Big Data and How It Impacts Hotels

You might have heard about the hot phrase of "Big Data" these days and are wondering what it is. Is it related to me? Is it just another catching IT term which comes and goes on a monthly basis? Will I miss an important opportunity for my hotel if I don't heed its rising and applications?

Big Data simply refers to the large amount of data generated in our current world every day, and on top of that, the new ways of storing, retrieving, and analyzing them, predicting people's behavior, and optimizing business operations. Big Data does not only mean "more data", the scale of data generation induces a paradigm change: new business insights that do not come from the sampling and surveying of your customers, but from their aggregated digital footprints of actual behavior. In addition, we may not know the causality relationship between certain data and our revenue or profit; we simply need to know the correlations. For example, if knowing that changing the carpet in our hotel lobby from green to orange will increase our occupancy by 5%, we will simply change the carpet to orange without asking why! Of course this is just one odd example and you rarely find such extreme cases - but who knows!

Researchers found out that in the United States, a hurricane warning will increase the sales of strawberry-flavored pop-tarts in Walmart. Of course we can speculate the reasons but it is not necessary nor easy for a business person to engage in a serious investigation. Walmart simply put out strawberry-flavored pop-tarts whenever the National Hurricane Center issues a warning and enjoys a sales increase. This is one example of the impact of Big Data: when combining large amount of data from different sources together, unexpected patterns may emerge.

Think about the data your guests generated every day: your website's log data, the hotel App's log data, the call center logs, the amount of traffic in the lobby, the sales records for all the venues in the hotel, search engine query volumes for your brand, social media mentions, your potential guests' location data, etc. All these are indictors of your customers' likes and dislikes, motivations, travel planning behavior, and actual stay experience. You might have already paid attention to a few of these data sources. However, combining them together will make the data even more powerful and telling. For example, researchers have found that search engine query volume for a certain destination will predict the area's average occupancy in the coming four weeks; similar studies showed that the web traffic of a destination marketing organization also predict the average occupancy of that area. It will be reasonable to assume that your hotel's website traffic will be an important indicator of your occupancy and demand in the near future. More importantly, combining these data sources with social media content will be more likely to generate a more accurate forecasting for your hotel's occupancy.

In summary, a hotelier can utilize Big Data in the following ways:

1. Understanding your guests. What are their likes and dislikes? How do they plan their stay? When do they start booking their hotel rooms? What are the service weaknesses which impact your occupancy and revenue?
2. Predicting your customers’ activities and future business performance. How likely that you will have a overbooked hotel in a busy season? Will you need to hire more hourly staff to handle them? How much increase in occupancy you can expect in the Food and Wine festival period next month?

3. How to personalize your service and improving customer experience? Through Big Data, you probably could target each individual guest's likes and dislikes and really achieve the market size of one. You can capture their word-of-mouth and trip planning from various sources, ensuring you know more about each guest!

4. How to optimize business operations? What are the key predictors of our hotel's occupancy and revenue? How can we design our marketing and operation strategy to improve those key predictors?

Research in the across road of hospitality and Big Data is still limited. Also the off-the-shelf tools for these purposes have emerged but still in an early stage, such as Datameer, Solace Systems, and Metric Insights. Those platforms can help you pull all sorts of data from diverse sources and put them into a dashboard-like user interface. Many commercial or free statistical and data mining software, such as SAS, R, and Oracle, provides some types of tools but they are all cumbersome to use for hotel’s environment. However, with the further development of data and tools, this market will eventually produce effective tools for productivity purpose. I will recommend to start look into those platforms and start to play around with them. The evolution between data, tools, and our understanding of this phenomenon will converge and produce real results for our hotels in the near future.

Thus, from a macro perspective, the research and applications of Big Data is still in its early stage. Like many similar technology hypes, it will go through an early stage of hyping and fading, and finally settling down when the new technology finally starts to mature and its productivity starts to increase. The following graphs shows the searches on google.com for the keywords "Big Data" and "Cloud Computing". Cloud computing start to decline and Big Data is still in its hype stage. This validated Gartner’s cycle of technology hype graph show belown. Nonetheless, the utilization and application of Big Data will show its impact and significance eventually after the hype dies down. Those hoteliers who moved at an early stage will gain a competitive advantage.
Google Search Volume for "Big Data"

Google Search Volume for "Cloud Computing"

Source: www.google.com/trends