. **Variable costs** for guestrooms include the expense of labor and supplies to service the room after use, the expense of the utilities associated with the guest's occupancy, and a designated cash reserve toward a capital budget for replacing furniture, generally every 3-7 years, as part of a regularly scheduled refurbishment (Lesure, 1983).

Fixed Capacity

- A hotel has a fixed number of rooms or “keys” that are sold on a nightly basis. Building new rooms may not be feasible, and construction takes considerable time, so for all intended purposes, the RM can only sell the limited amount of product available.

Perishable Inventory

- If a hotel room goes empty on any given night, the hotel has lost the sale. Given the relatively low variable cost, it is very compelling

to sell a room rather than let it go empty, even at a price discount. Each unsold room is considered **spoilage**, and each room sold for less than what could have been gained is lost revenue.

Variable Demand

- In most cases, a hotel has fluctuating demand by day of week and season, resulting in the need of the revenue management application. In Chart 1, it is clear that this hotel has more demand on certain days of the weeks. The total demand including excess demand above capacity is often referred to as **unconstrained demand**. For example, Sunday and Monday lag the demand on Tuesday and Wednesday. To manage the variable demand, a revenue manager may apply revenue management tactics such as price differentials and length-of-stay restrictions. Without strategies in place, the hotel risks selling out the rooms on Tuesday and Wednesday too quickly and will not be able to accommodate all the reservations requests for arrivals on Sunday and Monday.

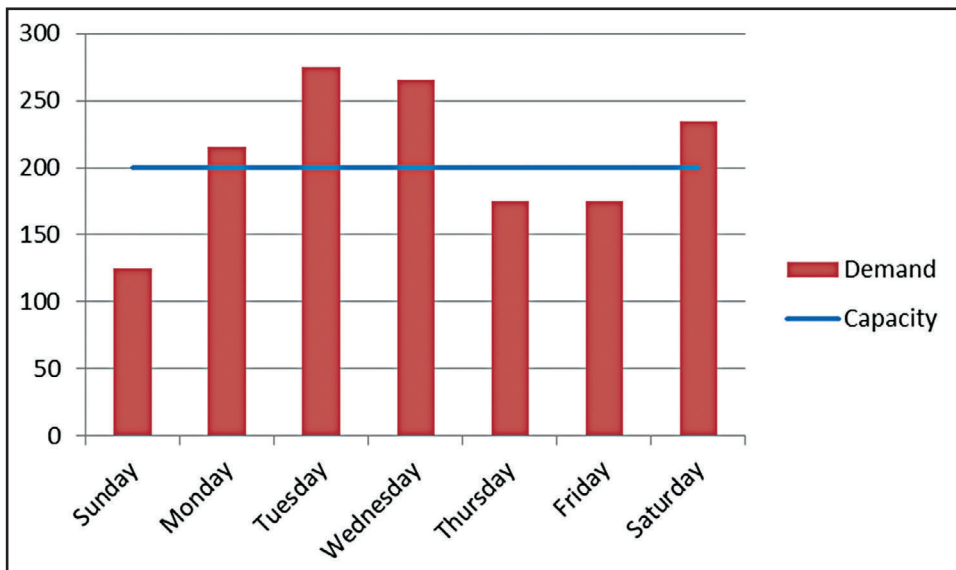


Chart 1

THINK HISTORICALLY

This ad for the Hotel Boswell appeared in the *Tulsa Daily World* newspaper in 1917.

TULSA DAILY WORLD, SUNDAY, JUNE 17, 1917.



THE HOTEL BOSWELL

A new popular priced hotel with seventy rooms, eighteen with private bath, hot and cold water, private clothes lockers and other conveniences and electric lighted. Two fire escapes, two stairways, back and front, and first-class elevator service.

Our Location

We are located in the heart of the shopping and banking district—123 South Main Street—near Second and Main Street, where you can reach any of the department stores, as well as other leading business houses, within two or three blocks. From the windows of nearly any room you are able to locate most any business concern; this fact is due to the prominent location of our building.

Our New Building

Was built by A. Y. Boswell especially for hotel purpose. Has outside rooms and wide halls throughout the building. Two stairways and one elevator. Owning the building and with no rent to pay enables us to give you the very best rooms in the city at

Popular Prices

Our prices range from 75c per day to \$2.50. Per week \$3.50 to \$12.50. The \$2.50 rooms are large and airy with private bath. Rooms are equal to those of any hotel. Our private bath rooms, single \$1.50 to \$2.50; double \$2.50 to \$4 per day. Per week rooms without bath \$3.50 to \$8; double \$6 to \$10. With bath \$8 single to \$15 double.

Our Equipment is of

Source: *Tulsa Daily World*, June 17, 1917, p.8.

Questions to Consider:

What are your initial impressions of The Hotel Boswell's revenue management efforts?

How would you compare this listing to current hotel price listings?

SEGMENTATION

Since different guests are willing to pay a different price for the same product, hotels have to create ways to provide their rooms at different prices. This practice, known as **segmentation**, is where revenue managers classify and

target customers in specific groups based upon their characteristics, behaviors, and preferences (Talluri & van Ryzin, 2004). Segments are in all industries: economy and luxury cars, student discounts at museums, wholesale discounts for food, corporate discounts for airlines, and others.

Segmenting customers allows a revenue manager to take advantage of variable demand by targeting multiple groups of people. Price segmentation ultimately allows a revenue manager to lower the entry price to buy a room while also offering the same room to other guests for a higher rate (Smith, 2012).



SO WHAT?

What are some other businesses that could use revenue management that currently do not?

What characteristics exist that would make revenue management fit those business models?

Hotels track and target three major segments in order to fully capture demand: Transient, Group, and Contract.

- Group: Rooms sold in minimum blocks of ten or more
- Contract: Rooms guaranteed as deemed by a signed contract such as airlines
- Transient guests however, are considered to be anything not a part of group or contract sale (Hayes & Miller, 2011) and are those guests that are traveling independently and their decision for which hotel to book are ultimately up to them.

Group and contracted rooms are, however, decided in bulk, for the most part not taking the unanimous decision of all people staying within the negotiated blocks.

Hotels as a whole are tasked with achieving the optimal amount of each segment at the right price, known as the optimal mix. For example, in an

airport area, hotels will likely have significant airline contract volume; in a suburban area where there is little transient demand, there will likely be significant group volume; and in high-demand areas for individual travel, there is likely mostly transient occupancy.

Revenue managers work with sales and marketing to shape the segmentation of the hotel, where revenue management sets prices and guides the sales team on how much of each segment would be best for the hotel.

As hotel revenue management has become more sophisticated, so has price segmentation. Hotels have identified the need to break out Transient, Group, and Contract into sub-segments in order to have a targeted pricing strategy.

Table 1.1: Examples of Transient and Group Sub-Segments

Segment	Sub-Segment	Description
Transient	Retail	Standard rates being offered through the hotel directly to all guests
Transient	Online Travel Agent (OTA)	Standard rates being offered through online travel agents such as Expedia, Booking.com, Priceline.com, etc.
Transient	Government	Guests traveling for business but who work for the government and can show valid government identification
Transient	Opaque	Guests who book through websites such as Priceline and Hotwire, where hotels offer steeply discounted rates without disclosing the hotel prior to sale
Group	SMERF	Groups booked that fit into the following classifications: Social, Military, Education, Religious, Fraternal
Group	Preferred Corporate	Corporations book groups for meetings and events
Group	Government	Different governments will often travel to host meetings and events

BUYING BEHAVIOR WITHIN SEGMENTS

Every segment of customers behaves differently, and all have varying levels of price sensitivity. Therefore, revenue managers need to understand buying behavior within segments to make sure they are not discounting those guests willing to pay the most. The ability to charge different customers different rates comes through being able to create **rate fences** or **segmentation hedges**. Rate fences take five basic forms: physical, controlled availability,

customer characteristics, transaction characteristics, and product line (Dolan & Simon, 1996).

Table 1.2: Rate Fence Basic Forms

Fence	Description
Physical	Offering varying room types: King Bedded Rooms, Suites, Two Beds, etc.
Controlled Availability	Setting an advance purchase window of 90+ days with a 20% discount to entice early bookers looking for a discount
Customer Characteristics	Offering discounts to leisure guests through AAA and senior discounts
Transaction Characteristics	Making a reservation fully non-refundable upon booking
Product Line	Offering different versions of the same product, i.e. King Room with butler service versus without

Source: The table is based on Dolan & Simon, 1997.

For example, hotels understand that corporate guests are not as price sensitive as other guests, given that their company often pays for their stay. Hotel teams are therefore tasked with finding a way to make corporate guests pay more than others for the same inventory. Revenue management and sales therefore work together to price corporate guests higher by offering business travelers free internet, turndown service, and breakfast.



PROS & CONS

While applying rate fences helps revenue management drive RevPAR, there are challenges associated with implementing each type of rate fence. What are the pros and cons of each fence used within revenue management?

This process of including additional services within a rate is called **bundling** and is a key tool used to help revenue managers price particular guests higher than what would be charged to other, less profitable **market segments** (Kimes, 2010). Similarly, revenue managers take advantage of offering AAA and senior citizen discounts to target leisure customers, offering advance purchase discounts for those looking to secure their room very far out, or offering discounts for those traveling in large groups. Groups typically agree to book a certain number of rooms at an agreed-upon rate.

The contractual basis of group rooms allows hotel revenue management to build a base of rooms that they know will materialize. A group booked on any set of dates is referred to as a “group base” and is an integral segment within hotels, providing stability within the hotel and allowing revenue managers to cut back on other lower rated and more unreliable transient segments. Group business for full service hotels in companies such as Marriott International as a whole can represent over half of the hotel’s revenue (Hormby et al., 2010).

OPTIMAL MIX OF SALES

The composition of the various segments staying in a hotel on any particular day, week, month, or year is called **mix of sales** or market segmentation. Two similar hotels can run the same occupancy percentage, but their mix of sales can determine which hotel had a higher ADR and therefore RevPAR. Revenue managers consistently look backward at their mix of sales and critique where they could have cut back on lower rated segments and conversely look and see if there was opportunity to sell more rooms via discount channels to gain RevPAR.

In order to achieve an optimal mix of segments to maximize both RevPAR and profit, hotels have to understand booking patterns, seasonality, customer preferences, and more. Hotel revenue managers know, for example, that corporate clientele are willing to pay the most and typically book closer to arrival because of last minute travel plans. The revenue manager has to understand how many high rated corporate rooms it will sell in the future and therefore has to understand how many low rated rooms to sell to leisure guests in advance. Limiting early leisure bookings and protecting too many rooms for high rated guests can result in discounting last minute high rated guests and leaving rooms empty (See Bodea & Ferguson, 2014, p. 84).

CHANNEL MANAGEMENT

Mix of business can only be considered optimal if *channel management plays a key role in shaping the segmentation*. Segments should not be treated equally given that each segment books through a different source and because each

reservation has a different cost of booking, or **cost of acquisition**. For example, online travel agents charge a **commission** as a percentage of each room sold. Whereas if a hotel sells rooms through their own website, the cost of selling is significantly less (Table 1.3).

Table 1.3: Sample Channel Costs

Channel	Room Rate	Sample Cost/Commission	Net Rate
Brand.com	\$249.00	3.00%	\$241.53
Reservation Center	\$249.00	6.00%	\$234.06
GDS (Global Distribution System)	\$249.00	11.00%	\$221.61
OTA (Online Travel Agency)	\$249.00	15.00%	\$211.65

In Table 1.4, both Hotels A and B earn the same amount of revenue, but Hotel B produced more through the OTA channels. With higher costs compared to the retail segment, the OTA segment and channel makes an immediate impact on the profitability of Hotel B.

Table 1.4: Segment and Channel Relationship

Hotel A				Hotel B					
Segment	Rooms	ADR	Revenue	Segment	Rooms	ADR	Revenue	Segment Cost %	Hotel B
Retail	50	\$210.00	\$10,500.00	Retail	30	\$210.00	\$6,300.00	5.00%	\$525.00
OTA	30	\$210.00	\$6,300.00	OTA	50	\$210.00	\$10,500.00	20.00%	\$1,260.00
Total	80	\$210.00	\$16,800.00	Total	80	\$210.00	\$16,800.00		\$1,785.00

A hotel that optimizes both segmentation and channel mix will be a hotel that drives occupancy, ADR, RevPAR, and most importantly, profit. In recent years this segment and channel relationship has been a bone of contention to ownership groups as there has been a visible escalation of overall distribution costs for the hotel industry as the channel mix of OTAs has increased. The difficulty in managing channel mix is the existence of **rate parity** agreements, where hotels are forced to offer the same pricing and, in nearly all cases, the same availability. While the revenue manager would like to drive more mix into **brand.com** (the brand or hotel's own website), there is a compelling case that providing rate parity across channels increases good will and brand equity.

QUESTIONS TO CONSIDER

What are some strategies to increase production on brand.com?

Is rate parity a good thing across all channels?

What are some arguments for and against rate parity?

PERFORMANCE METRICS

Hotels as a business have metrics that are important to the overall business performance. Revenue managers must identify, track, and improve those metrics that matter most in terms of revenue management, including room statistics, house profit, market share, and forecast accuracy.

Room Statistics

In hotel revenue management there are a growing number of key performance indicators (KPIs) that help revenue managers measure their effectiveness. The core of hotel revenue management revolves around five indicators: occupancy, average daily rate (ADR), **revenue per available room (RevPAR)**, revenue, and of course, profit.

The hotel typically will **benchmark** against itself and its **competitive set** in terms of overall numbers and segment. Market share is best described by how the hotel's room statistics stack up against the competitive set.

Occupancy

As discussed earlier, perishability in the hospitality industry dissolves prospective revenue once an available room goes unsold. Hotels measure occupancy levels by using occupancy percentage, defined as the number of rooms occupied of the available inventory. For hotel and market reporting, typically only occupancy that is paid (which removes occupied rooms that do not have any revenue associated, otherwise known as compensatory or simply, "comps"). Therefore we can simplify paid occupied rooms as "sold rooms."

$$\text{Occupancy Percentage} = \text{Sold Rooms} / \text{Available Rooms}$$

Example:

200 sold rooms / 250 available rooms = 80 percent occupancy

Occupancy levels also dictate various room statistics that impact cost.

- **Arrivals:** The amount of rooms set to arrive
- **Departures:** The amount of rooms that will or have checked out
- **Stayovers:** Rooms that occupy the room overnight and for subsequent nights

Revenue managers not only control occupancy percentages by selling rooms but also control the **length of stay (LOS)** by restricting reservations to a minimum number of nights. For two hotels with the same overall occupancy percentage, the hotel with a significantly longer LOS can benefit from reduced costs associated with not having to clean the room each day, having to purchase fewer amenities, and the ability to control other variable expenses associated with occupancy.

Average Daily Rate (ADR)

Average daily rate (ADR) is the average price that rooms are sold for during any time period. The importance of ADR is the theoretical absence of a ceiling on how high this metric can climb. In some cases, it is the only way a hotel can improve revenue, especially after reaching stabilized occupancy levels. In simpler terms, if a hotel ran 100 percent occupancy on a full year basis, there would be only one way to increase its room revenue: by increasing ADR.

$$\text{Average Daily Rate} = \text{Total Room Revenue} / \text{Total Rooms Sold}$$

Example:

\$45,000 Room Revenue / 200 Rooms Sold = \$225 Average Daily Rate

Revenue per available room (RevPAR) is simply the combination of occupancy and ADR, or revenue generated by each available guest room over a period of time. Another way to consider the metric, RevPAR is the output of balancing the two inputs, occupancy and ADR, to maximize revenue.

Calculation 1 to calculate RevPAR:

$$\text{RevPAR} = \text{Average Daily Rate} \times \text{Occupancy Percentage}$$

Example:

$$\$220 \text{ ADR} \times 86\% \text{ Occupancy Percentage} = \$189.20 \text{ RevPAR}$$

Calculation 2 to calculate RevPAR:

$$\text{RevPAR} = \text{Room Revenue} / \text{Available Rooms}$$

Example:

$$\$37,840 \text{ Revenue} / 200 \text{ Available Rooms} = \$189.20 \text{ RevPAR}$$

Profitability

The goal of any business is to accumulate as much profit as possible. In hotels, **room revenue** is what the hotel receives for the sale for all sales generated relative to rooms. Total revenue in a hotel would consist of room revenue plus any revenue coming from food and beverage, non-room fees, or other outlets.

At the expense of profit, companies or hotels can spend on marketing, advertising, and sales in order to increase revenue. Successful companies and hotels, however, are those that can keep costs low in order to see a profit while still maintaining high revenue levels.

Being an effective revenue manager requires understanding of cost as much as the understanding of revenue. A revenue manager's responsibility is to develop strategies to gather as much revenue as possible while limiting cost and therefore increasing profits.

House profit is defined as the difference in the amount earned and the amount spent, or revenue minus operating cost. The costs used to calculate house profit only consider the variable costs mentioned earlier and any other costs that are managed by the hotel operators.

House Profit = Revenue – Operating Costs

Example:
\$100,000 revenue – \$60,000 cost = \$40,000 profit

Profit margin is defined as the percentage of house profit compared to the revenue source. It is often a key performance goal for a general manager and other key personnel at a hotel. Revenue managers are often incentivized by house profit or profit margin because it ensures that decisions are made to drive profitability.

Profit Margin = House Profit/Revenue

Example:
\$40,000 profit/\$100,000 revenue = 40% Profit Margin

Refer to Table 1.5 below, which revenue manager was more effective? Both Revenue Managers generated the same amount of revenue. However, a hotel that sells fewer rooms at a higher ADR likely can drive extra profit because there are more variable costs with selling additional rooms.

Table 1.5: Revenue Manager Comparison
Revenue Managers A & B with Identical Products and Identical Services

Room Statistic	Revenue Manager A	Revenue Manager B
Rooms Sold	150	120
Average Daily Rate	\$285.00	\$356.25
Revenue	\$42,750	\$42,750

Table 1.6: Examples of Room Statistics in a Profit & Loss Statement

	Year to Date	Budget	Last Year	Variance to Budget	Variance to Last Year
Available Rooms	54,750	54,750	54,750	0	0
Rooms Sold	46,720	45,990	45,260	730	1,460
Rooms Revenue	\$ 6 ,572,500	\$ 7,245,063	\$ 6,545,910	(\$672,563)	\$26,590
House Profit	\$ 3 ,943,500	\$ 4,419,488	\$ 3,993,005	(\$475,988)	(\$49,505)
House Profit Margin	60%	61%	61%	-1.0%	-1.0%
Occupancy	85%	84%	83%	1.3%	2.7%
Average Daily Rate	\$140.68	\$157.54	\$144.63	(\$16.86)	(\$3.95)
RevPAR	\$120.05	\$132.33	\$119.56	(\$12.28)	\$0.49

QUESTIONS TO CONSIDER (Refer to Table 1.6)

The Case of Being “Out of Balance”

Review the profit and loss statement for the hotel. Ask the questions:

1. Did the hotel meet or exceed budget in any categories?
2. Did the hotel meet or exceed prior year performance in any of the categories?
3. What would you contribute to the increase in rooms revenue?
4. Which metric did not improve over the prior year? What are the likely focus areas for the revenue manager?
5. What other data or market intelligence would you like in order to understand the performance?

MARKET SHARE

Market share is the performance metric used to measure how a hotel does compared to a defined competitive set. A **competitive set** is a list of competitors that the hotel ownership and management select in order to measure their results against based upon which hotels are believed to be direct competitors for sales and bookings. Reports are generated by a neutral party and distributed daily, weekly, and monthly. Market share reports go beyond explaining how external factors such as the economy, **citywide** activity, unusual weather, and more affect the hotel and competitors. External factors may increase or decrease revenue for both the hotel and the competitive set, but market share assists us in determining if the hotel’s

success or failure is better or worse than the competitive set and better illustrates whether the revenue strategies employed were successful.

Refer to the sample market share report for examples.

Table 1.7: Sample Market Share Report

Sample Market Share Report			% Change
Occupancy	Property	87.1%	0.0%
	Comp Set	91.8%	2.0%
	Index	94.9%	-2.0%
	Rank	3 out of 4	
Rate	Property	\$306.87	2.0%
	Comp Set	\$260.62	0.0%
	Index	117.7%	2.0%
	Rank	1 out of 4	
RevPAR	Property	\$267.28	2.0%
	Comp Set	\$239.25	2.0%
	Index	111.7%	0.0%
	Rank	3 out of 4	

In the sample market share report in Table 1.7, you will find the key statistics that most market share reports show. In the occupancy section, the property had an occupancy percentage of 87.1 percent this year compared to the competitive set occupancy of 91.8 percent.

Occupancy Index (Market Penetration Index or MPI) =
Hotel Occupancy Percentage / Competitive Set Occupancy Percentage

Example: .87 / .92 = 95.0 percent

The hotel had no change year over year (0.0 percent) while the competitive set gained 2 percent year over year. This then means that the hotel lost -2 percent in share, as they did 2 percent worse versus the competitive set in occupancy compared to last year.

Rate (ADR) and RevPAR read the same way. The property posted an ADR of \$306.87 and the competitive set posted \$260.62. The property was able to grow 2 percent while the competitive set was flat year over year.

Overall, this resulted in a gain in share of 2 percent, an ADR ranking this year of 1 out of 4, and an index of 117.7 percent.

- ADR Index (Average Rate Index or ARI) = Hotel ADR / Competitive Set ADR

Example: \$306.87 / \$260.62 = 117.7 percent

- RevPAR Index (Revenue Generation Index or RGI) = Hotel RevPAR / Competitive Set RevPAR

Example: \$267.41 / \$239.03 = 111.9 percent

- Percentage Change = (Current Value / Previous Value) – 1

The increase or decrease in year over year performance (YoY). The market share report will not include last year numbers but rather show the change YoY.

Example: 117.7 percent Hotel ARI in current year / 115.3 percent Hotel ARI prior year = 2.0 percent



SPREADSHEET EXERCISE 1-1

To Do: Calculate the blue cells in the market share report.

			% Change
Occupancy	Property	88.00%	-2.22%
	Comp Set	w%	0.00%
	Index	97.78%	-2.22%
Rate	Property	\$x	4.58%
	Comp Set	\$225.00	0.00%
	Index	y%	4.58%
RevPAR	Property	\$220.88	2.26%
	Comp Set	\$202.50	v%
	Index	%z	2.26%

A hotel's pricing, strategy, and marketing all dictate the occupancy, ADR, and RevPAR share they garner. Pricing too high will turn away guests, leading to low market penetration. Selling too few rooms instead forfeits market traction, potentially ruining investor expectations on financial return (Smith, 2012).

A hotel that artificially prices itself too low will likely gain market penetration and lose ADR index; this can result in a low RevPAR index and can also perpetuate the image of a low quality product and tarnish brand integrity.

The concept of gaining or losing share is key in hotels and measures the progress a revenue manager is making using strategies to shift demand. Gaining share is when a hotel's occupancy, ADR, or RevPAR percentage change over a period of time is greater than its competitor's percentage change over the same period of time. Conversely, a hotel has lost share in occupancy, ADR, or RevPAR when their percentage change is less than that of the competitive set's percentage change.

REAL PEOPLE

Michael Lopez*, revenue manager in a high occupancy market, shared instances where the market share report was deceiving and required either understanding of real success/failure and how market share data can be misleading.



My hotel has sometimes lost share in occupancy as my occupancy has no room for growth; how can I use the market share report to understand my successes and failures given my inability to grow occupancy share?

Sometimes, my competitive set shows significant gains in occupancy, therefore creating a large loss in my occupancy index over last year and ultimately a large loss in RevPAR index share. What could have happened in the competitive set that the occupancy could gain by so much year over year?

On occasion my competitive set will show an unusually low ADR, causing my RevPAR index to look significantly better than usual. What could have happened out of the norm amongst my competitors?

My results on particular days are often questioned despite strong weekly and monthly performance. Is there credence to the questioning I receive and what should my response be to these questions?

*Name has been concealed

FORECASTING AND BUDGETING

Forecasting and budgeting is a primary task of the revenue manager. Forecasting impacts both the revenue maximization process and the hotel operations team.

The first objective of forecasting is to predict unconstrained demand by segment and day level to enable a revenue optimization process. The revenue manager generally relies heavily on systems for the development of the unconstrained demand forecast. The system forecast uses a combination of historical data, user inputs, and statistical modeling to predict future demand.

Secondly, forecasting must communicate to the hotel operations team how many rooms will be sold on a daily basis and the projected revenue. Preparing the revenue forecast allows the finance department to complete the expense-and-profit forecast, generally done on a monthly basis for the next several months. On an annual basis, the projection process is done in a rigorous manner and includes detailed segmentation so that the hotel can set goals for the following year to present to key stakeholders. This is generally referred to as the rooms budget.

Forecasts and budgets are used as benchmarks for how well the hotel performed. Revenue managers are responsible for critiquing performance against the forecast and the budget. Declines in key metrics versus forecast and budget need to be explained, and strategies are put into place to rectify results going forward.

INVENTORY MANAGEMENT

Inventory management is generally considered the art of “selling the right product at the right time for the right price to the right customer.” It is complex, with the reality of variable demand throughout the year and across a given week of time, as we learned earlier.

With a limited amount of inventory, hotels have no choice but to make the most of what they have. For this reason, it is imperative that each room, and each room type, be sold for the appropriate amount. Offering discounts for rooms with multiple beds when demand is high can be costly for any hotel. Times of the year such as summer weekends or holidays are popular

SEEING FURTHER



With the importance of forecasting, given the direct relationship of the unconstrained demand projection with the revenue strategy, accuracy is critical. Both the system forecast error and the revenue manager's forecast should be measured to track progress. If the forecast error increases, there may be a change in the trend, incorrect data, or human error. As the system forecast plays such an important role and relies on user inputs and overrides, it is recommended that goals be established and managers held accountable.

Mean absolute percentage error (MAPE) expresses accuracy as the average percentage of error across a number of instances. It can be easier to understand than other statistics. For example, if the MAPE is 7 percent, on average, the forecast is off by 7 percent.

The MAPE equation:

$$\left(\frac{1}{n} \sum \frac{|Actual - Forecast|}{|Actual|} \right) * 100$$

Example:

DOW	Forecast Rooms Sold	Actual Rooms Sold	Absolute Difference	Absolute Error %
Sunday	100	110	10	9%
Monday	150	160	10	6%
Tuesday	165	165	-	0%
Wednesday	165	165	-	0%
Thursday	145	140	5	4%
Friday	115	100	15	15%
Saturday	145	165	20	12%
Total	985	1,005	20	2%
			MAPE	7%

It is important to note that in this example that the combined rooms forecast error is 2 percent but the MAPE calculation measures the average error for each instance (n), which is 7 percent.

for family travel and therefore make it important to maximize ADR opportunity for double bedded rooms or suites.



SPREADSHEET EXERCISE 1-2

To Do: Two hotels are listed below with same amount of total rooms and have the same rate for each of the room types. Using spreadsheet software, calculate the total revenue for each hotel.

Room Type	Hotel A		Hotel B	
	Rate	Rooms Sold	Rooms Sold	Revenue
Queen @ \$x Rate		20	20	
King @ \$169	\$169.00	40	20	\$3,380.00
King @ \$179	\$179.00			\$10,740.00
DBDB @ \$199	\$199.00	20	10	
DBDB @ \$x Rate		40		\$11,450.00
Suite Tier 1	\$349.00	20	5	
Suite Tier 2	\$399.00	20	35	
Total		200	200	

1. Which hotel had better inventory management?
2. What could Hotel A have done better? Hotel B?

Revenue managers are tasked with creating a strategy that will set the hotel up for success in the short and long term. Granular details such as room type availability and macro concepts like contractual inventory restraints can have a significant impact on the long-term success of a property. A hotel that allows each account the ability to book the **last room available** will suffer as last minute high rated demand will repeatedly be lost. In the short term, revenue management also has to understand when to **overbook** the hotel and by how many rooms. Cancellations, **no-shows**, and **early departures** all take away from what would have been an occupied room and therefore need to be tracked to determine the overbooking limit.

COMMUNICATION

It the responsibility of revenue management to articulate the hotel's strategies and results to all stakeholders, including the sales team, front office,

ownership, and executive leadership. An effective revenue manager is as well versed in communication as strategy.

Sales Strategy Meeting

The sales strategy meeting, typically a weekly call or meeting, is a revenue management strategy discussion conducted by revenue leadership. A sales strategy meeting consists of critiquing past performance with a variety of reports, analyzing data and strategy for the upcoming 12 months, and coming up with both micro and macro level strategies that will be executed in the near and long term.

Ownership Meetings

Revenue management over time has become the function of the hotel responsible for communicating strategies to improve RevPAR and profit for the hotel. Industry professionals and educators collectively agree that communication skills are the most important skill a recent hotel school graduate can have followed by the ability to improve revenue (Mayo, 2013).

Ownership involvement in hotels can be daily, and therefore it is critical for the revenue manager to understand what the ownership group is looking for and to gauge the level of detail they are looking for. Ownership groups are typically most focused on their return on investment (ROI), revenue, procurement and development (Cullen & Helsel, 2010). Revenue managers have to identify ownership expectations and knowledge level. Some hotel owners may not understand segmentation or unconstrained demand, and it is the responsibility of revenue management to articulate key ideas to ownership.

While ownership understanding and involvement varies, ownership groups typically revolve around performance versus expectations (budget, forecast, and last year) as well as performance versus competitors and the market. Revenue management is also responsible for communicating short- and long-term forecasts that ultimately guide the owners' future business plans (Law, 2004).

Daily Interaction with Property Operations and Sales

As with ownership, the hotel operations and sales team have a varying level of revenue management understanding and have their incentives laid out in

directions that may be contrary to the goals of revenue management. Since sales members are often measured on volume instead of profit, it is the job of the revenue management professionals to stress short-term and long-term strategy focused on profitability (Cullen & Helsel, 2010). This daily interaction ensures that group rates, group contracts, corporate rates, wholesale contracts, and other types of business are all in the best interest of the hotel. The revenue management team also has to convey need areas in terms of e-commerce and marketing, whereas the sales and marketing team needs to focus their efforts so that the channel management efforts can be fully realized.

The interaction with operations is arguably the most overseen portion of revenue management in hotels. Most revenue managers create an **operations forecast** that is used by operations leaders to appropriately staff the hotel. However, beyond the operations forecast, revenue management has little involvement with the operations team.

DISCUSSION QUESTIONS



Question 1: How does the reality of perishability impact pricing?

Question 2: Why is market share utilized in the hotel industry? Is it foolproof? What other metrics would you use to critique performance from an owner's perspective?

Question 3: What is unconstrained demand and why is it more meaningful than an occupancy forecast? If a forecast changes, what strategies must be reviewed?

Question 4: Brainstorm market segments that are targeted in various industries. What new market segments should the hotel industry start to target? Which, if any, market segments in any industry do you see as cannibalizing one another?

Question 5: What would be the process you would go through to forecast a hotel's revenue for the next month? What data would you need and what would you be looking to find out?

Question 6: Given various costs of distribution, would you as the leader of a company decide to eliminate any distribution channels? If not, how would you reduce cost using revenue management?

APPLICATIONS

Case #1:

Please generate room statistics and a market share report based on the following information showing full year results compared to prior year full year:

Property Size: 200 rooms

Comp Set Size – 800 rooms

This Year Data:

Property Rooms Sold – 64,240

Comp Set Rooms Sold – 262,800

Property Rooms Revenue This Year – \$16,124,240

Comp Set Rooms Revenue Last Year – \$59,130,000

Last Year Data:

Property Rooms Sold – 65,700

Comp Set Rooms Sold – 262,800

Property Rooms Revenue This Year – \$15,768,000

Comp Set Rooms Revenue Last Year – \$59,130,000

Please answer the following questions:

1. Is the hotel getting its fair share of occupancy?
2. Did the property gain or lose RevPAR index ?
3. What room statistic drove the results?
4. Would you expect the property to be more or less profitable than last year?
5. What strategies should be employed to grow RevPAR index the following year?

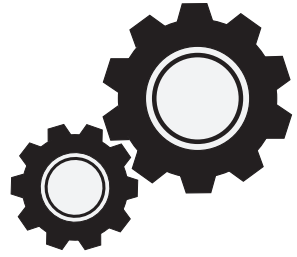
Case #2:

The revenue manager of Hotel Calhawk, a hotel in the downtown area of a major market, has noticed that each year the Sunday, Monday, and Tuesday prior to Thanksgiving have the following problems:

- Guests cancel last minute
- Rooms with multiple beds sell out ahead of time
- Prices for single beds erode as the day of arrival approaches

Please answer the following questions:

1. What 3 different segments would you target to achieve success in occupancy and ADR over these dates?
2. What rate fences would you put in place to avoid the 3 problems that the revenue manager has faced?





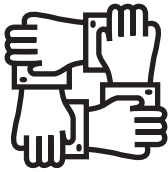
INTERNET ACTIVITY

You are getting married and you are planning your honeymoon. Please shop for rates for a 1-bedroom suite with an ocean view for one resort.

Select one week (Saturday arrival for 7 nights) and compare rates on at least 5 websites and/or search engines, including the resort's website and TripAdvisor.com.

Please answer the following questions:

1. Is the resort's pricing and content consistent across all sources?
2. Were the reviews at TripAdvisor.com and various other sites similar?
3. Which provided the most information for the honeymoon couple?
4. What site would you prefer to book?
5. As a revenue manager, what did you learn and what did you take away from this assignment?



TEAM ACTIVITY

As a team, identify the high and low seasons for a hotel in your area. Contact local hotels, research when conventions are, and do a general search to see when hotel rates are highest and when they are lowest.

1. Pick two seasons as a team.
2. Identify your pricing, inventory, and segmentation strategy for each season. Tie in what you forecast the occupancy to be for that season and what the ADR would be for that time period.
3. Present to another team or the class your strategy as though they are the ownership group.

Be prepared to answer questions regarding:

- How will you limit high cost channels?
- If you are forecasting low occupancy, what strategies can you put in place or what can the hotel do to garner more occupancy?
- If you are forecasting high occupancy, how can you drive more average rate or shift your mix of business to capture more profit?

- What are you doing to take advantage of the different room types in each season?
- Why did you not choose to target particular segments and choose to target other segments?

GLOSSARY



Arrivals – amount of rooms set to arrive.

Brand.com – main reservation booking website for the hotel or chain.

Bundling – inclusion of additional services to a room offering.

Channel/source – platform or engine responsible for delivering a booking transaction. This could range from the hotel/brand call center, the hotel website, an online travel agency (OTA), a global distribution service (GDS), or the internal hotel sales team.

Channel management – where the sources of reservations are controlled for purposes of revenue and profit enhancement.

Citywide – event in the market that results in lodging demand adequate to fill the vast majority of all hotels

Commission – cost associated with booking a room where a percentage of revenue is due to the OTA or travel agent

Competitive benchmarking – Conducting an analysis to understand the position of a hotel against that of its competitors.

Competitive set (comp set) – a group of similar and directly competing lodging properties to which an individual hotel's operating performance is comparable and compete for the same business.

Cost of acquisition – fees, commissions, and expenses attributed to each booking from third party distributors or internal payroll including GDS commissions, OTA commissions, direct marketing expenses and all customer acquisition payroll.

Departures – amount of rooms that will or have checked out.

Early departures – rooms that are scheduled to depart on a later date but have checked out earlier than expected.

Fixed costs – costs maintained even if the hotel was empty.

House profit – the difference in the amount earned and the amount spent, or revenue minus operating cost.