SHA535: Non-Traditional Applications of Hotel Revenue Management
This course includes

- One self-check quiz
- Multiple discussions; you must participate in two
- One tool to download and use on the job
- One scored project in multiple parts
- One final action plan assignment
- One video transcript file

Completing all of the coursework should take about five to seven hours.

What You’ll Learn

- To refine the practice of hotel revenue management so it can be applied to additional areas of the hotel
- To extend the practice of revenue management to other industries
- To develop a functional revenue management plan, from gathering baseline data to monitoring post-implementation results

Course Description

Any business that has relatively fixed capacity, perishable inventory, and time-variable demand can increase revenue using revenue management—not just hotels. This course, produced in partnership with the Cornell School of Hotel Administration, introduces you to the basics of revenue management and outlines the application of revenue management principles to other businesses, both inside the hotel and beyond, such as spas, restaurants, and golf courses.

Through your work on the course project, not only do you explore the five steps of the revenue management approach and revisit and reinforce what you have learned about the refinement and extension of revenue management practices, but you also take away detailed notes and recommendations for implementing revenue management at the organization.
Sheryl Kimes  
Professor of Operations Management, School of Hotel Administration, Cornell University

Sheryl E. Kimes is a professor of operations management at the School of Hotel Administration. From 2005-2006, she served as interim dean of the School and from 2001-2005, she served as the school's director of graduate studies. Kimes teaches restaurant revenue management, yield management and food and beverage management. She has been named the school's graduate teacher of the year three times. Her research interests include revenue management and forecasting in the restaurant, hotel and golf industries. She has published over 50 articles in leading journals such as Interfaces, Journal of Operations Management, Journal of Service Research, Decision Sciences, and the Cornell Hospitality Quarterly. She has served as a consultant to many hospitality enterprises around the world, including Chevy's FreshMex Restaurants, Walt Disney World Resorts, Ruby's Diners, Starwood Asia-Pacific and Troon Golf. Kimes earned her doctorate in Operations Management in 1987 from the University of Texas at Austin.
Module Introduction: **Total Revenue Management**

The hotel industry was an early adopter of the revenue management approach, and many hotels have been very successful using it to increase profitability. Given that the approach has been applied to hotels so successfully, why not look at how it can be applied to other industries? In this module, review the principles of hotel revenue management, and consider how revenue management can be extended beyond hotels, even as you learn how to refine its application within the hotel industry.

When you have completed this module, you will be able to:

- Explain why a business would want to use revenue management
- Describe how duration and price can be used as strategic levers
- List the necessary conditions of hotel revenue management
- Provide examples of how to refine hotel revenue management practices
- Explain how to extend revenue management practices
- List some new internal areas that hotels can explore to refine their revenue management practices
- Recommend some areas of your organization you can explore to compose a revenue management plan
- List some non-hotel industries into which revenue management can successfully be introduced
- Identify ways your organization is or is not an ideal candidate for revenue management
Read: Does it Apply

The goal of hotel revenue management is to sell the right room to the right customer at the right price at the right time. Using this approach, hotel managers are able to maximize revenue per available room. In the following pages, Professor Sherri Kimes introduces you to the key concepts of hotel revenue management. Review the necessary conditions of revenue management, examine the benefits of using this approach, and explore how managers leverage duration and price.

You are a manager at a bustling downtown hotel, The Random Stays. This hotel has recently implemented hotel revenue management, and early reports indicate that these strategies are helping to increase revenue. Your general manager has expressed an interest in examining whether revenue management can be applied to areas of the hotel other than rooms. This is a long-term project you'd be very interested in taking on—but first, do you know everything you need to know about revenue management? You'll need a solid background in the revenue management approach: its principles, its benefits, and its limitations. Are you prepared?
Watch: The Hotel Revenue Management Approach

An illustrated presentation containing audio appears below. Use this resource to enhance your understanding of hotel revenue management.
Good candidates for revenue management include businesses characterized by:

- Fixed Capacity
- Perishable Inventory
- High Fixed Costs and Low Variable Costs
- Price-Sensitive Customers
- Use of Reservations

Let's examine the criteria that make an industry a good candidate for revenue management.

**Fixed Capacity and Perishability**

An establishment must have relatively fixed capacity if it's going to be a good candidate for the revenue management approach. Let's use a restaurant as an example. The capacity of the restaurant could be a variety of different things. It could be the square footage of its dining room and the legal occupancy limitations for a room that size. It could even be the size of its kitchen. The point here is that the capacity of the restaurant for the most part is fixed. At a golf course, capacity is fixed by the number of golfers that can fit onto the course at any given time. For an airline, it's the number of seats on each plane.

*Perishability* of inventory is another characteristic to look for in a candidate for revenue management. Perishability is often associated with things like foods, beverages, cut flowers, living plants, or pharmacy items. However, it's also possible to think about hotel rooms, spa-treatment rooms, and tee times as perishable inventory. For example, if a spa-treatment room is not used during a particular hour, the potential for revenue from that room at that hour is lost forever. Likewise, in the golf industry, if a 9:00 AM tee time on a Saturday isn't sold, it's gone forever—it's perishable.

**Cost Structure: Fixed and Variable**

A good candidate for revenue management has a high fixed cost and low variable costs, and this observation is relevant to the issue of capacity, too. Let's look at the spa example. It doesn't cost the spa very much to give someone a treatment, assuming the spa has an empty room anyway. It's already paying for the massage therapist, and costs for lotions or oils and the laundering of linens for a single patron are negligible. So the spa's variable costs are low. But if all the spa's rooms are full, the cost of hiring a contractor to build a new wing on the building or an additional floor beyond the roof while the customer waits would be quite high. So the fixed costs of physically augmenting facilities to increase capacity are prohibitive. The same conditions conducive to revenue management exist at any restaurant. If there is an empty table, what does it cost to seat a customer there? Ultimately, it comes down to just the food cost, which is typically about 30% of the selling price. The servers are getting paid anyway,
and so are the cooks. But how much would it cost to build a new restaurant or to add capacity to an existing one? A great deal of money. Revenue management is a method for engineering the variables of price and duration to make as much money as possible without incurring new fixed costs.

**Price-Sensitive Customers**

Revenue management strategies can have a significant impact when customers are price sensitive. Think about spas again. Are there some people who might be willing to come in at an off-peak period to get a massage if they can get a lower price? Maybe so. At the same time, are there some people who are willing to pay more if they can get a spa at a particular time, exactly when they want to have it, exactly where they want to have it? Absolutely. Revenue management works with the sensitivity of customers to yield the most profit from the expenditure of variable costs.

**Reservations Made in Advance**

When considering whether a particular business is a suitable candidate for revenue management, it is useful to ask if the business accepts reservations. Businesses that accept reservations are in a good position to benefit from revenue management strategies. Consider restaurants as an example. Although it is true that restaurants sell meals, it is also true that they sell time-time spent around their tables. Again, time is perishable inventory. Reservations allow restaurant managers significant leverage to distribute customer demand across a restaurant's hours of operation, maximizing revenue. Spas and golf courses accept reservations for the same reason. This is part of what makes all these industries good candidates for revenue management.
Key Points

*Price* and *duration* are the two strategic levers of revenue management.

*Price* can be fixed or variable; *duration* can be controlled or uncontrolled.

The ideal conditions for revenue management are variable price and controlled duration.

*Price* and *duration* are the two strategic levers of revenue management. Because of this, price and duration provide an excellent framework for considering whether certain businesses and industries are in a good position to benefit from this approach. Businesses characterized by many prices and controlled duration of service are the best suited to derive maximum benefits from revenue management practices. However, industries that can demonstrate maneuverability in at least one of these two strategic areas can profit from these practices as well.

In the chart presented on the right, some familiar industries are grouped according to price and duration, where price is divided into two categories-few and many-and duration is divided into controlled and uncontrolled. Uncontrolled duration is less favorable than controlled duration, from the perspective of revenue management, because uncontrolled duration gives managers fewer options for increasing revenues. Correspondingly, just one or a small number of prices is less favorable than many, because one price leaves managers no room to respond to price sensitivities and to fluctuations in demand. With these important distinctions in mind, let's look at the chart up close, quadrant-by-quadrant.

Movie theaters and convention centers appear in quadrant one. These businesses offer events of controlled duration—that is, movies with specific showtimes, and concerts or conventions booked for a preset number of hours. These controlled durations give managers the privilege of scheduling offerings precisely—even far in advance of their occurrence. Unfortunately, these venues traditionally offer just a few prices for each event, limiting the power their managers have to appeal to different market segments. Movie theaters, convention centers, and other businesses in quadrant one are only partially suitable for revenue management.
Now let's consider quadrant three: uncontrolled duration and few prices. A restaurant is a good example of a quadrant-three business. Think about it: a diner being seated at a restaurant would not expect to be given a time limit for his meal. In fact, he would expect to be able to extend his stay as he chose to. Likewise, a golfer would not expect that her round of golf would have a time limit attached to it. Because of this, and because most commonly neither menu items nor rounds of golf vary much in price, restaurants and golf courses fall into quadrant three.

Quadrant four is characterized by uncontrolled duration and variable price. Care facilities fall into this quadrant: duration of their services can't be controlled, but their prices can be varied. Care facilities could be in a good position to benefit from revenue management, though their position is not ideal.

Businesses in quadrant two are in the optimum position to benefit from revenue management strategies. In this quadrant, price and duration are flexible. Hotels and airlines, both of which may control duration and vary prices, reside in this quarter of the chart.

This chart provides an introduction to the revenue management perspective.
The Five Steps of the Revenue Management Process

1. Establish the baseline.
   Think about it. Before you make changes to an existing organization, you need to know what its performance is like now. Document a solid baseline using a few simple tools. You can gather internal data by monitoring demand patterns and Revenue Per Available Space Time (RevPAST) with a simple Excel sheet, and use a simple survey to collect customer feedback. Use this information to inform your goals.

2. Understand the causes.
   Once you have established the baseline, you need to understand the underlying causes driving these results. Look at the internal and external forces that influence your organization's performance. For instance, is customer behavior correlated with seasonal weather changes? Do service-cycle problems arise around particular tasks or individuals? Which of the causes you identify are things you can address? Use these answers to inform your strategy.

3. Develop a strategy.
   You've got a clear idea of where your organization needs to improve, and you have a good understanding of the underlying causes of any shortcomings you've observed. Now it's time to develop a strategy. Consider your options here. What levers do you have to manipulate? Price? Duration? Occupancy? You may choose a hot/cold strategy, which implements different operating procedures based on demand. During high-demand periods, known as hot periods, you may feature higher prices or a reduced offering of services to accommodate the larger crowd. Slow periods, known as cold periods, may feature reduced rates or special services to help bring in more customers.

4. Implement the changes.
   When you've solidified and documented the strategy, it's time to implement it. This, too, requires thought and planning. What sort of training does your staff need? Is there information outside of the simple procedures of the new rule structure that you need to explain to your staff? Implementation of a new approach requires position-specific training programs to help employees understand their roles in it. Additionally, managers should align any employee-incentive programs to coincide with the objectives of hotel revenue management. Make sure employees have the support and the incentives they need.

5. Monitor the impact.
Return to the tools you used in step one to revisit your baseline data. Compare this data to your current results. Is your strategy working? At this stage of the process, you must determine if your revenue management strategies are leading to better operational performance. You will want to consult your financial reports to investigate improvements. You will want to consider customer satisfaction as well. Are these measures showing improvement? Are you exceeding your expectations in some areas? Could you further refine your revenue management strategy? Keep these five steps in the forefront throughout your management process to ensure your organization is running to its fullest revenue potential.
After six months on the job as rooms manager for Random Stays Hotel, you have a strong grasp of basic revenue management strategies. In fact, the revenue management approach informs many of your management decisions. So far, the general manager is very pleased with your results. She has encouraged you to refine the hotel's implementation of revenue management to further increase profits. Your hotel is in a popular tourist area and enjoys an admirable occupancy rate. People are drawn to your beautiful spa facilities and convenient, central location. What are some ways you might further utilize revenue management techniques?

Explore the following pages to learn about refining revenue management.
Watch: Refinements to Current Practices

An illustrated presentation containing audio appears below. Use this resource to explore recent innovations in revenue management and how hotels use these to increase revenue.
"Real potential exists for novel use of these tools in industries not typically associated with yield management."

In this article, "The Strategic Levers of Yield Management," authors Sherri Kimes and Richard B. Chase point out that yield management is often viewed simply as a tool for pricing and inventory management, though it can also be used for managing duration. A broader theory of yield management (revenue management) would permit a range of service industries to gain significant benefits. In addition, a broader theory would provide insights into new areas in which companies experienced in the use of revenue management might further apply the concept.

The focus of this article is on the strategic levers available for revenue management, how they have been applied, and how they can be applied to other service settings.
Your hotel may possess undiscovered revenue possibilities. Even if you have a revenue management system in place, additional revenue potential may be hidden in plain sight. By extending the same revenue management techniques you've acquired for general hotel operations to other profit centers within your hotel, you can increase your bottom line and make more money.

As a new manager at the Random Stays Hotel, you're building your knowledge of the revenue management system your colleagues implemented just before your arrival. According to reports, revenue is up 4%! This is great news, and no small part of the reason the general manager has asked you to look into revenue management opportunities in other units of the hotel.

Looking around, you see that the hotel spa suffers from severe slow periods, and that the conference facility is often empty. After talking to the spa staff, you discover that their unit has an excellent reputation for quality and that they need to turn customers away during peak periods. Similarly, the conference facility is in high demand at certain times of the year, although at other times its bookings slow to a trickle.

Is it possible to work with the known levers of revenue management to maximize the profitability of these facilities? To what other areas of the hotel could you apply these principles?
Watch: Extensions of Current Hotel Revenue Management

An illustrated presentation containing audio appears below. Use this resource to discover how revenue management practices can be extended to other areas of the hotel and to other industries.
Extending Revenue Management to Restaurants

Key Points

“The key to any successful revenue management strategy is to offer multiple prices to a variety of market segments, as appropriate.”

Can revenue management be applied to restaurants? This article by Professor Sherri Kimes shows how and why it can. Restaurants, after all, offer a perishable product-time in the dining room! It's true that the food and drink may be perishable, but the focus for revenue management, according to Professor Kimes, is perishable seat hours. The restaurant is only open a certain number of hours per day. During those hours, the restaurant owner is hoping that most, if not all, of the seats in the dining room will be filled. Once those hours are gone, they will never come back. That's the essence of perishable inventory.

In addition, restaurants are characterized by relatively fixed capacity, time-variable demand, and segmentable markets-and restaurants take reservations, too. Though restauranteurs cannot directly control a customer's use of the restaurant table, they can control service processes to ensure that the dining experience is handled efficiently-just as they control them to ensure the customer's satisfaction.

Read about how Chevy's Arrowhead in Phoenix, Arizona, used revenue management levers to improve its revenue through process control in this essential reading on extending revenue management.
Module Introduction: Revenue Management Applications

In this module, Professor Kimes describes her experience implementing revenue management strategies at Talking Stick Golf Course in Phoenix, Arizona. As you work through this case study—its analysis of data, diagnosis of revenue-related problems, and recommendations for increasing revenue—continue to work on your course project. Develop your thinking about your own organization as you consider Talking Stick and the Raffles Convention Center as revenue management candidates. At the end of the module, complete the worksheet questions, make any necessary revisions to your course project you need to, and send the completed worksheet to the course instructor for evaluation.

When you have completed this module, you will be able to:

- List steps one and two in the revenue management process
- Use baseline data to analyze cause and effect
- Discuss your interpretation of baseline data and of underlying causes
- List steps three though five of the revenue management process
- Calculate whether the duration of a process can affect its revenue capacity
- Identify two good candidates for revenue management extension, and explain your choices
- Recommend strategies for dealing with common problems related to revenue management
- Recommend approaches to measuring the success of a revenue management program
- Explain the difference between revenue and contribution
- Complete a revenue management plan for your organization
Read: On the Links

Talking Stick Golf Course, in Phoenix, Arizona, is a public course where the demand for tee times is robustly seasonal. The owners are interested in looking at how they might incorporate revenue management principles to increase their revenue. Can revenue management be applied to a golf course?

Professor Sherri Kimes worked with Talking Stick on this question, and she describes her experience in this module. Find out how she approached this problem, and learn both from the decisions she made and the results she achieved.
Watch: The First Two Steps

An illustrated presentation containing audio appears below. Use this resource to enhance your understanding of step one of the revenue management process.
Tool: Fishbone Diagram

Download the Tool

Fishbone Diagram Template

Step two of the revenue management process is to understand the causes of your revenue management problems, and to do this you need tools. A fishbone diagram is a great tool you can use to analyze factors you've identified as affecting your revenue. Let's look at how the fishbone diagram is used to explore cause and effect. Starting with what we know about Talking Stick Golf Course, we can complete a simple diagram and then use it for steps three and four of the revenue management process.

Instructions for Creating a Fishbone Diagram

First, identify the issue to be analyzed. In this case, let's focus on the uneven booking patterns at Talking Stick. Recall that in the summer months, golfers make many reservations at the last minute, whereas in the winter, they may book weeks or months in advance. This issue can be represented in a box like this one.

Why do we have such uneven booking patterns?

This is the head of the fish in your fishbone diagram.

Next, brainstorm the possible reasons for this situation. Draw a horizontal line from your issue and begin building up the fish's "backbone" with possible reasons for this behavior.

Why do we have such uneven booking patterns?

As you develop the diagram, keep what you consider to be the major causes closer to the "head" of the diagram (the issue), and the more tangential causes closer to the "tail" of the diagram.
As you continue to brainstorm possible causes, you'll get a clearer picture of the factors you might address and in what order. Can you make this fishbone approach work for you?
You've been working with the managers of Talking Stick Golf Course in Phoenix, Arizona, to help them identify ways they can use revenue management strategies to boost their revenue. Alongside them, you've made baseline observations and done some cause-and-effect analysis toward this end. Now it's time to recommend strategies. You know well the two strategic levers of revenue management: price and duration. Can you make good recommendations for Talking Stick based on what you know and what you have observed?

Explore the resources in the following pages to find out how Professor Kimes handled this situation and to gain skill in using revenue management yourself.
Watch: Developing Hot and Cold Strategies

An illustrated presentation containing audio appears below. Use this resource to enhance your understanding of hotel revenue management.
Watch: Implementing and Monitoring Changes

An illustrated presentation containing audio appears below. Use this resource to enhance your understanding of steps four and five of the revenue management process.
Read: A Question of Space

You've extended the principles of revenue management to Talking Stick Golf Course, and you've thought about how to extend them to one or more areas at your chosen organization. Now let's consider a new application of revenue management, in a different context, to further instill how diversely these practices can be applied. In what follows, you'll use what you've learned from the Talking Stick case study, and you'll complete your recommendations on a revenue management plan for your organization.

You have steadily acquired a solid background in revenue management—not just in the context of hotels, but in that of other industries as well. Your challenge now is to consider a high-margin area of the hotel we have not yet looked at in detail: function space. The question is, can something like function space be managed using revenue management techniques?

Here are some day-part-contribution data for the function spaces you've been asked to evaluate.

<table>
<thead>
<tr>
<th></th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ballroom</td>
<td>$9,810</td>
<td>$4,350</td>
<td>$2,470</td>
<td>$4,280</td>
<td>$6,220</td>
<td>$6,950</td>
<td>$10,450</td>
<td>$6,460</td>
</tr>
<tr>
<td>Meeting room 1</td>
<td>$610</td>
<td>$270</td>
<td>$470</td>
<td>$420</td>
<td>$490</td>
<td>$390</td>
<td>$526</td>
<td>$460</td>
</tr>
<tr>
<td>Meeting room 2</td>
<td>$1,000</td>
<td>$1,530</td>
<td>$1,260</td>
<td>$1,050</td>
<td>$1,590</td>
<td>$1,800</td>
<td>$1,860</td>
<td>$1,440</td>
</tr>
</tbody>
</table>

What can you say about the demand for these rooms? What's true in general? Are there any patterns to the demand?

Table 2 presents the same contribution data, but this time expressed per square foot. This altered view provides new information.

<table>
<thead>
<tr>
<th></th>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ballroom</td>
<td>$1.10</td>
<td>$0.50</td>
<td>$0.30</td>
<td>$0.50</td>
<td>$0.70</td>
<td>$0.80</td>
<td>$1.20</td>
<td>$0.75</td>
</tr>
<tr>
<td>Meeting room 1</td>
<td>$0.20</td>
<td>$0.10</td>
<td>$0.15</td>
<td>$0.15</td>
<td>$0.15</td>
<td>$0.15</td>
<td>$0.18</td>
<td>$0.15</td>
</tr>
<tr>
<td>Meeting room 2</td>
<td>$0.20</td>
<td>$0.30</td>
<td>$0.30</td>
<td>$0.20</td>
<td>$0.35</td>
<td>$0.40</td>
<td>$0.40</td>
<td>$0.30</td>
</tr>
</tbody>
</table>

What does this table tell you about the revenue performance and the revenue potential of these rooms?

Keep your impressions of these data sets in mind as you explore the resources in this module.
Watch: Function Space

An illustrated presentation containing audio appears below. Use this resource to examine function space as a candidate for revenue management.
Key Points

"We believe that revenue management can help improve the profitability of hotel function space."

Can revenue management be applied to a convention center? This article by Professor Sherri Kimes and Kelly A. McGuire shows how and why it can. Kimes and McGuire begin with the assertion that a convention center offers a perishable product. As was the case with restaurant seat hours and golf-course tee times, the available space in a convention center at a particular time is perishable: once it's gone, it will never come back. The measure the authors have come up with to gauge the center's revenue performance is contribution per available space for a given time: ConPAST.

In the article, the authors explain how they developed a revenue management strategy for the Raffles City Convention Center at the Swissotel Stamford and for the Raffles Plaza in Singapore. Read about how these centers used revenue management to improve their revenue in this essential reading on extending revenue management.

View the article
Listen: Thank You and Farewell

Hello. This is Sherri Kimes again. I'd like to thank you for taking this course and hope you got some interesting ideas on how you can apply revenue management to other parts of your hotel and to other industries. There's a lot out there to do with revenue management, and I look forward to hearing about your successes in the future. Thank you.
Supplemental Reading List

The Center for Hospitality Research provides focused whitepapers and reports based on cutting-edge research.

“An Examination of Internet Intermediaries and Hotel Loyalty Programs: How Will Guests Get Their Points?” (2006) - Carroll, Bill and Judy A. Siguaw.
Center for Hospitality Research Reports. 6.4: 1-19.

Cornell Hotel and Restaurant Administration Quarterly 43: 94-103. (This article originally appeared in Cornell Hotel and Restaurant Administration Quarterly in February of 1992.)

Cornell Hotel and Restaurant Administration Quarterly 30: 14-19.

“Perceived Fairness of Yield Management.” (2002) - Kimes, Sheryl E.
Cornell Hotel and Restaurant Administration Quarterly 43: 20-30.

Cornell Hotel and Restaurant Administration Quarterly 43: 92-93.

Cornell Hotel and Restaurant Administration Quarterly 44: 131-138.

Lovelock and Wirtz, editors. Services Marketing. 546-551.

Cornell Hotel and Restaurant Administration Quarterly 39: 15-19.

Center for Hospitality Research Reports 5.7: 1-18.

Cornell Hotel and Restaurant Administration Quarterly 43: 79-90.

Center for Hospitality Research Reports 1.1: 1-20.
