Study on How to Make Use of Business Analysis Based on Big Data to Realize the Fine Operation and Management of Shopping Mall

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ABSTRACT

Internet has changed the way of people's life and communication, and big data emerging with the Internet can achieve precision marketing and bring the management reform of commercial real estate. But how shopping mall can obtain the core competitiveness? Big data tool is an inevitable choice. It is of high practical value and important reference value to study on the precision marketing strategy and operation management of shopping center on big data era, and issues are mainly discussed in this paper from four aspects, which are as follows: big data and business analysis, the application of big data in shopping mall, how to take use of big data for precision marketing of shopping mall and big data strategy analysis of Wanda shopping mall as an example. Therefore, it can provide corresponding suggestions and references for shopping mall to take advantage of big data for operation management.

INTRODUCTION

Social networks, cloud computing, e-commerce and the rapid development of mobile internet have brought the human society into a new era of big data. Big data is not only the trend of the enterprise, but also a kind of technology innovation changing the lifestyle of human beings. The significant potential, commercial value and great impact of big data on the business model has been widely recognized. As the recognition and value on big data has increased rapidly, companies, public institutions, intelligence agencies have started to have interest on big data. Of course, there were analytic techniques based on data in past as well, but data was limited and analysis also limited. However nowadays, interest on structured data and unstructured data has started to increase due to social media, and interest on big data

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analysis is rising. The era of Big Data has begun. Computer scientists, physicists, economists, mathematicians, political scientists, informationist, sociologists, and other scholars are clamoring for access to the massive quantities of information produced by and about people, things, and their interactions. Diverse groups argue about the potential benefits and costs of analyzing genetic sequences, social media interactions, health records, phone logs, government records, and other digital traces left by people. Significant questions emerge. Will large-scale search data help us create better tools, services, and public goods? Or will it usher in a new wave of privacy incursions and invasive marketing?

Big data is far more powerful than the analytics of the past. Executives can measure and therefore manage more precisely than ever before. They can make better predictions and smarter decisions. They can target more-effective interventions in areas that so far have been dominated by senses and intuition rather than by data and rigor. The differences between big data and analytics are a matter of volume, velocity, and variety: More data now cross the internet every second than were stored in the entire internet 20 years ago. Nearly real-time information makes it possible for a company to be much more agile than its competitors. And that information can come from social networks, images, sensors, the web, or other unstructured sources. The managerial challenges, however, are very real. Senior decision makers have to learn to ask the right questions and embrace evidence-based decision making. Organizations must hire scientists who can find patterns in very large data sets and translate them into useful business information. IT departments have to work hard to integrate all the relevant internal and external sources of data. Business intelligence and analytics (BI&A) has emerged as an important area of study for both practitioners and researchers, reflecting the magnitude and impact of data-related problems to be solved in contemporary business organizations.

With the changes in people's consumption concept and disposable income growth, consumers are showing a growing demand for specialized and high-level features. Shopping mall tenant mix has become a key influence consumer choice to the mall, shopping frequency and shopping time determines the success or failure of a shopping center. Big data development catalyzed a large number of related industries, but also brought about business model innovation and the transformation of business management. There is no fine operation and management without data. It is the long-term survival method for the shopping center by using the data to carry on fine operation management. But how to take use of data analysis and record to form valuable information, to mine the commercial value hidden behind large data so as to make the shopping center more competitive?

LITERATURE REVIEW

**Big data and Business Analysis**

A. Mcafee, E. Brynjolfsson. (2012) offer two success stories to illustrate how companies are using big data: PASSUR Aerospace enables airlines to match their actual and estimated arrival times. Sears Holdings directly analyzes its incoming store data to make promotions much more precise and faster. H. Chen et al (2012) proposed that current research in BI&A is analyzed and challenges and opportunities associated with BI&A research and education are identified, and also report a bibliometric study of critical BI&A publications, researchers, and research topics based on more than a decade of related academic and industry publications. Danah
Boyd, Kate Crawford (2012) offer six provocations to spark conversations about the issues of Big Data: a cultural, technological, and scholarly phenomenon that rests on the interplay of technology, analysis, and mythology that provokes extensive utopian and dystopian rhetoric in the article. WK Dong et al(2015) systematically analyzes user’s behavior and growth factors of internet shopping mall using big data and proposes a strategic operation plan using this analysis in the paper.

**Shopping Mall**

PH Bloch et al.(1994) discussed consumer activity within multiple mall habitats by an empirical study and specifically explores differences in mall habitat activity patterns and identifies mall related shopping orientations that were useful in explaining these differences. Consumers' interrelationships with malls as consumption sites were explored using the concept of a habitat drawn from the ecological sciences. YA de Montjoye et al.(2015) found that understanding the privacy of these data sets is key to their broad use and, ultimately, their impact, and that knowing the price of a transaction increases the risk of reidentification by 22% on average. Finally, it showed that even data sets that provided coarse information at any or all of the dimensions provide little anonymity and that women were more reidentifiable than men in credit card metadata by way of studying 3 months of credit card records for 1.1 million people. D Park et al. (2011) studied the different effects of online consumer reviews (OCRs) on consumers' purchase Intentions depending on trust in online shopping mall in view of an advertising perspective by investigating the effects of two types of OCRs and OEAs (the OCRs embed in online sellers’ advertisements) on consumers' purchase intention from an informational influence perspective; and investigating the effects of OCRs from a credibility perspective. The factors included are the type of OCRs and the trust level of online shopping malls. The results show that OCRs are more influenced by trust in online shopping malls than OEAs. JM Lai (2016) studied the Impacts of Large-scale Shopping Mall Tenant Mix to Consumers. The empirical results show that the tenant diversity and compatibility of consumer perceived value and satisfaction has a significant positive impact, and tenant diversity is greater than the impact on the compatibility of consumer role. A Mittal, D Jhamb (2016) in the paper identifies the main attributes that lead to shoppers and patronage of a shopping mall in the Indian context. The review of literature identifies sixteen salient attributes which converge into the following four main dimensions that can be considered as determinants of shopping mall attractiveness: (1) merchandising (2) variety & selection (3) milieu & facilities, and (4) convenience. RM Gomes, F Paula(2016) studied the shopping mall image by way of systematic review of 40 years of research, which employed bibliometric analysis and content analysis, both the roots and the frontier of research were identified. A list of mall image attributes was generated and identified those that seemed theoretically more relevant in capturing the construct of mall image. G Marinic (2016) posits that obsolete buildings of American suburbia offer clues to an alternative future. It examines how incrementally adapted shopping malls allow immigrant and underrepresented communities to seek socioeconomic freedom via cultural practices and mercantilism. Case studies are used to demonstrate how commercial interiors often migrate toward futures that markedly contrast with their original design intentions. F Ahmed (2016) carried on a feasibility study of a wifi-based vehicular ad hoc network in the Westfield Shopping Mall parking lot.
using field trial measurements and simulation. Vehicular Ad Hoc Networks (VANETs) play an important role in reducing car accidents on the road as well as in the parking lots of large shopping malls. An empirical study using radio propagation measurements to get an insight into the performance of a VANET system in the shopping mall environment is required to assist the efficient design and deployment of such systems.

THE APPLICATION OF BIG DATA IN SHOPPING CENTER

Firstly, the first value of big data is to balance supply and demand, make supply and demand more precise, and enhance the consumer experience, to allow customers to feel the unexpected experience with the minimum cost, so that the service upgrade. The behavior habit of members can be analyzed by big data, thus pushed a brand of coupons, the accurate information of O2O activity or art salon to a member at a certain time, in order to achieve precision marketing through big data.

Secondly, an efficient online and offline operating platform is built based on big data, utilizing passenger flow monitoring system to monitor, acquire and analyze offline passenger flow information. Euclid recently launched a solution without additional hardware; that is Euclid Zero—Google Analytics of offline shopping mall (data statistics service is supplied by the well-known Internet company Google for the website), Euclid Zero based on the existing WiFi network can help merchant shop monitor passenger flow. Nowadays the acquisition and analysis of offline passenger flow data relying on wifi to achieve is one of hot popular applications for shopping center using big data. Shopping centers hope to own data tools that have a similar function like as the Cookies of online e-commerce sites, which can record customer behavior, preferences, and conversion ratio.

Thirdly, we can use Alipay to get through online to offline and payment. Alipay is currently exploring to guide the diversion flow of people for cooperation business through the portal page information, and even to introduce a set of promotion system similar as Ali mother in the future. Alipay conceived of designing WiFi for a merchant store, at the same time, users can be introduced to the brand Tmall stores, Alipay, App, WeChat public service account through the portal information page.

Fourthly, we can use big data for operations optimization, and optimize the life cycle management of members. The operation strategy of shopping mall based on operating passenger flow. Through the life cycle management of the overall membership, we can find the node period of membership maintenance, plateau, high value consumption and expected loss period. It is the only way to grasp the rule to help to guide the day-to-day member management of business operations. Through customer preference analysis, the brand that the loyal members may be interested in will be taken as an target for accumulated points exchange, accurately acquire consumer shopping preferences, take use of the network to open up their interactive relationship of the offline physical store and online VIP account.

HOW TO USE BIG DATA TO ACHIEVE THE PRECISE OPERATION OF SHOPPING CENTERS?

What kind of big data thinking does shopping center need for fine operation? From market survey to customer satisfaction survey, the traditional sampling survey
method is the most commonly analysis method used by the operators, but the biggest drawback is that the conclusion is not accurate, not able to precisely help managers make clear future decision. Finally, the actual experience is needed to make some decisions although after a lot of investigation and analysis, which let business managers to take greater risks. In the big data era, the direction of business management transformation will be changed from the experience-based to data-based. Big data can be applied to two aspects, which one is full data, breaking the traditional model that analyze the future operation trend by sampling in the management process of the shopping center, but to consider all of the data from the overall consumer and the corresponding consumption process to analyze the operation trend; secondly it is to find the associated factors in all the trend, and grasp the future trend through the correlation.

We will analyze how shopping malls use big data to achieve accurate operation from the three most basic aspects in the following: the business circle analysis, potential customers mining, format layout.

Business Circle Analysis and Location Linked Together

Business circle analysis is not only the basic work of shopping center location or site selection, but also the most important step for the brand shop locating and selecting shopping center. For shopping centers, in the traditional shopping district, or CBD business district, or suburban, mainstream customers group is different, the format combination naturally should not be the same. Once we determine the location of shopping district range, basically established the basic consumer market and potential customers, also determines the direction of shopping center attracting investment, what brand recruited, marketing strategy, and brand also needs judging if it is matched with the shopping center by business circle analysis. Therefore, the business circle has a direct and important impact on the positioning of the shopping center, shopping center need to adjust itself to adapt to consumption demand changes in the business circle.

Beijing Xidan Joy business district is a good example representing differential positioning that is higher than the business circle. However, as the traditional young shopping district in Beijing, the consumption passenger flow is huge. It proposed the idea of from Xidan, higher than Xidan, to be as the International Youth City leading Beijing". Xidan Joy took a different route, complementary with other enterprises, so that the shopping environment of entire business district has been improved.

It is necessary to do a lot of investigation before the site selection, but it relies on some basic data and information. When a business district is locating, business data analysis has several important dimensions: analysis of location, transportation, population status. That is the location accessibility, traffic convenience, close to the purchasing power. It can be known the details of the population surrounding commercial body through commercial real estate data platform, including GDP, retail sales, demographic data, population sex ratio, age ratio and other basic information and so on, you can basically determine an economic and demographic situation of the location.

Customer Group Data Mining, Collection of Valuable Information

The analysis of business district has a direct impact on the orientation of
shopping center, and the customer group has a direct impact on the sales of shopping center. Shopping center must begin to pay attention to the collection of important data from contacting with the customer for the first time, and mining industry upstream data and accurate data, and exchanging resources with different platforms, such as Alipay of Ali, WeChat of Tencent. We have to collect more valuable data through different internet tools.

Firstly, we must explore the advantage of platform data to do precision marketing oriented member. Shopping center should be as much as possible to explore their own advantages of platform data to development more member and use various means to accumulate customers, and cultivate the membership system of the shopping center. During serving the consumers it can use various means to collect membership data including both online and offline data, not just the transaction data and behavioral data for the shopping center, of which offline data is underestimated by most people, still need to be deeply excavated.

Secondly, Beijing Xidan Joy business district use customer group portrait to increase consumer adhesion. Taking Beijing Chaoyang Joy business district as an example, all the marketing, investment, operation and promotion activities of Chaoyang Joy business district is based on the big data analysis report to deploy important strategy. For consumer marketing, Joy will give different portrait for different consumer preferences and attributes, and use big data to push the promotional information that precise customer groups are interested in. On the one hand it will increase adhesion of consumers, on the other hand, it will reduce mass information disturbing members.

Every week Chaoyang joy team must divide all businesses into four categories according to the sales data and performance per ping as the following: star class businesses of the best benefits, businesses that the critical point taken a percentage have achieved and will reach, as well as the bad income businesses. The promotion department will compare the passenger flow, sales with historical peak data from data analysis report, and consider carrying out promotional activities for what kind of businesses in the next stage.

Joy carried on the different marketing in different time periods, in other words, previous precision data marketing, which is based on the RFM classification, that is recency, consumption frequency (Frequency) and the amount of consumption (Monetary) is changed to the data experience holding more interactive features. Accurately mining customer group data can make the operation direction of shopping center more clear, to adjust the marketing strategy, and to make the fastest response to any results and trend at any time.

**Good Format Layout to Produce a Virtuous Cycle**

Format combination is the core content of the shopping center, and the success of the shopping center is characterized by crossing horizontal contact between the passenger flow of a variety of formats and brands. What is your position, who is your customer group, and what kind of format combination need to match, which there is rule to follow. In fact, any commercial property are in a large life circle, whether shopping or dining, leisure, entertainment functions are all a large ecological group. Only all the format are compatible but not rejected, overall functional zoning and planning layout can support each other, match, supplement, it is possible to make the entire property ecosystem develop towards a healthy direction.
Format combination of shopping center include three objectives: the first is to bring convenience to the customer life; the second is to meet the needs of customer life; the third is to allow customers to buy with more convenience and pleasure. Taking Huarun colorful business distribute for example, there are some common characteristics of the regional business center, such as family and living needs oriented, and there are many different characteristics, such as consumer’s shopping habits, value orientation, etc. Therefore, different regional business centers need to comprehensively analyze the format combination from the functional needs of regional customers, emotional demands and other aspects.

Mining new brand using big data platform. Shopping center should apply the data generated by the matching of different formats, such as the data relations of restaurant and clothing sale, the main store and restaurant, the main store and clothing sales, etc. It should be good at integrating collected data content for multiple use. According to the changing trend of consumer demand, the format should also be adjusted accordingly. The future development direction and trend of the industry will be divided according to the values, health, parents and children, dream format (which to meet mental demands of consumer) is a future development direction of the industry.

TAKING BIG DATA ANALYTICAL STRATEGY OF WANDA PLAZA AS A CASE ANALYSIS

Wanda with a rapid development in recent years is expected that Wanda Plaza opened will arrive more than 160 by the end of 2016, and will become the world’s largest real estate companies. What are the big data core of Wanda Plaza?

The big data target of Wanda Plaza is to carry on trend research based on big data to help enhance the shopping center assets and to reduce mismatch. The Core is not random samples but all the data; not an independent entity, but rather a comprehensive association. In this mode of thinking, collecting a large amount of data is needed and having done seven aspects of data collection through online and offline. (1) Using data management for the whole lease process. (2) Archiving file management for all brands. (3) Statistics on information for all the city. (4). Recording POS transactions. (5) Surveillance and capturing passenger flow. (6). Tracking customer swath line, concerns goods and consumer habits using WiFi. (7) Establishing a large membership system to master all kinds of information for all members and their unique preferences related products, integrated all effective data into big data database to process, this is the basis of building big data management and full data pattern for Wanda.

CONCLUSIONS

With the advent of big data era, it is the long-term survival method for shopping mall to take use of big data for the fine operation and management. For business competition in the future, it is easy to copy the structure of commercial types and share businesses brand, and it is not difficult to carry on promotion activities. What really difficult to learn is data processing, data analysis and data mining. Therefore, it is needed to urgently think about the problem at present that how to use big data tools for fine operation of shopping mall. Big data will change all the decision-making
way of shopping mall, we have to speak based on the data, really realize the combination of online and offline (O2O) based on big data, so that the future development trend determines the future of shopping mall. But this paper still exist many deficiencies, I hope further in-depth consideration in the case of further study and the research object for further refinement in the further research.

REFERENCES