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Doubling Down on Analytics: Using Analytic Results from Other Departments to Enhance Your Approach to Marketing

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ABSTRACT

Response rates, churn models, customer lifetime value--today's marketing departments are more analytically driven than ever. Marketers have had their heads down developing analytic capabilities for some time. The results have been game-changing. But it's time for marketers to look up and discover which analytic results from other departments can enhance the analytics of marketing. What if you knew the demand forecast for your products? What could you do? What if you understood the price sensitivity for your products? How would this impact the actions that your marketing team takes? Using the hospitality industry as an example, we explore how marketing teams can use the analytic outputs from other departments to get better results overall.

INTRODUCTION

Driven by a greater need to develop a 360-degree view of the customer and to engage them at multiple touch points, hospitality companies are faced with a myriad of decisions and options to create experiences that excite and delight their customers. To this end, today's marketing departments have become more analytically driven than ever. Marketers have had their heads down developing their own analytic capabilities for some time, and the results have been game-changing.

It's now time for marketers to look up and discover which analytic results from other departments can enhance the analytics of marketing. What if you knew the demand forecast for your products? What could you do? What if you understood the price sensitivity for your products? How would this impact the actions that your marketing team takes? Using the hospitality industry as an example, in this paper we explore how marketing teams can use the analytic outputs from other departments to get better results overall.

Using the hospitality industry as an example, we will review analytics from three areaspricing revenue management, service operations, and even marketing itself--to look for opportunities to integrate additional analytics into the marketing process.

USING PRICING AND REVENUE OUTPUTS FROM REVENUE MANAGEMENT

When you compare the marketing and revenue management departments of a hospitality company, it is like comparing opposite sides of the same coin. On the one side of the coin, marketing is responsible for nurturing demand through brand image and identity, and for stimulating demand through more targeted actions, including campaign strategies, customer relationship management, and loyalty programs. Marketing is responsible for the relationship with the customer, and for understanding and taking actions on customer preferences, purchase behavior, and customer lifetime value. It is also responsible for knowing which offers customers are most likely to respond to. On the opposite side of the coin, revenue management is responsible for managing demand, including setting price and managing availability. Revenue management is responsible for the room inventory and measures price sensitivity and demand by property, market segment, and date. It then uses this information to set rates and rate availability. Revenue management knows when and where demand is expected and needed.

Marketing professionals have the dual goals of stimulating demand and maximizing the response rates from their offers and promotions. However, if marketers plan promotions in isolation, without input from the revenue management department, promotion planning can not only damage the efforts of revenue management, but also those of marketing. A common example of this disconnect is when a marketing promotion is sent out for dates when the demand forecast already indicates that business will be at capacity. In this case, customer experience is impacted when customers call to redeem a hotel offer or promotion and there are no longer rooms available. Such actions not only impact marketing, but also revenue management. If the revenue manager is unaware when promotions are targeted, he can incorrectly interpret the changes in demand that result from the promotion and apply strategies that will negatively impact the business. In this case the decisions of the revenue manager and even the revenue management system could be impacted by unexpected changes in demand patterns.

Revenue managers produce demand and occupancy forecasts, whether they use a revenue management system or develop forecasts manually using Microsoft Excel. When marketers have ready access to these demand and occupancy forecasts, they can place promotions more effectively. Similarly, when revenue managers are made

aware of when or where campaigns are being scheduled and the kinds of response rates expected from these campaigns, they better anticipate how demand is impacted, and are able to adjust demand forecasts appropriately.

Sharing information is one approach, but an even better approach is to integrate the analytic outputs from marketing and revenue management. Let's explore the benefits of giving marketers access to the same information that revenue managers and revenue management systems regularly use to make decisions. When choosing the best combination of campaigns upon which to execute, what if marketers could include information from revenue management, such as the demand forecast, prevailing price, demand-to-come and occupancy forecast? What could marketers do with that information?

One of the best places to start is with promotions placement. Most revenue management systems forecast the unconstrained demand for each property on specific dates, as well as the constrained form of that demand, or occupancy forecast. Using the number of rooms forecasted to be unsold as a constraint, and the types of campaigns and response rates as decision variables, it is possible for a marketing optimization engine to select the campaigns and customer segments that stimulate the right amount of demand to sell the unfulfilled rooms at the right time and place.

Another opportunity occurs if the reach of revenue management also extends to creating demand forecasts for other areas of the operations, such as gaming, restaurants, retail, spa, and or golf. By understanding softer periods, marketing can design promotional packages to stimulate demand when and where it is needed.

In addition, if marketers have access to the prevailing price and price sensitivity information from revenue management, then they can manage promotions pricing more effectively. As explained earlier, marketers are responsible for nurturing demand and for stimulating demand for specific periods. Promotions and offers are tools that can be used for either approach; the main difference between the two is how targeted the offers are. When nurturing demand, marketers can rely on existing information regarding customers to help design promotions, such as what offers have been successful in the past. Price response information from revenue management can be useful in evaluating the response of the overall customer base to a general offer. When stimulating demand for specific periods with targeted offers, incorporating information from revenue management can help ensure that any offers are not below a level that would dilute base demand or be rejected for availability by later revenue management decisions.

Using the outputs from revenue management and pricing, marketing can ensure that the customer experience is not impacted by promotions that are difficult to understand or redeem. Using outputs from revenue management and pricing analytics as part of marketing optimization approach ensures that marketing's efforts are going into the right promotions for the right customers to stimulate the exact amount of demand needed to maximize revenue. However, revenue management and pricing is not the only department that can help supply analytic outputs to improve the results of marketing. Marketing can also review the outputs of the services operations teams.

USING OUTPUTS FROM SERVICE OPERATIONS

Using service operation outputs for marketing first requires a strong foundation that combines and updates customer data that marketers use to obtain analytic results. In turn, being able to segment the customer database allows for a more targeted and personalized approach to reaching customers.

Each service outlet likely uses a unique and, in many cases, proprietary point of sale system that is capable of reporting and analysis, which can be sufficient for analyzing the data contained therein. However, with many propriety systems from different source systems that use various back-end databases, the ability to combine that data becomes extremely difficult and generating meaningful analytic output nearly impossible. For example, the food and beverage outlets could use one system; the hotel and reservations another, but these likely both differ from the systems being used at the spa, casino, gift shop, golf shop, concierge, entertainment venue, etc. Integrating all of the various source systems into a solid foundational database is absolutely necessary to develop a targeted and personalized approach to marketing where service outputs can be used. The decision to embark on the approach will include investing in the necessary systems architecture and compute power to analyze the output data – an Enterprise Data Warehouse (EDW).

SAS® Master Data Management is an approach that uses data cleansing, data governance, combining, and updating customer records from source system data. Customer records are then effectively updated from each customer touch point (outlet) that they patronize; and the service outlet's relevant output data is fed into the master data where it creates or updates the "dynamic record" or "one source of truth" that is vital to marketers and their use of service outlet analytics. Your service operations teams have the most opportunity for face-to-face interactions with the guest, so why not have those teams help keep that profile data up-to-date and build a better 360-degree view of your customers?

Source system data is moved into the data warehouse through Extract, Transform, and Load processes (ETL). Once the data is in the warehouse it can be used for analytic models, reporting, and various marketing campaigns. It is

absolutely vital for each department stakeholder to have confidence in the data that the SAS Master Data Management solution processes and integrates into the warehouse where the "dynamic record" becomes the foundation of knowledge that marketers use. A data warehouse that has issues delivering the "one source of truth" will not have the marketer's confidence and will not be used. If the data is junk going into the data warehouse, the analytics model will produce junk coming out. With a solid data warehouse, which includes all the source system data from the service outlets and where the "dynamic record" exists, marketers can enhance their marketing efforts with enticing offers that target their customers with a more personalized approach.

With the rise of social media, consumers are becoming accustomed to viewing advertisements and receiving offers that pertain to something that they have viewed or purchased in the past. Companies are also recommending future consumption based on past behavior using predictive modeling and market basket analysis. Access to these advanced analytic methods is not restricted to the larger web companies. This type of modeling is also available to marketers in the hospitality industry using data mining. Data mining enables marketers to identify which customers might book a spa and lunch package or golf, dinner, and show package, etc., or even to send slot offers to play a different type of slot machine based on what type the customer played in the past.

Here are additional examples of using analytic outputs to enhance marketing:

1. Hotel – Hotel lift analysis to determine profitability to customer stays in the hotel vs. patronizing outlets without a room night. Does the customer play more in the casino when he also stays in the hotel? A Length of Stay analysis can assist with understanding if customers are more profitable for one-, two-, or three-night stays, etc. Do customers tend to play or spend more on the first day and little to nothing on days two or three?

2. Food and Beverage – You can overlay customer service scores with survey data, and with food and beverage revenues to know which venues and menu items excite and delight the customer and which do not. Food and beverage managers can also collaborate with the purchasing and marketing departments to offer specials and incentives when inventory levels become excessive or stagnant.

3. Entertainment Venue – By mapping the entertainment venue floor, you can track which high-value customers have reserved seats for the event. With master data management, these reservations can be linked with the "dynamic record." This data enables the host or concierge to see the customer's restaurant preferences, for example, and proactively book their dinner reservation or greet the customer at the venue with their favorite cocktails or hors d'oeuvres. A master data management approach makes it possible to overlay all sorts of customer data on top of other data so that marketers can provide world-class service and exceed customer expectations.

4. Casino Player Development and Casino Marketing – If you track rated play, unrated play, market (competitor) based play (based on publicly provided data), you can perform a relationship-based analysis. This helps you understand which customers are likely to benefit from being assigned a host and how that host interaction increases what customers spend and their loyalty over time.

CUSTOMER SERVICE HISTORY DATA

Another great way to employ service outlet data to enhance marketing efforts is by using customer service history data through surveys and social media ratings that produce feedback. Surveys are regularly sent out to collect preferences and to see how the overall customer experience was at a specific outlet or for the entire stay in general at the hotel or resort. This is a formal survey, whereas social media sites and rating sites are voluntary and highly visible.

Formal survey data is presented in the form of questions and answers where choices are excellent, very good, neutral, needs improvements, or poor. This type of survey data is easily quantifiable. Each classification is assigned a numeric value (for example, excellent is a 10, very good and 8, and so forth). Written comments in surveys, or from rating and social sites, are very valuable in determining sentiment analysis. Both types of survey data can be loaded into the EDW and used for further analysis.

Textual data is extremely valuable as customers write their opinion in oftentimes short words or concise statements and share them on social sites where others look for feedback when searching about which venue to patronize. This type of textual data is unstructured data that can be analyzed by SAS® Text Miner, when it is licensed and used with SAS® Enterprise Miner™. Text mining is a process that employs a set of algorithms for converting unstructured text into structured data objects and then uses quantitative methods to analyze these data objects.

Text mining also integrates the textual data with quantitative data to enrich predictive modeling. Once the text is converted it can be used as an input variable to develop predictive models that scores the customer database and/or that segment each customer into segments (for example: High-Value, Due Now, Past Due, etc.). Marketers can also use the model to score their customer database. These models can then use the service center outputs, in the form of survey, social, or rating site data, to predict customer satisfaction and service satisfaction ratings that marketers can use.

USING OUTPUTS FROM MARKETING

Marketers can also look to sources internal to marketing to help drive better decisions. Perhaps it is time for marketers to revisit some of their base assumptions about data and look for additional opportunities in their own analytic approaches. Digital data represents a great opportunity for marketers to understand customer intent and act on their customer's behavior. In the past, web analytics approaches have focused on aggregating digital data as a first step, and then producing summary reporting. However, data storage has become relatively inexpensive and processing power has increased exponentially, enabling marketers to access, process, and analyze all of their digital data without sacrificing speed or accuracy.

You can take raw behavioral data that has been collected from websites, mobile apps, and social media and, using predictive analytics can use it to gain a more comprehensive understanding of your customer's preferences and behaviors. Using digital behavioral data, business rules, and predictive analytics helps you to prescribe which outbound marketing offer to use in your e-mail or remarketing campaign. Digital behavioral data and business rules applied to real-time predictive analytics enables you to provide a personalized visitor experience when a prospect returns to your website for the n^{th} time this week. The same type of data and real-time predictive analytics can also drive you toward an integrated marketing approach that expands beyond digital interactions to every customer touch point.

Data on how your customers use your websites is captured using tags, which are placed on pages from which data should be collected. One of the challenges of traditional web analytics approaches is that data collection efforts have been focused on webpage metrics, rather than on gathering data that can help gain insights on customer behaviors. You might collect data on any of the following: what are the top web pages vs. who is looking at which of your products; which pages have errors vs. why did customer "XYZ123" not complete their reservation transaction; what is being searched for vs. what type of customer is searching; where did traffic come from vs. what stimulated each visit; and what paths are taken through our sites vs. did the customer reach the business goal, whether it is a registration or a reservation.

Changing your focus from web metrics to customer behavior analysis means expanding the scope of data that is collected to include detailed data about how customers use your sites, along with other attributes that help better describe and segment those customers. Once captured, data needs to undergo transformation to ready it for more focused analytics. However, for many hospitality companies using web analytics, the focus on search is not only driving the data collection process, but also the experience that a customer has on hotel websites.

Let's walk through a typical scenario for a customer on a hotel company's website, or brand.com. The customer goes to brand.com and requests hotels for a specific city for specific dates. The search engine returns a list of properties that are available and their rates. Perhaps the customer can further refine this list by selecting specific amenities, or by requesting a specific flag or distance from a city or location. Once the customer selects the hotel they are interested in, they can click through to the webpage for that property that shows more details and (hopefully!) make a reservation.

This is a missed opportunity for hospitality companies. Imagine, instead, the following scenario. The customer goes to brand.com to search for a hotel. Brand.com, after the customer authenticates, (whether using a cookie, loyalty program membership, or click through from an e-mail), gathers the customers browsing history, service history from inbound call center interactions, stay and purchase history from the customer relationship management system, and analytically derived propensities from the customer's lifetime history with the company. Using that information, the hotel company can not only offer a hotel property and price up front, but also present amenities and additional offers that are tailored to this customer.

The customer's experience in the second scenario is much more meaningful, because brand.com delivers results and offers that are relevant and valuable to that customer. Offers that are not underpinned by analytics are often viewed as "noise" by your customers. Real-time personalization often results in fewer, more relevant offers. This decreases marketing costs while at the same time increases your marketing effectiveness. Delivering personalized experiences to your customers has the ability to increase their loyalty to your brand.

A personalized response to your customers relies on access to a complete customer profile. Though the concept of a complete customer profile is easy to understand, it can be difficult to achieve. Creating this profile involves bringing together data from online and offline channels. Throughout this process, contact, response, and transactional history

needs to be interspersed throughout the life cycle of the customer. Customer lifetime value, profitability, behavioral analysis, and response models can also be included, and that is where we need to apply advanced analytics.

Using analytics, along with data mining and data management techniques, you can turn raw data collected from your sites into powerful insights on your customers. Customer lifetime value models can be used in quantifying the current and future value of your customers. Quantifying the value of each customer is critical if you want to focus on capturing, retaining, and developing relationships with those who are the most valuable to you. For hotel companies who are sharing limited inventory with a variety of different customers, lifetime value can be important in helping you decide who to offer your limited inventory to, as well as maintaining profitability on any offers that you make to those customers.

Behavioral analysis helps you understand the customer intent behind certain combinations of customer segments and search segments. Knowing the intent of your customer helps you deliver results that match what that customer needs and wants. For example, if a customer that you can identify as a business traveler with a search type that you can identify as a business search is searching brand.com for a one-night stay on a Tuesday, should you be showing him a mix of airport and downtown properties, or a mix of outer suburbs properties and golf resorts? While you can jump quickly to a conclusion based on what you think is intuitive, behavioral analysis will help you harness countless transactions and their results to identify the best answer for that customer and his specific search.

CONCLUSION

Marketing departments have been spending considerable time and resources on developing analytic capabilities and have achieved remarkable results. However, in today's changing marketplace, companies are challenged to create experiences that continue to excite and delight their customers. In this paper we reviewed how analytics from other departments can help build a more complete understanding of customer preferences and behaviors and help marketing to identify the best opportunities.

We identified that marketers can use analytics from revenue management, including demand forecasts for rooms, demand forecasts for ancillary services such as spa, golf, and food and beverage, as well as price information to positively impact promotions design, placement, and pricing. We examined the analytics of service operations and found that we could use inputs from customer feedback analysis for messaging and positioning, and an enhanced customer profile with master data management.

Last, we looked at the opportunities for enhancing analytics within marketing itself and found that by using more of the digital data that is available to us as well as upgraded storage and processing power, we can supplement what we are already doing for outbound and inbound marketing, while at the same time come closer to an integrated marketing framework and real-time personalization.

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RECOMMENDED READING

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