

Data analytics dilemma at Alpen Hotel

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Abstract

Data analytics is currently the buzzword for the hospitality industry to stay ahead of their competitors. Service providers use data analytics to ensure their brand remains relevant for customers. Using data analytics in customer relationship management is a relatively novel initiative for the hospitality industry to enhance the efforts of customer relationship management. Obtaining customers' data (i.e. customers' hotel stay and preferences) provides both opportunity and challenges for the hospitality industry. Data analytics helps the hospitality industry to quickly, effectively, and efficiently pursue data-driven decision-making. At the same time, acquiring relevant customers' data is a challenge, for example, data privacy and confidentiality. This case study is based on Alpen Hotel (pseudonym), a luxury hotel in Singapore with a good standing in the hospitality industry. This case is focused on the issues they experienced in implementing data analytics as part of the hotel's customer relationship management efforts. This case study aims to highlight data analytics dilemma at the hotel and may create an opportunity for hospitality educators to work interdisciplinary with faculties from an information systems or technology discipline. Finally, the case study may enhance knowledge and minimise the practice gap between industry and academia.

Keywords

Data analytics, data privacy, data confidentiality, customer relationship management, the hospitality industry

Introduction

This case aims to provide students with authentic learning. Authentic learning incorporates the real-world knowledge and practices into a transferable knowledge in the classroom (Lombardi, 2007). This teaching case is based on the real-world data and practice. The authors collected the data through the personal interview with a regional marketing manager at Alpen Hotel. The interview is conducted at the Alpen, a luxury Singapore hotel. The hotel is an internationally known brand and has a well-known reputation for personalised customer service. The manager's name involved in this interview is pseudonymised. Once the interview data have been transcribed, we then extracted the relevant themes and issues from the data for the case description.

Alpen Hotel is considering a more aggressive approach in implementing a full-fledged and comprehensive data analytics system in their hotel. The purpose of the data analytics is to supplement their customer relationship management (CRM) efforts. CRM has been the prominent branch

of management used extensively in the hospitality industry to capture market share by understanding and observing the guest's preferences and dislikes. Data analytics has emerged as the preferred tool for keeping pace with today's more sophisticated and tech-savvy hotel guests.

Alpen Hotel's mission is to serve every customer with personalised attention and care. Management and staff must provide excellent service to ensure their customers' experience remains positive. Understanding the needs of their customers is, therefore, of paramount importance to Alpen Hotel. John (pseudonym) is the person-in-charge of this project. He is the regional marketing analyst at Alpen Hotel. His professional backgrounds are in travel and

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information system and technology. He is familiar with the data analytics set-up and implementation.

By the end of 2012, Alpen Hotel decided to implement data analytics in their customer service department to add value to their customers' journey. With relevant and sufficient information, data analytics can be used to better understand the hotel guests, effectively drive CRM efforts, and strategically drive critical decisions. The implementation of data analytics at Alpen Hotel, however, remains a dilemma. John identified several inescapable issues that must be addressed to successfully implement a comprehensive data analytics: (1) ensure the privacy and confidentiality of data collected from the guests, (2) ensure the security of the information collected from the guests, (3) integrate the data across multiple functions and departments, (4) establish a framework to ensure the quality of data, and (5) generate value from the data collected. As one of the leading hospitality service providers, Alpen Hotel must balance the extent of data they should collect. The data have to be relevant to support customer profiling in CRM. At the same time, the data collection must be convenient, confidential, and of benefit to customers.

Why data analytics is essential to the hotel industry?

As data analytics is one of the essential enablers for business transformations, the adoption and implementation of data analytics are becoming a necessity for various industries. The hospitality service is one of the industries that heavily rely on customers' data and information. Undoubtedly, the increasing availability of data creates opportunities for the hotel industry to better understand their business and customers. The pervasiveness of mobile technology coupled with the technological advancement of artificial intelligence, machine learning, and deep learning enables a more exciting experience for customers when dealing with the hotel industry. This technological advancement would create opportunities for the hotel industry to conduct more sophisticated data analytics (i.e. predictive analytics and prescriptive analytics), for example, millions of travellers in a day interacting with the hotel industry, customer clustering, and dynamic hotel pricing.

The amount of data available for data analytics is proliferating, ranging from the Internet of things (IoT) to social network applications. These data include, for example, structured data (e.g. credit card transactions, surveys, polling, and rating) and unstructured data like social media posting (e.g. texts, photos, and videos, and search engine trend). These types of data are essential for the hotel industry. Through these data, the hotel industry can obtain knowledge related to travellers' booking, comments, and feedback (Hopken et al., 2015). Hotel industry can also better understand the pattern and identify which destinations are involved in one leisure trip (Önder, 2017). Travellers' comments on

hotel booking platform like Agoda.com, for example, can provide information related to travellers' sentiment towards a particular hotel brand (Wu et al., 2017). Another example: researchers can observe travellers' experiences and concerns related to Airbnb services through travellers' review. Eight essential themes related to travellers' experiences emerged, namely, stay, host, place, location, apartment, room, city, and home (Brochado et al., 2017).

Data analytics primarily consists of four stages, namely, data collection, data extraction, data warehousing, and knowledge generation (Chaudhuri et al., 2011; Chen et al., 2012; Fuchs et al., 2014). Multiple functions in the hotel industry and even external parties are included in these stages. Each data analytics stage has its challenges and opportunities. Data collection can be undertaken directly from travellers or obtained through data brokers or other third-party companies (King and Forder, 2016). Data extraction including data cleansing likely consumes a significant amount of time in the data analytics stages (Lohr, 2014). Contrary to structured data which contained less noisy data, unstructured data typically have a high level of dirty data, such as grammatical errors, poor standardisation, and corrupt data. Data cleansing reduces the level of noise data and minimises errors to make the data fit for use, generating relevant insight to decision-makers. Travellers' comments on social media are one of the examples of unstructured data that requires careful attention during data extraction. Data warehousing ensures all relevant data are consolidated and available for multiple purposes undertaken by various functions in the hotel industry. Finally, knowledge generation is the stage that leverages data to be able to create value for the hotel industry. Various statistical analyses and machine learning algorithms are used to analyse the data and deliver relevant information for decision-making.

While data are becoming ubiquitous and accessible, implementing data analytics effectively remains a conundrum. Similar to other industries, the hotel industry may encounter multiple questions. These questions primarily come from the above five data analytics stages: How to protect customers' privacy? What data to collect from customers? How to best extract and clean the data? How it should be analysed and evaluated? and How the results can be translated into values? (Mazzei and Noble, 2017). The aforementioned questions reflect challenges in data analytics.

Data collection, for example, has potential implications for customers' privacy and data protection. Generating good customer profiling for customisation and personalisation services necessitates the hotel industry to collect data from their customers, data brokers, or other third-party companies. Consumers' profiles can help the hotel to identify business opportunities and mitigate any potential risks related to individual customers (King and Forder, 2016). At the same time, the relevant data to be collected can be a challenge. Identifiable data may contain sensitive data where consumers may prefer not to share with others for

profiling purposes. Not all customers would like to share their religious perspectives, financial status, occupation, salary range, sexual orientation, or race (King and Forder, 2016). Furthermore, storing these identifiable data requires high security and data protection controls.

The capability of the hotel industry to generate value creation is another significant challenge. A large amount of data with sophisticated technology to analyse them may not be impactful unless the hotel industry has the capability to generate value from the data. This ability requires not only technical knowledge but also a business understanding of the hotel industry. Insight from the data can be simply used as a tool for operational or strategic decision-making (Mazzei and Noble, 2017). The latter use of data will have a significant impact on the hotel industry.

Data analytics and CRM in the hospitality industry

Data analytics in the hotel industry aims to gain more understanding of customer behaviour to improve CRM efforts. CRM has been the prominent branch of management used extensively in the hospitality industry to capture market share by understanding and observing the guest's preferences and dislikes. Understanding the travellers' behaviour and expectations is necessary for the hotel industry to comprehend and make efforts to retain their customers as part of their CRM programme. Such an understanding would lead to better customisation and personalisation services which are the core practices of CRM.

CRM evolves from the basic concept of customer service and taking it to the next level by engaging its customer such as a personalised service. In the early days, the CRM system was practised by the major players in the hotel industry. Nowadays, hotels worldwide have a CRM system to identify and develop a long-term business relationship with customers. CRM has become an important system of firms' marketing strategy to retain its loyal customer, which helps to increase its market share, promote its brand, and drive profit. To be successful in the increasingly complex and competitive business, companies must have the capability to digitally harness all the available information from the CRM system. Consequently, data analytics captured the attention of the decision-makers in the hospitality industry as the key to an organisation's survival.

CRM started in as a marketing effort in positioning service providers and brands in a competitive market such as hospitality, leisure, and tourism. Prior to the emergence of data analytics, CRM has been one of the primary strategies used in the hospitality industry to maintain market competitiveness. CRM has a long history in the hospitality industry, and it is a topic that is well discussed and researched by scholars (Becker et al., 2009; Garrido-Moreno et al., 2014; Gonzalez-Urbe et al., 2013; Josiassen et al., 2014; Piccoli et al., 2003; Wu and Lu,

2012). CRM has become a valuable marketing strategy tool and data analytics provision for the hotel to brand and position itself. CRM enables the delivery of value to the consumer in terms of service and efficiency. CRM is associated with a popular form of brand positioning, marketing, and strategic management for the hospitality industry. Successful CRM likely guarantees the loyalty of consumers, increases profits through word-of-mouth, and improves hotels' branding (i.e. Luck and Lancaster, 2013; Xie et al., 2015). Implementing a proper CRM is therefore of paramount importance for a hotelier to acquire intelligence on its consumers. The pressure of maintaining hotels' position in the competitive market and obtaining the market share has accelerated the interest in data analytics in pursuing optimised CRM.

The case: Alpen Hotel

Alpen Hotel is part of a luxury international hotel chain with good standing in the hospitality industry. The hotel has consistently provided award-winning services for each guest. Alpen Hotel has always prided itself on being able to deliver a high-quality personalised experience for their guests and maintain consistency in their service. These effort results in the hotel remain competitive in the market.

Alpen Hotel's preliminary data analytics revealed that 50% of previous guests returned as repeat guests. The statistics occurred because hotel service staff delivered a personalised service for the guest. Data also indicated that 70% of guests would extend their stay if they had experienced a personalised service while in the hotel. Alpen Hotel is planning to progressively implement data analytics in their CRM system to understand their guests better. The regional marketing analyst of Alpen Hotel, John, is assigned to manage the data analytics implementation. John was a travel professional who has more than 10 years of experience in the travel and hospitality industry. Prior to joining Alpen Hotel as a full-time marketing analyst, several years earlier, he was exposed to and involved in the early stages of data analytics. His previous job required him to support the process of data analytics and generate results from the data for the management to make business and marketing decisions. Aligned with the goals of Alpen Hotel, John's role is to provide support for the marketing team using the data analytics ensuring the enterprise to stay competitive in the industry.

John is also responsible for the integration and implementation of data analytics in the hotel system. Increased customer experience and satisfaction through customised and personalised services are among the ultimate goals of Alpen Hotel. John would, therefore, need to gather more intelligence on the hotel guest. He believes that the hotel will lose its current competitive edge if they are unable to continue to understand and personalise the service that matches the guest's expectation especially in today's

market where customers could switch their loyalty from one hotel brand to another quickly.

Data analytics development at Alpen Hotel

Customer data management had been ongoing for several years at Alpen Hotel. However, John observed that, there were an increasing number of hotels that had adopted data analytics to better understand customer behaviour in the hotel industry. He also realised that industry adoption of data analytics would enable other hotels to gain a potential strategic advantage. This would also increase competitiveness among hotels of market awareness, repositioning, and strategic branding.

Having the intelligence obtained from data collected from the customers, hotel companies can analyse the data to highlight the critical information related to their guests. Such an understanding would lead to better customisation and personalisation services that could bring any hotels' ranking a level up. Intelligence gained through data analytics enables a hotel to strengthen their market position and branding. To be competitive in the market, therefore, John, under the management direction of Alpen Hotel, was moving towards data analytics as a source of information.

John required better customer insights to support improved decision-making. However, privacy concerns were driving guests to become more uncomfortable and resistant to sharing their personal details, for example, income range, workplace details, interests, and preferences. Guest data were collected through spa bookings, catering, and the marketing department. John collected these data to generate reports designed to help the marketing team to develop and personalise the guest experience. Increased efforts by the hotel to broaden data collection were similarly met with renewed resistance from increasingly cautious guests to offer these data. Guest concerns focused on how the data would be stored, used, and who would have access to their data. Improving personalised hotel guest service would be difficult for John and Alpen Hotel without access to the relevant guest data.

Mergers and acquisitions are another growing trends in the hospitality industry. This trend leads to consolidation in the market. John is aware of how the consolidation is happening among hotel brands. There is strong competition in the market due to the fragmented nature of the hospitality industry. Consolidation among hotel brands has not eased competition. The consolidation among the hotel brands, however, has no significant impact to ease the competition in the hospitality. Furthermore, the consolidation of hotel brands does not mean that these brands have achieved a competitive advantage in terms of brand position or market share. This challenge occurs due to the hospitality industry not having access to comprehensive data analytics. The hotel industry does not currently have neither centralised

databases nor platforms for shared data analytics. A number of hotel brands continue to be plagued by silos when working with data analytics.

This challenge leads to hotels that are unable to compare against their competitors or ascertain their position in the marketplace. Thus, currently, all hotels are only working in silos. However, the consolidation of hotel brands means that a particular hotel brand could potentially gather their resources in terms of location, financial resources, and most importantly, market intelligence and gained the upper hand in positioning themselves better in the market. John faced a significant challenge in his role to support the Alpen Hotel marketing team position themselves in the market, the industry, and among their competitors. Each hotel held their own data and conducted their own internal data analytics. John internally questioned the feasibility of initiating shared data analytics and resource platforms with other hotel brands. Would that be possible for John to initiate shared data analytics platform with other hotel brands for combined resources?

Internally, John was thinking that he should carefully analyse and decide on how he should move forward with the data analytics implementation at Alpen Hotel. He must think of the most viable way of implementing data analytics in his company. Therefore, his company can benefit from the data analytics implementation. While implementing the data analytics in the hotel, John encountered five major issues. First, customers may hesitate to be tracked and questions may arise related to privacy infringement by the hospitality service providers. Obtaining the relevant data from customers, however, remains a challenging issue for John. Collecting relevant customer data can help John to produce insightful consumer profile for customising and personalising their services and deliver effective targeted marketing communications. Alpen Hotel has been capturing customers' information for 5 years through their reservations at the spa, catering, and room reservation to help the marketing department plan their strategic move. At the same time, the consequence of customers' data collection would likely arise from the privacy-intrusive profiling of individuals (King and Forder, 2016). Against this backdrop, what would be the directions and the way ahead for John to deal with customers' privacy and confidentiality in the future?

Second, John has to balance the guests' personalisation and privacy trade-off. He has to ensure the data collected from the customers are secure and safe to maintain the customers' trust. To encourage guests to share their details with Alpen Hotel, John would have to ensure that their guests' data and personal information are guarded with layers of secured encryption. Customers who are willing to impart their personal and financial details expect the organisation to fiercely guard the data. One case of data breaching could destroy the customers' trust and be devastating for the organisation. The hotel could take years to recover lost market share/pending caused by a data breach. John pondered

what other initiatives Alpen Hotel could consider to pacify guest privacy fears and encourage them to share their data.

Third, due to the non-integrated hotel systems, John also encountered the challenge of synchronising and integrating the guest data collected. Data synchronisation and integration help multiple departments at Alpen Hotel to generate value from the data. Currently, Alpen Hotel experiences data silos. The data remain under the control of a particular department and are isolated from the rest of the company. John should be able to tear down the data silos and spread the valuable data collected by the hotel to multiple departments. To get usable, meaningful, and robust analytics, John has to make sure that he has collected sufficient customers' information to produce such analytics that is useful and applicable to the entire company.

Fourth, as highlighted in the above paragraph, due to the non-integrated hotel systems, the data collected were fragmented. John encountered challenges in standardising the data, resulting in the data collected from the guest are of value and quality. At the same time, the data that have been collected are considered 'unclean', and fragmented with missing details. To be able to proceed with data analytics, John has to provide a framework for data cleansing that lay out the data type, code, and standards to generate high-quality data. John must find a solution to standardise the data collection and have the data interpretable across multiple functions and departments. The data would, therefore, be used for further analytics to understand the guests' behaviour and to enhance the CRM programme.

Finally, one major issue that John encountered was to generate value from the data obtained. In its current raw form, however, the data are meaningless and of no value to the marketing team. Moreover, the non-integrated hotel systems do not allow hotelier to have control and visibility over its business operations due to the lack of real-time information. These are some of the most important questions that John must solve to move forward with the data analytics implementation.

Discussion questions

With all the challenges that John encountered, which one should he prioritise? From the management's point of view, the obvious questions that directly affected the CRM programme are 'What does the guest really want?' and 'What would define a good hospitality service?'. Without the input from the guest, Alpen Hotel was unable to predict the current and future guests' behaviour and needs. Moreover, the management of Alpen Hotel is concerned with their market position after observing the increased efforts in data analytics implementation by other hotel brands. It is only a matter of time when all hotels hold the most important asset of the organisation which is the data from the guest. However, in implementing the data analytics system at Alpen Hotel, John also encountered resistance from guests

who are concerned with the security and privacy of their data. What should John do to balance out the need to collect more data from the guest and protect the data at the same time? In view of the CRM efforts, is there another way to deliver personalised service to the guest other than collecting more data from the guest?

At the same time, the consolidation of hotel brands could potentially be a threat because they are able to gather more market intelligence due to their increased number of hotels and finance. With guests having less and lesser brand loyalty, how does John help Alpen Hotel to keep its position in the market? Moreover, John is facing other difficulties in implementing the data analytics at Alpen Hotel such as the non-integration of hotel systems, the need for data cleaning and standardisation, and the inability to generate value out of the raw data that can be used across departments. In this case, how does John prioritise which challenges he should undertake first?

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