

Articles / Whitepapers

Practice: Technology

Topic: Property Systems

Revenue Management

It should really be called "Profit Management"...



By Mark G. Haley & Jon Inge

Every hotel manager, operator and owner has a fundamental obligation to optimize the long-term profitability of the assets. Fulfilling this obligation can mean things like increasing rates during busy periods, dropping them during slower times to maintain occupancy (and keep staff working) or incurring expenses like a room renovation or investing in technology. Given the uptick in demand that the industry has enjoyed in the past year, one area of investment more and more hotel companies are evaluating is Revenue Management (RM). These hoteliers believe that they can drive increased profitability using RM tools and techniques.

Revenue management is more complex than ever, but potentially more rewarding, too. It requires the whole organization to pull together, but the right Revenue Management implementation can really drive results, creating not just revenues but profits.

Most practitioners accept that implementing Revenue Management in a hotel can increase revenues 3-6%. Many have won much greater increases:

- Affinia Hospitality saw revenues increase 17% over the prior year in the first month after implementing manual RM processes in a new CRO
- The Millennium Bostonian Hotel paid back all of their start-up costs and more in the first month after converting from manual RM processes to an ASP-based service
- Harrah's Entertainment credited their RMS (installed 2001) with increasing room **and gaming** revenues 13% for the year in 2002

Focus on that for a moment:

**Implementing RM can increase revenues 3-6%
or more; much more.**

Then consider that almost all of that incremental revenue flows through to operating profit. So, I can increase profitability merely by installing a computer system? Not exactly: Revenue Management is not a computer system. It is not a set of arcane statistical algorithms. It isn't even a department in your hotel. ***Put most simply, Revenue Management is a way of doing business that means every department focuses on what they need to do to drive the total profitability of the organization.*** Computer systems drive a much more disciplined and consistent implementation of RM, but the organization must embrace the cultural shifts required to benefit from Revenue Management. It's the culture, not the computer.

How Did All This Get Started?

Let's examine the history of RM and some of the basic concepts. Many people correctly observe that there is nothing new about Revenue Management. Anyone selling a perishable product knows that you need to flex your pricing in accordance with demand, lead time, competitors and a host of other factors. Hotel rooms, airplane seats, advertising time, fresh produce and winter clothing are all subject to Revenue Management tactics and always have been.

Revenue Management as a formal discipline has its origins in the domestic American airline industry of the 1970's. Established, regulated airlines were threatened by unregulated charter competitors. American Airlines, led by the legendary Bob Crandall, sought to cut the charters off at the pass. They did so successfully with advance purchase restrictions on deeply discounted fares. Thus was born "Yield Management", the precursor to today's Revenue Management.

American, and other airlines, refined and extended their Yield Management (YM) capabilities during the early years of deregulation, ultimately giving them the ability price every seat on every flight for maximum value, selling low cost seats to price-sensitive travelers (usually the leisure segment) and high-cost seats to time-sensitive travelers (usually on business). The impact and benefit of these capabilities became transparent to all observers by the end of 1985, when American reported 48% profit growth on 14.5% revenue growth, while low-cost competitor People's Express was hemorrhaging customers and cash. These financial results and overwhelming competitive advantage attracted a lot of attention from a lot of industries.

Cruise lines, car rental companies and hotel companies started to evaluate the benefits of adopting YM as a business strategy. Early adopters in the hotel space included Marriott International, Holiday Inns Worldwide (now Intercontinental), Hilton Hotels Corporation and ITT Sheraton. Organizations with centralized information systems and management structures adopted centralized systems. More decentralized organizations sought property-based systems.

Just What Does "RM" Really Mean Anyway?

As Yield Management matured into Revenue Management, the standard definition of the art evolved to "Revenue Management is the practice of selling the right product (room, seat, banana, etc) for the right price (rate, fare, etc) at the right time to the right customer." In the era of compound distribution channels and merchant model outlets, we can also add "via the right channel". Different channels demand different prices and yielding strategies, and guests have come to expect different prices by

channel, because the product itself is subtly different on each. A good example of differentiation by service could be a low-priced merchant model room sale that excludes frequency program points or upgrade benefits.

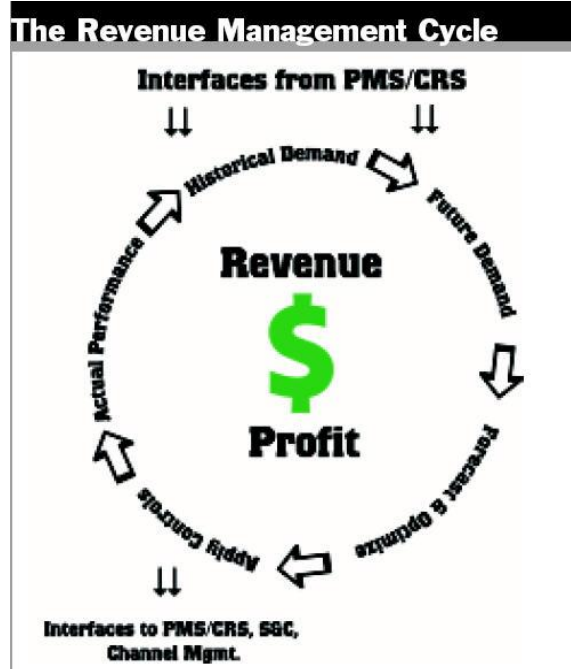


Sample Calendar View of an RMS. This screen is where the revenue manager typically first goes in the system. Note flags for high or low occupancy, special events and alerts. These flags make the Calendar View exception-driven, so the revenue manager goes straight to the arrival dates flagged as opportunities to increase revenue. Screen shot courtesy of IDEAS, Inc.

Now, let's drill down on that definition a little bit and see what it takes to execute against it. The first building block is an accurate record of demand for past arrival dates, with arrival date, departure date, booking date, rate and market segment, including booking channel, captured for every reservation. The system then calculates the Day of Week (DOW) for the arrival and departure dates and Length of Stay (LOS). Ideally, you will start with just over a year's worth of history, but that often is not practical.

The next element is data about known demand for future arrival dates, again by segment. The RMS extracts this data from the PMS or CRS daily (or more often) on an on-going basis. The historical data, in combination with the known demand for future arrival dates, is then used to forecast demand by segment for all future arrival dates within a defined window. This forecast is usually sensitive to DOW factors, seasonal demand shifts and secular shifts in demand.

The system then optimizes the available rate and stay pattern controls against the forecasted demand and makes recommendations as to what controls to apply on what arrival dates to generate the most total revenue. Finally, the system captures actual performance (again via extract from PMS/CRS) on the arrival date and, in some cases, modifies the forecasting and optimization algorithms for no shows, walk-ins, etc. and the impact of the controls actually imposed. This element closes the feedback loop and makes the system heuristic, able to learn from its experience over time.



Some of today's systems optimize ancillary revenues as well as room revenue. In this scenario, management provides an estimated profit margin for each ancillary revenue stream (casino play, lift tickets, F&B sales) as well as rooms margin. The system then generates recommendations that optimize profit rather than revenue. For example, Intrawest Resorts' group RM module may recommend accepting a

group with a ski lift ticket commitment at a lower room rate than would be sold to transients with a smaller lift ticket revenue forecast. The same logic applies to optimizing room revenue by cost of distribution channel.

Most RM systems offer a choice of merely offering up recommendations or automatically triggering status and inventory controls in the PMS/CRS. A recommendation-driven system requires more time, expertise and attention from the hotel's designated Revenue Manager to enter the recommendation into the PMS, CRS or other channels. A command-driven system automates the input, but naturally requires a more robust interface to the PMS or CRS.

There are also hybrid solutions that allow hotels to establish parameters defining the kinds of recommendations that can be implemented automatically vs. those that need to be reviewed before implementation. In these systems all, some or no recommendations can be deployed automatically, depending on the client's needs.

Some PMS/CRS products offer automated yielding tools that may appear to support RM functions. These features allow the hotel to define business rules sensitive to realized demand that trigger status controls when "X" number of rooms are booked for a given arrival date. While these triggers offer value and discipline in managing inventory, they are reactive rather than proactive, responding only to pre-set triggers and not identifying changes in booking pace. We would label these features "Rate Management", and argue that they do not represent Revenue Management, lacking the crucial forecasting and revenue optimization algorithms.

What Else Do I Need To Know Now?

Let's review some of the fundamental concepts underlying Revenue Management.

Rate vs. Occupancy vs. RevPAR - When we were in hotel school, we were taught to look at Average Daily Rate and Occupancy Rate. One tells us how much we got for each room, the other how many of our available rooms we sold. Both are useful, but both only tell part of the story. A hotel company looking at their business from a Revenue Management perspective is more interested in RevPAR, or Revenue Per Available Room. RevPAR elegantly expresses both variables in a single number.

Two arithmetically equivalent ways to calculate RevPAR:

$$\frac{\text{Total Room Revenue}}{\text{Total Available Rooms}} = \text{RevPAR}$$

or

$$\text{ADR} \times \text{Occupancy \%} = \text{RevPAR}$$

The RM-enabled hotel company establishes incentive compensation based on RevPAR rather than Rate or Occupancy, allowing for effective comparison of performance across properties and time periods and dissuading staff from increasing occupancy solely by selling rooms at heavily-discounted rates, or selling very few rooms at high rates.

Unconstrained vs. Constrained Demand – "Unconstrained demand" is the RM term for the total demand for rooms on a given arrival date if you could in fact provide rooms for all of that demand. Constrained demand means the total demand you can serve, subject to the number of available rooms.

Sometimes the concept is applied when a limit on one resource reduces the revenue potential of another resource: A lack of guest rooms can

constrain the revenue potential of the casino floor at Harrah's, for example. Harrah's Steve Pinchuk explains "We calculate "Total RevPAR" as (Room Revenue + Gaming Revenue)/Rooms Available, and our Rainmaker RMS optimizes on that basis."

Displacement Cost – Displacement cost refers to the revenue potential lost, or "displaced", to the enterprise incurred by accepting one piece of business over a competing opportunity. When a hotel accepts a group, it may have to refuse some volume of non-group business as a result. The revenue from that non-group business is therefore displaced, but the question in this case is whether the accepted revenue is greater than the displaced revenue. When it isn't, the net displacement is negative. If the Sheraton Boston Hotel & Towers accepts a low-rated "leaf-peeper" bus tour for the October foliage season, they risk a net negative displacement cost due to not having rooms available for higher-rated corporate group or transient business.

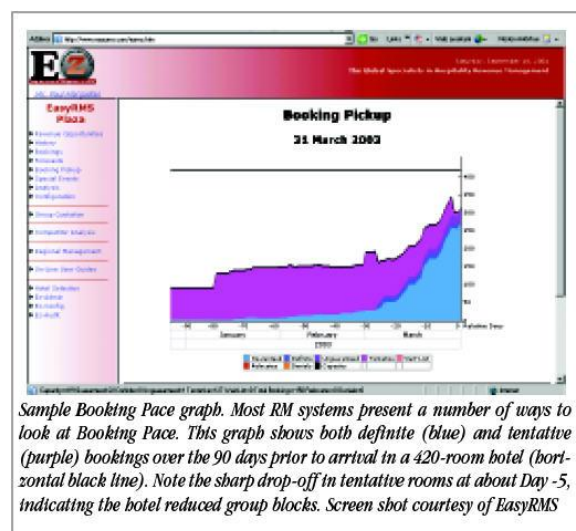
Spoilage – Exactly what it sounds like: inventory that goes unsold when there is unsatisfied constrained demand in the market. Reasons for spoilage include a poor forecast that leads the Revenue Manager to hold too many rooms for late sale at a high rate, but the demand never materializes, bad weather or a group block that washes at the last minute.

Booking Pace – The number of rooms reserved for an arrival date (Day 0) as of each preceding booking date (Day -30, Day -60, etc). Typically represented graphically, booking date on the X-axis and number of rooms booked as of the date on the Y-axis. Revenue Managers must intimately understand their booking pace by DOW. *(insert screen shot of booking pace graph)*

Data Extract – Reliably extracting data about past demand, future demand and actual performance from the hotel's PMS or CRS is often the most problematic aspect of an RMS implementation. Make the stability and reliability of the data extract process a key point in selecting an RMS. It's critical that the systems work well together.

Controls – Revenue Management uses "controls" to fit forecasted unconstrained demand into available rooms so as to optimize total revenue. Price is a key control. Others speak to behavioral "fences" governing stay pattern: examples include Saturday night stay-overs, minimum length of stay and so on. Let's look at a few:

Rate Tiers – Remember when the term "rack rate" meant something? Today, RM-enabled hotels are more likely to have multiple tiers of rates that they apply to any given arrival date according to forecasted unconstrained demand and how far out the booking date is. Sometimes expressed as "A Rates, B Rates, ..." or "BAR 1, BAR 2,) where BAR means "Best Available Rate".



Sample Booking Pace graph. Most RM systems present a number of ways to look at Booking Pace. This graph shows both definite (blue) and tentative (purple) bookings over the 90 days prior to arrival in a 420-room hotel (horizontal black line). Note the sharp drop-off in tentative rooms at about Day -5, indicating the hotel reduced group blocks. Screen shot courtesy of EasyRMS

MLOS – Minimum Length of Stay represents one of the key controls available to the hotel

Revenue Manager. Applied in the PMS and CRS to increase the total revenue from rooms available for brief peaks by selling them only to guests willing to stay on shoulder nights around the peak. For example, the gracious and historic White Elephant Inn on Nantucket Island routinely applies a three-night MLOS restriction on every weekend in the summer. If you want a Friday/Saturday night, you need to stay Thursday or Sunday as well. However, “In April? You are welcome to come for only one night on any day of the week.” observes Director of Revenue Carol Andersson. MLOS controls have the singular advantage of being easy to explain to the guest, an attribute not all RM controls share.

No Arrivals/No Departures – Often used inside an MLOS restriction, a No Arrivals control disallows reservations from arriving on the specified date(s), even if they exceed the MLOS. Conversely, No Departures inhibits departures. The result is to minimize a peak or valley during the period and spread more revenue over more days.

Stay-Throughs Allowed – Perhaps more of an exception rule than a control itself, Stay-Throughs will allow any reservation of more than “X” nights to be booked despite whatever other controls are in force, including a Stop Sale.

Now That I Know What RM Is Today, Where Is It Going?

Revenue Management today is an active and vibrant market, with numerous system vendors and consulting shops vying for any hotel’s business and promising endless profits raining from mountains of new revenue. There are more vendors offering systems (we count eight in the hospitality market) than ever before and

they all report increased demand for their products and believe the market opportunity before them is immense.

A survey of RMS vendor executives asking them to estimate the current market penetration of automated RM systems yielded responses ranging from 6-11% penetration, converging on 10%. Tom Walker of The Rainmaker Group (<http://letitrain.com/>) notes “Thousands of hotels representing millions of rooms stand to increase revenues and profits by embracing Revenue Management as a way of life.” Tom’s colleagues and competitors agree. John Romeo, co-founder of TrendFX (<http://trendfx.net/>) states that “ASP-based systems open up the rest of the market for automated Revenue Management solutions.”

ASP, or Application Service Provider systems allow the hotel to skip buying hardware and software and instead rent the right to use the vendor’s hardware and software on a monthly subscription. Moving from property-based systems to ASP-based systems is one of the major trends in the RM industry today. ASP-products reduce the cost of entry to the point that virtually any hotel can afford the startup fees and monthly subscription. IDEaS Revenue Optimization (<http://www.ideas.com/>) CEO Ed Booth explains “Given the business conditions affecting the hospitality industry after 9/11, we took advantage of that time to completely re-tool, revise and re-code our intellectual property to operate on an ASP platform. Today our clients are executing large-scale rapid deployments with great efficiencies in cost, time and resources.”

Going along with ASP platforms as business model (rent vs. own), the same technology supports large-scale centralized RM implementations by brands. In system

architectures where all inventory resides in the CRS, a centralized RM system offers the notable benefit of a single interface between the CRS and RMS, allowing very effective maintenance of the RMS interface. It also allows brands to add significant value to the relationship. Andy Oman is the Director of Revenue Management for Carlson Hotels Worldwide. In explaining the centralized RM service offering for Carlson's hotels, Andy notes "We support owned, managed and franchised properties on our centralized Top Line Prophet system. All of the hotels benefit from the integration with our Curtis-C CRS and our ability to help them move from a purely tactical view of Revenue Management to a more strategic posture. The structure will ultimately include competitive set information and forward rate setting to increase the properties' share of their markets."

Another trend driving larger and faster deployments is the ability for some systems to provide a multiple-property view of a market, allowing an area manager to control rates and controls for the entire market, not just a single hotel. Delfo Melli of Optims (<http://optims.com/>) cites using cluster optimization levers to drive the ability to cross-sell and up-sell among properties Revenue Managed as a group. These capabilities benefit a group of hotels in several ways:

- They increase revenues for the market by yielding multiple properties in concert
- Selected segments can be steered to properties with more availability
- The hotels share the cost of a dedicated Revenue Manager, thus receiving a higher level of productivity

Everyone in the industry is well aware of the proliferation of new distribution channels. In addition to baseline PMS/CRS/GDS channels, we now have the hotel website, the brand website and countless third-party on-line channels. This proliferation impacts the RM process in two key ways:

- Optimization routines must consider the cost of each distribution channel in calculating what controls will yield the most revenue
- Implementation of recommendations across more channels takes more time and effort

Channel management complexity is a core part of any hotel's RM strategy, whether or not a Revenue Management System is involved. Kathryn Lange of Maxim Revenue Management Solutions (<http://www.maximrms.com>) observes "This increased complexity poses many challenges to RMs, including the need to optimize net profit for each particular channel, as well as the time-consuming task of updating the controls across channels. Our RM system maximizes net profit by channel and automatically updates controls to be applied to each channel, thus maximizing profit while at the same time minimizing the RMs workload."

Most of today's systems have some capability to value groups. The central questions include:

- How much transient revenue might be displaced and at what rate?
- What rate should we offer the group?
- What happens to total revenue if we can induce the group to shift to different dates?

Answering these questions depends upon strong long-range forecasting algorithms in the RMS and the capacity to calculate margins on ancillary revenues. A significant trend in the

RMS space today is to extend the reach of the RMS into Sales & Catering Systems. Integration of RMS and S&C systems allows sales managers to value groups without opening the RMS and inputting the data all over again. Peter Johnson is the General Manager of MICROS Systems' Top Line Profit unit. Peter observes "Our clients have found Sales & Catering interfaces to be a popular labor-saving tool that brings the value of the RMS to every desktop in the Sales Office."

What Are Some Of The Challenges?

Implementing Revenue Management is no simple task. Some obstacles are technical, like the reliability of PMS data extracts. Other obstacles are cultural and organizational. Let's examine some these challenges on both sides of the fence.

The question of where to place control of the RM function organizationally often generates much emotion and conflict, both within the property and within the enterprise. Many properties historically placed inventory controls in the Rooms organization, while others put it into the Sales & Marketing food chain. Changing the reporting lines in any direction often causes conflicts on the Executive Committee. The historic New Yorker Hotel, 1,013 rooms in mid-town Manhattan, eliminated this issue by moving the Reservations Office reporting line out of Sales and into the Revenue Manager, who now reports directly to the General Manager.

At the enterprise level, the opportunity to centralize controls offers numerous benefits we described above: Yielding the market, higher level of staffing, etc. However, many

organizations see great risk and organizational conflict in taking the control of revenue generation out of the property. Many hotel companies opt for a blended approach: Omni Hotels' CHARM (Centralized Hotel Automated Revenue Management) is a completely centralized operation from a technology perspective, based on a Rainmaker architecture. From a control perspective, "Omni employs Directors of Revenue Management at forty hotels that report to their Directors of Sales & Marketing. Our corporate RM staff of three supports these individuals in their use of RM strategies and technology." explains Brad Anderson, Corporate Director of Revenue Management for Omni.

Once the organizational issues get sorted out, the hotel company confronts implementation challenges. Obtaining adequate historical data on demand represents a significant technical challenge. Property Management Systems are not built to store booking pace demand detail, so sometimes initial databases are built from manually maintained spreadsheets. We know this to be a painful process. Most RMS vendors would like to have a full year of history to generate accurate forecasts, but can begin the effort with 90-180 days of booking history if required, noting that forecasts generated early in implementation are less reliable than forecasts based on more history.

The hotel must carefully examine rate structures when implementing RM. Static rack rates that perhaps vary only seasonally generally get replaced with flexible tiers of rates that vary on any given day. This dynamic approach to pricing requires a dynamic mindset in the Reservations Office, with everyone trained to always look for rates in the system

and not on a chart on the wall. This is an important cultural change.

The next shift lands squarely on the Revenue Manager and everyone up her reporting line: How much trust do you place in the recommendations? At what point does the Revenue Manager say “the system is wrong and I will keep my discounts off because I know more than the computer does.”?

The fact is, sometimes an RMS will generate a recommendation that seems at odds with the real world. Chris Bates, Regional Director of Revenue Management for Millennium Hotels & Resorts believes “The system recommendations are only as accurate as the data that goes into it. Millennium’s position is that a trained Revenue Manager working in concert with the system generates more revenue increase than the system alone or the human alone.”

Omni’s Anderson explains “Omni’s CHARM system allows the Revenue Manager to adjust the assumptions the system uses to forecast unconstrained demand. We use such adjustments to depress forecasted demand due to events like the SARS outbreak or a new competitor opening, or to increase the forecast because the major competitor closes for renovations. In either case, Omni’s experience is that the management team comes to accept the system recommendations and use them as the productivity and profit tools they are.”

Other property-level conflicts arise when RM says “don’t take the tour bus business.” We guarantee you that the sales person whose job is selling to Tour & Travel accounts will have a problem with that.

As we noted at the beginning, Revenue Management is a way of doing business rather than a computer system or a department. Any given hotel organization is at a different point on their Revenue Management journey. Any given organization can do well to look at the penetration of the RM ethos in their company and identify a strategy for extending it.

A hotel with static pricing models needs to look at setting rates dynamically and carefully tracking booking pace. A hotel with established manual RM processes should investigate automation. Key considerations will include PMS/CRS interface (data extract and applying controls), S&C or channel management interfaces, availability as an ASP and optimization of ancillary revenues by margin.

A hotel company with automated Revenue Management in place needs to look at continuous training and how to drive RM strategies into other parts of the organization and over a longer period of time. ■

“The most important thing for the Valued Guests is that they get what they want...”

For more information, we recommend:

Revenue Management, by Robert G. Cross, Broadway Books, 1998. The definitive text authored by the founder of RM pioneer Aeronomics, Inc.

Revenue Management, by AH&LA Technology Committee, date. 50-page primer available at no cost to AH&LA members from http://www.ahma.com/members_login.asp.

Find numerous links to academic and practitioner articles on the subject at

http://www.profitoptim.com/Articles_Briefings/body_articles_briefings.html

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