

# Bringing Predictive Analytics to the Hotel Industry



# Contents

Chapter 1: Defining Predictive Analytics.....	3
1.1 What Does Predictive Analytics Mean? .....	3
1.2 How is Predictive Analytics Different? .....	3
1.3 What Are The Opportunities? .....	4
1.4 Who is Applying Predictive Analytics? .....	4
1.5 Where Can Predictive Analytics Be Used?.....	4
Chapter 2: Overcoming Silos.....	5
2.1 Implementation Challenges .....	5
2.2 Overcoming Silos.....	6
Chapter 3: What Data Is Important?.....	7
3.1 Data Sources .....	7
3.2 New data sources .....	8
3.3 Using data effectively .....	8
Chapter 4: How To Create A Coherent Strategy .....	9
4.1 Creating a Strategy.....	9
4.2 Multi-Tenancy Cloud Solutions .....	9
4.3 Customer Segmentation & Demand Optimization .....	10
4.4 Open Pricing .....	10
4.5 Flexible Strategy .....	11
Chapter 5: The Advantages of Combined Data.....	12
5.1 El Cortez Hotel & Casino Case Study .....	12
5.2 Trump Hotel Collection Case Study.....	13
Chapter 6: Conclusion .....	14
6.1 Implementing Predictive Analytics.....	14
6.2 Future Development .....	15
References.....	16

## 1

# Defining Predictive Analytics

In order to use predictive analytics effectively, we need to understand what it is, what are its possibilities for the travel and hospitality industries, and where it can be used. From there, we need to weigh up the challenges of implementing a predictive analytics system and look at ways to overcome business silos – which are detrimental to the collection and sharing of data.

We need to understand what data is important, how we can collect this data and what new data sources are available, before moving on to create a coherent strategy that fully optimizes on the recommendations to come out of the predictive analytics process.

This white paper will cover all these topics and more, as well as detailing the advantages of using predictive analytics and the results it can achieve, demonstrated with case studies from hotels already using analytics to good effect.

## 1.1 What Does Predictive Analytics Mean?

'Big data' has become a cornerstone of business strategy in recent years. Business Intelligence (BI) focuses on collecting as much data as possible on customer behavior, buying patterns and even cancellation or lost sales data.

The important part is what comes next. Big data is all well and good, but it is how you use this data that will truly propel your business forward. Predictive analytics is about taking the data, analyzing it and then using it to predict future business levels, customer behavior and demand.

"BI is the ability [to create] reports that basically show you a whole lot of data – you then interpret that data and decide on what action to take. Predictive analytics is the end result of what the action is supposed to be. I can give you a report and show you trends about a destination or hotel and then leave you to your own devices. However, predictive analytics gives you the

data and the answers, because you've built a predictive model that looks at the data and analyses it for you," says Marco Benvenuti, Co-Founder/Chief Analytics & Product Officer, Duetto Research.

With the rapid growth of online travel retail and review sites, the hospitality industry has a wealth of data to mine to find such patterns.

The customer now crosses between devices and touchpoints as they go through their daily lives. From the radio or tablet in the morning, to smartphone on their commute, onwards to desktop and telephone during the working day and back, via smartphone, tablet, TV and laptop at the day's end (for more on this topic see Eye for Travel's Smart Analytics 2015: Identify, Track and Target the Modern Digital Consumer Effectively). This provides a wealth of data, and countless two-way communication options.

## 1.2 How is Predictive Analytics Different?

Predictive Analytics is not new. Business intelligence models have been around for decades. What is new is the volume of data available, the reliability of the data and its real-time nature. This means businesses can respond to customer demand even quicker and provide a more personalized service and pricing point.

The hotel industry has worked with forecasting models for many years. Property management systems, such as Micros Opera, which were built to report on transactions, have provided plenty of data for revenue managers to create forecasts and take actions. Predictive analytics takes this concept further by increasing the number of data streams, identifying trends and projecting these forward to create automated forecasts for the revenue manager.

The rest of the travel industry is no different to hotels. Airlines, car rental and cruise companies have also been



generating data sets for years. All that has changed is that data storage capacities and the accessibility of this data – especially with the birth of the cloud – have increased, which has been combined with improvements in the accuracy of data mining and analytics tools. Add in third-party data sets and you have a powerful recipe for predictive analytics.

### 1.3 What Are The Opportunities?

For a data-rich industry, such as travel, predictive analytics presents a whole host of opportunities.

Principally, it is best used to:

1. Predict trends.
2. Understand customers.
3. Improve business performance.
4. Drive strategic decision making.
5. Predict behaviors.

It seems 2015 could be the year predictive analytics really comes to the fore. IBM's Global CEO Study cited that travel and transportation CEOs rank "information explosion" among the top reasons to transform their organizations, with 51% of CEOs saying they will implement new technologies in the next three years.

According to Shannon Adelman – Market Development Advisor, Travel & Transportation Industry of IBM – there are three ways the travel industry can drive value through analytics:

- **Customer analytics and loyalty marketing:** Using big data and analytics to create a seamless journey from A to B.
- **Capacity and pricing optimization:** Being able to analyze data in near real time allows for more dynamic and smarter pricing options, optimized capacity planning and effective yield management.
- **Predictive maintenance analytics:** Particularly important to airlines and cruise ships, being able to capture and analyze more complete operational data means companies can schedule maintenance and maintain their assets more effectively.

Predictive analytics is good for the customer too. The data can create a clear picture of who the customer is and what they want. From this a hotel or destination can tailor its ancillary services to meet these needs, providing a better customer experience and increasing incremental revenue at the same time.

### 1.4 Who is Applying Predictive Analytics?

Many industries are already using predictive analytics to forecast business demands and to craft products and services. Prime examples include marketing, financial services, insurance, telecommunications, retail, health-care and pharmaceuticals. One of the most well-known applications is in credit scoring, where financial services firms aim to score a customer's viability for credit by studying their credit history, previous loan applications and repayments, and other customer data.

Online retail is another prime example. Amazon is a market leader with its 'if you like this, you might also like this' approach to sales. According to Predictive Analytics World, the retailer has patented an algorithm-based system that could, feasibly, know what you want to buy before you do.

Within the travel industry, large hotel chains, such as IHG and Hyatt, have started leveraging their big data to better serve the customer and predict occupancy levels and room rates. However, predictive analytics is not confined to large scale organization, with hotel groups such as Trump Hotel Collection, Red Lion Hotels and Warwick Hotels are all utilizing predictive analytics to better understand their client needs and business demands (see Section 5 for examples).

### 1.5 Where Can Predictive Analytics Be Used?

According to Marco Benvenuti, Co-Founder/Chief Analytics & Product Officer, Duetto Research, predictive analytics can be used in any area of hotel operations. He says it can "work in any part of travel where you have a perishable inventory, where it will at some point expire and where you have a difference between the moment where the purchase is made and consumed." It can therefore be used to sell restaurants, rooms, golf, spas, meeting spaces etc.

Smart hoteliers are already realizing this. Integrated resorts can use predictive analytics to promote and price a wide range of downstream ancillary services. By knowing who will be visiting your hotel, and what their demographics, interests and potential spend are, hotels can predict how to promote and price spa treatments, golf tee times, shows and entertainment options (for more see EyeForTravel's Ancillary Revenues in the Hospitality Industry report).

## 2

## Overcoming Silos

One of the biggest challenges the travel and hospitality sectors, and many other industries, face when trying to implement predictive analytics is a silo mentality. Silos can operate on many levels: departmental or property, chain or brand clusters, and destination or location clusters. Convincing everyone that sharing information is a good thing can prove a challenge. However, when information flows freely businesses can flourish. In this chapter we will be looking at business silos and how to overcome them.

### 2.1 Implementation Challenges

The expression ‘possession is nine tenths of the law’ is a great way to highlight why business silos get built and are so fiercely protected. Business managers and department heads are often reluctant to share data, for fear that by letting the data go they will lose possession, lose control, and lose out.

As mentioned in Chapter 1, the hospitality and travel industries have large amounts of data, but historically there has been a lack of co-ordination between hotel departments, individual hotels and even hotels within the same chain or group.

Even the databases used by hotels create silos. Customer relationship management (CRM) systems, reservation systems, and loyalty and marketing programs rarely work with revenue management and sales platforms.

Hotels need to clean up their data and link-up guest profiles across these various databases. It is only by taking a combined approach to data mining that the statistics can paint a true picture, and present customer analysis and demand forecasting.

“You need to make sure you have access to data because if you don’t have access to the right data in real time, then it becomes a problem and you can’t learn

*Hotels need to clean up their data and link-up guest profiles across these various databases. It is only by taking a combined approach to data mining that the statistics can paint a true picture, and present customer analysis and demand forecasting.*

how to react to the recommendations of a predictive analytics system,” says Marco Benvenuti, Co-Founder/ Chief Analytics & Product Officer, Duetto Research.

According to Benvenuti, another challenge is in taking away the ‘gut feeling’ that many revenue managers go on.

“You have to take away the gut feeling, which was the dominant force, and use the predictive analytics model to make decisions. The fact that it is predictive tells you that you are dealing with the future, so you are not going to be 100% right. However, with ‘gut feeling’ you can’t be 100% right either, and it’s even harder to realize when you are wrong.

“A predictive analytics model is a forecast, and it is sometimes going to be wrong because you are gambling on the future. You have to accept failure fast, learn from it, and eventually you will get it more right. If I make 10 decisions and two are not optimal, then I



have to ask what can I learn from those two decisions to make better decisions the next time round," he explains.

## 2.2 Overcoming Silos

Silos prevent vital data mining and best-practice sharing. This will hinder your customer analysis and demand forecasting.

The travel and hospitality industries are data rich. What's more, this data can be continually added to, to develop a more comprehensive view of the customer, the market and pricing points.

Breaking down the silos in a business is about changing corporate culture. You need to increase cross-team co-operation.

However, once you begin to break down the silos, business leaders will be quick to see the positives. Instead of processing department-level or even property-level data, you can soon move on to market-level data. And with that comes even more precise forecasting and business gains.

One of the best ways to overcome the silo challenge is to change the corporate culture. You need to encourage integrated decision-making before you can integrate data. One suggestion is to encourage manual data sharing. Get two departments to share their data and begin using analytics. Let them find a common business problem and then work together to find a solution, using the data at hand. This process will give them a better understanding of how shared data can be used.

As your data mining gathers momentum you may want to move all the data to a central location. The cloud provides a perfect solution for this, as it is accessible from any location, and allows for data convergence from a variety of sources too.

Another consideration is the type of database you run. NoSQL data stores are simpler and more cost effective to run, and can load and store a lot of low-level fact data points. Duetto uses MongoDB, a cross-platform document-orientated database.

"If you are dealing with a cloud solution you can combine all the data sources – combine data from your own website with that of a whole city – and now, instead of looking at demand for 10 hotels operating in a silo, you have a sample of the whole city. A consortium of hotels that share information will see

everyone benefit from seeing the total demand for a city. However, this can only happen if this is on a cloud-based solution," explains Duetto's Benvenuti.

Once companies have overcome their silo mentality, and embraced a data-rich environment, new customer data can be collected to fill in even further details. We look in-depth at what type of data is important in the next chapter.

## 3

## What Data Is Important?

Big data, as the name suggests, can be, well, big. There's now lots of data out there, and a lot of it is easy to harvest – but is all of it relevant? In this chapter we will be considering what data you should aim to capture, what sources to use and what new forms of data collection are now available. Here, we will consider how analytics has changed alongside big data: from descriptive analytics that simply described the past; through to diagnostic analytics that explained why something happened; to predictive analytics, which studies the past, asks why has that happened, and then considers what this means for the future.

### 3.1 Data Sources

The hospitality and travel industries generate a wealth of information about their clients, which helps build a picture of who your buyer persona is. Here are just some of the most traditional and basic data you can capture:

- Country of origin.
- Booking channel.
- Time of booking (seasonal changes).
- Lead time.
- Room rate for the booking.
- Type of room booked.
- Length of stay.
- Responses to marketing campaigns and discounts, e.g. direct email marketing.
- Competitor performance (ADR, occupancy, etc.).
- Destination data (tourist arrivals, tourist expenditure, room nights).

For hotels, Marco Benvenuti, Co-Founder/Chief Analytics & Product Officer, Duetto Research says that the Property Management System (PMS) should be your number one data source. He points out that – as the cash register for the hotel – the PMS tells you what has passed through the books, so you can map out booking and spend trends.

*The Property Management System (PMS) should be your number one data source.*

**Marco Benvenuti, Co-Founder/Chief Analytics & Product Officer, Duetto Research**

From there, Benvenuti recommends you look at booking sources to give you a clearer picture of demand. This will tell you who looked at your hotel and when, who booked, and who decided to go elsewhere.

However, perhaps more important than the PMS and booking source is the lost business information from your own website.

“Start looking at what people came to your website for and when? What, when and where they were looking to purchase – and then what did they do? Did they book or not? The information on the people that did not book is as important as the information of those that did book – that gives you a complete picture,” says Benvenuti.

Beyond the hotel, the website and the booking agent there are further data sources that can be brought into the predictive analytics mix. Look at the weather – beach and golf resorts will naturally do better when the weather is kind. Look at the local airport – does it have particularly strong ‘change over’ days when more flights typically land and take off? And consider how this trends in a month and in a year – this again gives you a clearer picture of potential demand.

Finally, look at your competitors. What are their yields and what are they pricing at? However, make sure you benchmark competitively.

“Traditionally, hotels have been exposed for not selecting the right hotels as competitors – the competitor set has been led by an egotistical GM who wants to benchmark against the best hotel in the city or the hotel across the street,” warns Benvenuti.

### 3.2 New data sources

Your customer is more switched on and plugged in than ever. This means they are more educated on what is out there and what price is competitive. For hotels, following the new age of social media is vital to stay front of mind and price sensitive with clients.

New data sources are coming to the fore continuously, and include:

- **Social media** – listen to what the market is saying about you and your competitors. Watch for spikes in traffic and analyze this: is it the result of a marketing campaign by you, a competitor or your destination?
- **Review data** from sources such as TripAdvisor, Priceline or Orbitz.
- **Customer data** from other sources for purchases in other sectors.
- **Search engine traffic** – use Google Analytics to see where your web traffic is coming from.

“All the new data sources, including social media and reviews, are useful in understanding the way in which you compete with other hotels. The customer is telling you that you compete with a hotel three blocks away, because that is the other hotel they are looking at. The customer is king and decides who you compete with,” says Benvenuti.

However, using new data sources comes with a caveat: “Using social media to determine a daily price can be tricky because things don’t move that fast - people might converse and use reviews long before they make a transaction,” Benvenuti adds.

### 3.3 Using data effectively

Effective predictive analytics brings together traditional data sources, such as transactional data from a hotel PMS, and combines these with other applicable data sources, such as those listed above, to create a funnel to gauge the true appetite for rooms in any given market on any future date.

Craig Weissman, Chief Technology Officer and Co-Founder at Duetto, gives this example: “If an airport is five times as compressed compared to the same time

as the year before, the funnel can be seen more clearly. Or with web shopping data, if 50 more people are shopping for a specific date compared to a similar date, it’s easier to infer there’s more demand for rooms that day. And if 15 more consumers are booking at a specific price point than is typical, it can be inferred that there is less price sensitivity and rates should be raised.”

The math is similar to the algorithms used by online retailers such as Amazon, who can infer peaks and troughs in business days, weeks and months in advance – and then take action. One prime example is Amazon’s Cyber Black Friday promotions, which have become something of an ecommerce phenomenon in recent years.

The aim of predictive analytics – as the name suggests – is to look forward. Traditionally, hotels have looked backwards, at bookings, room rates and revenues, in order to predict the future. The game changer is to bring in new data sources that provide a fuller picture and, therefore, more accurate forecast conversion and price optimization.

The final aim is to:

- Manage future demand.
- Target specified markets.
- Target the right consumer at the right time.

However, no matter how strong the data, the hotel industry (along with aviation and other travel sectors) offers up its own unique challenges with no-shows and cancellations. Its inventory is perishable and therefore predictive analytics needs to form part of a coherent market strategy. More on that in the next chapter.

*The customer is king and decides who you compete with.*

**Marco Benvenuti, Co-Founder/Chief Analytics & Product Officer, Duetto Research**

## 4

## How To Create A Coherent Strategy

Once you have collected your data and analyzed it, the next phase is to incorporate this into a coherent strategy that can take in the whole market, or elements in it, depending on which parts of the marketing funnel you most want to target.

The cloud and open sourcing computing now make it possible to converge data from multiple sources into one – but how do you factor these elements into a moving average and what impact can this have on pricing?

### 4.1 Creating a Strategy

First, you need to ask some questions of your business and your targets before you can get started on creating a strategy. Consider:

- What you want to achieve and what are your business objectives?
- Think across channels and consider how it fits into your strategic vision
- How you can be proactive rather than reactive – this is the key advantage of using predictive analytics

Then you need to put on your customer cap. Who is your target market and what are their needs? Social media and review sites will help you build a better picture of your clientele.

### 4.2 Multi-Tenancy Cloud Solutions

As mentioned in Chapter 2, the benefits of working on a cloud-based system are many. A multitenant Software as a Service (SaaS) architecture is more productive than a server-based system. True cloud architecture ensures that all clients are using the latest version of the software, which leads to greater innovation for predictive analytics.

However, the hotel industry has been slow to see the benefits of the cloud and what it can bring to predictive

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analytics and business strategy, as Marco Benvenuti, Co-Founder/Chief Analytics & Product Officer, Duetto Research, explains: “The hotel industry is sometimes a little confused about what cloud computing is and doesn’t understand what it is to leverage from an IT standpoint by using the cloud. When you have multiple hotels you need to do cross hotel analysis – gathering data together for a market-wide view – if you are not on a cloud solution you are still dealing with servers that need to communicate with each other and shuttle the information across to each server, on a cloud solution all data is at your disposal. By having data at your disposal, the predictive analytics model can far more efficiently provide the analysis across multiple hotels and multiple markets.”

Duetto deploys on AWS, which turns hardware into software. This means the system does not need to hire or build servers and datacenters. “We just spin up and down machines via code and that leads to a far more productive application development and deployment world,” says Craig Weissman, Chief Technology Officer and Co-Founder at Duetto.

“We also use almost exclusively open-source technologies: MongoDB, Java, Eclipse, Chef, JavaScript, R, etc. It truly is a golden age for software development with robust, well-tested tools,” he adds.

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**Craig Weissman, Chief Technology Officer and Co-Founder at Duetto.**

### 4.3 Customer Segmentation & Demand Optimization

You've defined your goals and are using the cloud to converge data and analyze it. But what is the data telling you and how can you use it to put forward a personal message and personal pricing strategy for your customers?

"Your CRM system handles all the proprietary information on the customer and should be another data source you put into the cloud and use to make smart decisions, such as creating a personalized price," says Benvenuti.

Using predictive analytics, you can accurately predict customer behavior and buying patterns, and as a result predict demand.

Predictive analytics enables you to segment customers in a different way than the traditional market segment. Market segmentation is often based on booking source, so an online travel agency (OTA) is a market segment and your website is a market segment, but this doesn't mean that all the people booking from that segment behave the same.

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"You need to slice your data. For some you need to combine them by their propensity to spend while on property: do they order room service and how much is their total spend?" says Benvenuti.

### 4.4 Open Pricing

Once you have your segments you can move away from the traditional method of pricing the hotel using Best Available Rate (BAR), whereby you have one rate you are managing and every other discount is a fixed percentage taken from this BAR rate.

*You need to move to open pricing, where you price all different segments independently of each other.*

**Marco Benvenuti, Co-Founder/Chief Analytics & Product Officer, Duetto Research**

"This is a restricted model. You need to move to open pricing, where you price all different segments independently of each other. You start by looking at different segments of loyalty and find the right rate and the right time for that specific customer at that time," Benvenuti advises.

With an open rate system you no longer need to shut off room rates. Benvenuti gives the example of a hotel that has a three-day pattern: low demand – high demand – low demand. "In high demand you start closing down discounts. If I want to stay the three nights I can't book it because that price is not open to me for the three nights. If I'm dealing with open pricing all three night are available to me at a bespoke price for me – then I can decide to book it. For the hotel, a lower high demand price is covered by a higher low-demand price for the shoulder dates," he explains.

The impact on return on investment can be substantial. By moving away from the one BAR rate and embracing open pricing you are able to price your customers on their ability to pay. This in turn optimizes your average daily rate (ADR) and brings in a higher RevPAR (revenue per available room). Customers using the Duetto Research Predictive Analytics app in 2015 have seen an average 14.2% increase in revenue, which is 7.2% more than the industry average, or +7.2% in RevPAR Index.



#### 4.5 Flexible Strategy

Predictive analytics helps you build a bigger, and more accurate picture, of business demand. However, it also brings more flexibility to your business – with the ability to react to market changes quicker. For example, a storm causes the local airport to suspend flights overnight – suddenly you have people who need rooms and you need to price accordingly.

“The key is to partner with providers who give you data in a semi-real time fashion. The weather is easy – its online [and] real time – but with a flight cancellation you need to get that data so the system can start flagging that there is something unusual going on and give you an alert and recommendations to take. The key at that point is not to find the right answer right away but to alert the customer there is something unusual going on and then they can step in and make the decision,” says Benvenuti.

Using predictive analytics and an open pricing system can lead to a much richer revenue management strategy. This can then be integrated not only with the hotel’s core systems, such as the PMS, but can make pricing recommendations across the entire travel ecosystem – including global distribution systems, online travel agents and traditional travel agencies – with real-time pricing changes going live instantly, and tailored to each market segment.

## 5

## The Advantages of Combined Data

In the previous chapters we've explained what predictive analytics is, what data you should consider collecting to make it work and how to implement it into a business strategy. Now, we'll look at two case studies of hotels using predictive analytics to increase revenue and understand the client better.

Read on to find out how the Trump Hotel Collection of 14 properties and El Cortez Hotel & Casino in Las Vegas both use Duetto and the advantages this has delivered in terms of better pricing based on more accurate demand forecasts and full customer profiles. The case studies show how predictive analytics can impact an individual property by bringing increase visibility and insights to customer spend and demand, alongside how a chain of properties can utilize predictive analytics to find new opportunities to maximize revenue.

### 5.1 El Cortez Hotel & Casino Case Study

The El Cortez Hotel and Casino opened in Las Vegas 1941. The property offers 364 rooms; slots, table games and a full race and sports book; and a wide range of food and beverage options.

El Cortez Hotel & Casino has been using the Duetto system since 2013. The property, much like the rest of the Las Vegas market, was hit by the economic downturn in 2008. The recession changed consumer-spending behavior and the hotel realized it needed to jolt revenues.

The El Cortez implemented the Duetto GameChanger application as the foundation for their revenue strategy, a cloud-based system that added significant visibility and insights through market intelligence, accurate forecasting, pricing recommendations and historical data comparisons. The system's unique Smart Alerts feature highlighted key dates that needed attention, which would normally be overlooked.

Using Duetto, the hotel's management were able to track website shopping traffic, measure lost business, and analyze regrets and denials to better understand shopping behavior by day and refine their pricing strategy.

#### The Results

The using the predictive analytics data the hotel made a number of changes to its pricing policy, including:

- Decreasing certain midweek rates, while increasing rates on weekends and other busy dates
- Pulling back certain discounts on specific dates, when it didn't need the extra promotions
- Yielding by casino segment to identify higher value players, and implementing variable casino cash and complementary pricing actions, such as free drinks or hotel rooms
- Maintaining rate parity between third parties and direct channels, such as the hotel website, call centre and walk-in guests
- Expanding third-party distribution to include additional OTAs and wholesalers

**The above changes created a 30% increase in cash revenue, 10% increase in ADR and 109% increase in direct room nights. The hotel also grew its occupancy rate by 4.5%.**

"The Duetto solution has completely transformed our revenue strategy. It gives us the tools and confidence to be much more proactive in our decision-making for various channels and segments. Before implementing the system we didn't have the visibility to understand where we were giving up margin and profit, and in a competitive market like ours, we could no longer afford that," says Kenny Epstein, Owner, CEO and Chairman, El Cortez Hotel & Casino.

## 5.2 Trump Hotel Collection Case Study



*Trump International Hotel & Tower® Chicago, part of the Trump Hotel Collection*

The Trump Hotel collection consists of 14 hotels with three new properties opening in 2016. The portfolio includes the 176-room Trump International Hotel & Tower New York and the 92-storey Trump International Hotel & Tower® Chicago.

Trump Hotel Collection is a fairly new Duetto customer. The chain of properties has been using predictive analytics to find new opportunities to maximize revenue on a daily basis. Through web shopping regrets and denials, Trump Hotel Collection finally has insight into what its customers are shopping for, how they are shopping, and what they are/are not purchasing. This has enabled the chain to make more strategic decisions on its marketing campaigns and take decisions in real time instead of waiting until after to see results.

By utilizing new consumer-centric data like web shopping information, airlift, weather and more, Duetto has far more insight into future demand than those just using historical information.

“With open pricing, we can optimize that demand with flexible and precision pricing across all channels and segments. By never closing out rate plans and only yielding our offers up and down every customer has the opportunity to book regardless of length of stay, day of arrival and other restrictions we historically have used. This allows us to not only maximize revenue on our high demand days but also improve our shoulder dates as well,” says Nathan Crisp, Vice President, Revenue Management & Distribution, Trump Hotel Collection.

### Opportunities

“We’re very new to the system and it’s hard to quantify results yet. But we are extremely optimistic and pleased so far,” says Crisp.

“Tracking lost business via web shopping regrets and denials opens a world of opportunity for marketers. Being able to know that 5 people booked on a date out of 100 shopping provides great comparison to a date with maybe 5 bookings out of 10 shopping. We’re excited to take advantage of that information — to gain more insight into price elasticity and future demand — and then leverage that with better pricing.”

## 6

## Conclusion

Predictive analytics is not new, but new technological developments do make it easier and more accurate than ever. Remember – if you know enough about someone, what they are doing or not doing, then you can predict their future behavior. The more you know about them the more accurate your prediction will be.

“Predictive analytics is nothing new. The difference now is the amount of data, the reliability of that data and the real time nature of that data. This makes the predictive analytics model reactive up to the second and more personalized,” says Marco Benvenuti, Co-Founder/Chief Analytics & Product Officer, Duetto Research.

Technological innovations will continue to rule the pace at which predictive analytics develops. The cloud will become more important as a place for converging data, while open-source software will provide new and innovative ways to analyze the data and implement changes. Both will continue to lower the overhead costs of running a predictive analytics system.

The hotel industry now needs to work hard to remove its business silos, embrace new technology such as the

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cloud, and implement SaaS to streamline and optimize their revenue strategy. The benefits of this will be far-reaching.

“Data can help a lot of markets and help a lot of different functions – all the downstreams in a destination can benefit. Destinations will start to understand what people do when they visit a specific destination,” explains Benvenuti.

Integrated resorts, managing multiple revenue streams such as rooms, golf and spas, will be able to leverage the data from one department to another, and this will provide a powerful picture of who the customer is and what their price point is.

### 6.1 Implementing Predictive Analytics

The hotel and travel industries now face the challenge of implementing predictive analytics or being left behind by the competition. Seeing the potential is one thing – realizing the potential is another. Companies need to take a strategic approach. This should include:

**Research** – What data can you capture? What are your competitors doing with predictive analytics? How are customers using predictive analytics? What are the potential benefits?

**Strategize** – Where are the gaps in your marketing funnel and how can you participate in big data? What data is currently available but being ignored?

**Change** – For predictive analytics to be effective you may have to make changes to your business, its operational processes and your corporate culture. Everyone needs to be on board – there is no room for a silo mentality when collecting and analyzing data.

**Partner** – Collective and shared data is far more powerful and useful than a single data report on a single hotel. Consider who you can partner with – airlines, golf clubs, spas, retail providers and your local tourism marketing board are all contenders. Remember, your customer does not book a hotel in isolation – they consider what the destination has to offer as a whole and place their hotel choice within this context. You need to look at the bigger picture and understand what your customer is looking for, and then deliver on it.

## 6.2 Future Development

As mentioned in Chapter 1, there are many industry segments out there already implementing predictive analytics on a day-to-day basis, such as marketing, financial services, insurance, telecommunications, retail, healthcare and pharmaceuticals.

According to Craig Weissman, Chief Technology Officer and Co-Founder at Duetto, this list is only going to grow. “Predictive analytics apps are hard to build with a wide variety of skills required. I think we will see more combinations of technologists and domain experts, like at Duetto, building purpose-built analytic apps for other traditional industries, including transportation, government, military and law enforcement, construction, agriculture, etc.”

Predictive analytics is a powerful tool that is becoming more important and more accurate as data sources increase and technology evolves. Businesses need to consider whether or not they can afford to ignore this growing trend. For hotels, this marks a turning point in revenue strategy. There is no longer room for ‘gut feeling’ when pricing – you need to know your market, know your customer and be able to quickly react when things change. Predictive analytics makes this easier than ever.

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