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# Research on Digital Marketing in Big Data Era



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ABSTRACT

The main reason for this study was to look into the concept of big data in order to find out how it can be used and optimize digital marketing activities. In order to apply the theories to the real business world, the thesis is commissioned by case company Netease Cloud Music.

The study helps to understand firstly the definition of big data and also the current stage of technological development of it by going through relevant theories. The topic is enlarged by introducing the concepts of digital marketing as well as how big data can be applied to digital marketing. The objectives of the study include: gathering theoretical information about big data and digital marketing, describing the current situation and performance of the case company Netease Cloud Music. Models such as PEST and new 4Cs are concluded to analyze the situation of the company. Combined with the result of the analysis, recommendations are made in the end. The analysis will look into external factors that have influence on the case company, also the current strength and weakness.

To help the analyzing process, a personal interview of one employee from the company was conducted in order to better understand the general strategy and current situation of the company's business. Despite that, all the data gathered for the analysis in this study are secondary data from internet data providers. Eventually, the recommendations are made based on the previous findings.

**Keywords** Big data, digital marketing, content marketing, mobile music industry

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# 1 INTRODUCTION

## 1.1 Background information

Big data, a term that is rarely known before but broadly discussed in the recent years. Generally saying, big data is just a hollow business term which is as empty as the so-called business intelligence. Of course, this doesn't mean that big data is meaningless, but it means it can be different things when it is defined in different subjects.

More and more enterprises have realized that big data can provide value as never before. Big data plays a role in almost every industry and is rapidly becoming a key driver of business growth and competitive advantage. One of the primary benefits of big data is its ability to turn data into potential revenue. (Villanova University, 2018) For marketing organizations, big data is the fundamental resource, born from the digital world we now live in. Till 2013, 98% plan to increase or significantly increase their use of marketing analytics, while 0% plan to decrease (2% say it will remain unchanged). (Adberdeen Group, 2013)

At present, the application of new-generation information technologies such as mobile Internet, cloud computing, and the Internet of Things has made enterprise have the ability to capture rich information as never before. All kinds of devices have joined the network, generating various types of data which would provide great social and commercial value.

Such as statistical data, transaction data, etc. are constantly emerging from all industries. According to CSDN's 2011 survey of cloud computing in China, more than 50% of enterprises generate more than 1T of data per day (CSDN, 2011). Big data has become an indispensable and important information foundation for government and corporate regarding decision-making, employee management, healthcare management, marketing activities, and product development. In particular, the application of big data in the field of marketing and innovation has greatly helped companies to accurately identify customer needs and greatly improve marketing effectiveness. It can be said that the use of big data runs through the entire marketing process and plays a vital role in the effectiveness of marketing.

In nowadays business world, companies spend hundreds of thousands of dollars on research and data to ensure they are always ahead of the competitors. Data has been a foundation of online successes. In this research, we will talk about how big data has become a source of massive information, which can be valuable, especially how it can create value and help the process of digital marketing activities.

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## 1.2 Company information

Netease Group was founded in 1997. In 2017, in the list of China Internet Enterprise, Netease ranked fifth. According to Netease's third quarter financial report, the net income in the third quarter of 2017 was 12.478 billion yuan. The same proportion increased by 35.5%. The net income of services in line games was 8.12 billion yuan, compared with 6.568 billion yuan in the same period last year. Netease was at the same time holding the cash cow of mobile gaming products. The net income from mobile games accounted for 68.3% of the net income from online games. The Netease Group has been developing for nearly 20 years, and the company has accumulated a billion-level feature database to develop Netease Shield, which enhances the security of UGC products. Netease Mengma and Netease Youshu serve customers as a big data developing management and data analysis platform. (Netease Group, 2017)

Netease's products are broadly divided into games, software, services, e-commerce and general web portals. In terms of software and services, in January, CIWEEK published the 2017 APP classification rankings (CIWEEK, 2017). Netease was ranking top in the fields of news, postal boxes, finance, education, and e-commerce. Among them, Netease has a dictionary (desktop version + mobile version) with a user volume of 600 million. The market share has reached 80%.

Compared to its major competitor Tencent's product development strategy, NetEase seems to be very conservative. The revenue from mobile games release the capital pressure, and the portal is considered the main entrance of traffic which greatly helps product incubation. Each business of the company competes on equal terms, and the final winners receive more support from the group. Netease always has a tolerance for KPIs, such as the average development time of mobile games, is twice as longer as other companies in the same industry. This makes the product manager become more self-driven, investing more time and energy and resources to optimize the product. The product innovation and function to meet the user's needs to the greatest extent. This has made that the product from Netease is always considered high quality and possesses a good reputation.

Netease Cloud Music is Netease's first mobile Internet music product. It was officially launched on January 25, 2013, and officially launched on Android on February 4. Before Netease Cloud Music went live, all music apps in China existed in the form of "local music player with music library". User behavior is mainly searching and downloading, while user will not pay too much attention and stay on the product. It is essentially only a copy mode of the PC music software directly to mobile app. Based on this, when all online music products have no additional attributes, NetEase Cloud Music has decided to be positioned to: Create a music community, which is "Music + Community". The main users are young people, especially those who have a higher demand for music.



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### 1.3 Purpose and Research Question

Research question of this thesis research:

“How can case company X use big data to optimize their digital marketing performance?”

The purpose of this research is to find out how can enterprises use big data to better guide digital marketing strategies, in order to create more value for the customers and maximize the benefits. How big data is valuable for either firms and customers, in which specific field, and how it can be improved.

### 1.4 Research objectives and methods

The objectives of the research:

Objective 1:

To gather general theoretical information of what is big data, why does big data provide competitive advantages, how can apply big data concept in digital marketing activities.

Objective 2:

To describe the current situation of the case company Netease Cloud Music.

Objective 3:

Combined with the theoretical information, analyze the result of the research and conclude the findings.

Objective 4:

To make recommendations of how to use big data to optimize digital marketing activities for a better performance of Netease Cloud Music, in order to increase the growth of customers, retain an individual customer at the lowest cost as well as maximize the profitability.

Research methods used in this research:

1. Review Literatures and web sources in order to find out relevant theory and secondary data.

In this research, I will review relevant literatures that are related to topics such as the concepts of big data, data analytics, data mining, digital marketing in order to gather theoretical information in different aspects, also together with structured theory from web sources. Since one hand data is hard to reach and mostly costs, all the data I use for analysis in this thesis are secondary data.

2. Conduct a personal interview from the case company Netease Cloud Music

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Primary data will be collected in the form of Q&As, which is addressing the current situation and problems that the company is facing of the case company Netease Cloud Music.

3. Applying PEST and the new 4Cs model to analyze the current situation of Netease Cloud Music

In order to have a comprehensive view of the company, it is essential to apply proper models that can break the picture into details. PEST analysis is to analyze the company from political, economic, social and technological aspects, which are the external factors that would have major influence on the company. Since the company has a rather special approach to business concerning its strategy, the new 4Cs model is applied to help better understand the company's operating approach.



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## 2 THEORETICAL BACKGROUND

### 2.1 Big data

In order to better understand the influence of big data can be on this world in an understandable way, we can take a quick look of an example. An economist at Massachusetts Institute of Technology's Sloan School of Management, Erik Brynjolfsson, has described big data as "microscope", a tool used broadly in scientific areas to observe the micro world as never before. For big data, as a modern equivalent of microscope, it is a revolutionary development of measurement technology. Under this circumstance, all activities have ever taken place, are able to be measured by figures and treated as quantitative problems.

Big data can have different meaning in different areas. For investors and entrepreneurs, big data is a label for financing, a catalyst for the capital bubble. For engineers in internet companies, big data is considered as massive figures which need to be calculated. For enterprises and business, big data is the big amount of records of customer behaviors, which are used to better target customer groups, understand customer needs in order to benefit.

#### 2.1.1 Definition & Characteristics

The definition of big data is rather vague. So far, there is no scientific definition of big data. However, it is important to understand that big data is an extension of the concept of traditional data, which is a collection of data from different data sources for further discovery and analysis. "Big data is somewhat of a misnomer since it implies that pre-existing data is somehow small or that the challenge is sheer size. In short the term big data applies to information that can't be processed or analysed using traditional processes or tools." (Zikopoulos, et al, 2011).

To clearly understand the concept, we will go through four characteristics of big data. Specifically, Big data is described as 4 "V" due to its characteristics, which are volume, variety, velocity and value.

##### Volume

Volume stands for the amount of data generated by different sources. Especially with the development of digitalization, data is generated in increasing types of channels. In recent years the volume has extended from TB to PB level. This is a new challenge for current companies, due to the fact that traditional approach can no long be used to efficiently manage the excessive amount of data. Companies have to continuously upgrade their abilities in terms of data storage.

##### Variety



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Variety means the different type of data generated, range from structured data types (relational databases, spreadsheets), unstructured data type (picture, post on social media, voice recording) to semi-structured type.

### Velocity

Velocity is the speed of the data being processed and transformed into valuable information. The main reason for increasing the velocity of data is to get instant information for a quicker decision-making time. For business whose data is considered the main information source, the advantage of having a high-speed information flow is obvious. Amazon CEO Jeff Bezos has recently emphasized the importance of a quick decision making: “Most decisions should probably be made with somewhere around 70% of the information you wish you had. If you wait for 90% in most cases, you’re probably being slow.”

### Veracity

Value refers how trustworthy the data is. Regarding data accuracy, it is important to know that great volume of data also brings great uncertainty, while it has influence on the decision-making process. It refers to not only the quality of the data, but also the trustworthiness of the sources of the data and how well it is processed.

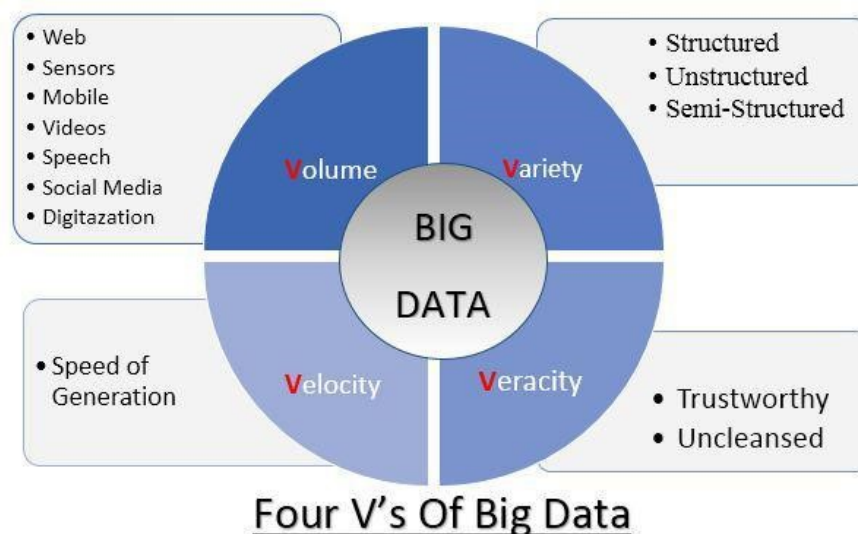


Figure 1: Four V's Of Big Data (Benefits of Big Data on Cloud Computing, Bista 2017)

### 2.1.2 Difference Between Big Data and Traditional Data

The main differences between big data and traditional data are discussed below:

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## Volume of data

With the development of social network software, people are connected as never before, which leads to the result that more and more data sources mushroomed and are constantly growing. Traditional database can store only amount of data ranging from gigabytes to terabytes. In case of big data, the amount is increased up till hundreds of petabytes and beyond. The storage of massive amount of data would reduce the overall cost for storing data and help in providing business intelligence (Polonetsky & Tene 2013).

## Data Architecture

One difference is how the amount of data is processed. Traditional data use centralized database architecture in which large and complex problems are solved by a single computer system. However, it is costly and inefficient to process the large amount of data with the centralised architecture.

For big data, the large block of data is divided into several smaller pieces and distributed to several different computers, which is so called a distributed database architecture. In this way, the computers can communicate to each other and run efficiently.

## Data types

Traditional data are usually based on structured data, and due to the fact that traditional data base is much smaller in terms of volume and simpler in terms of variety, data can be easily stored and transferred into structured data type. Along with the limitation of scale, the insights are also provided in a small level.

However, this is far from fulfilling the requirements of enterprises in today's competitive environment. Big data uses the semi-structured and unstructured data and improves the variety of the data gathered from different sources like customers, audience or subscribers. After the collection, Big data transforms it into knowledge-based information (Parmar & Gupta 2015).

## Data schema

The traditional database is based on fixed schema, only it is saved it cannot be changed or proceed further operation. (Hu et al. 2014) Big data use dynamic schema for data storage. Any Schema can be applied to the data stored as all types of structure, since the schema is applied only after a query is generated. Big data is stored in raw format and then schema is applied only when the data is to be read.

## Data relationship

In the traditional database system relationship between the data items can be explored easily as the number of information stored is small. However,



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big data contains massive volume of data which increase the level of difficulty in figuring out the relationship between the data items (Parmar & Gupta 2015).

### Scaling

Scaling refers to demand of the resources and servers required to carry out the computation. Scaling in traditional database is very difficult since it runs only on the single serve. Big data is based on the scale out architecture under which the distributed approaches for computing are working with more than one server. Therefore, the load of the computation is shared with single application-based system. (Provost & Fawcett 2013).

### Cost

Despite the concern on performance, the high complexity and expenses of traditional database system is also another problem. Transformation of the data among different systems requires higher performance of either the software and hardware, which increases the cost significantly. While in case of big data as the massive amount of data is segregated between various systems, the amount of data decreases. Therefore, use of big data is quite simple, makes use of commodity hardware and open source software to process the data (CINNER et al. 2009).

### Accuracy

Due to the fact that not all data can be store in traditional database system because of the cost, the amount of data eventually being analysed is decreased and the accuracy is lower. Which means the analysis that is carried out is only a “small piece of the whole picture”. Big data provides the much more complete data information, which would provide high confidential results by identifying more accurate points of correlations.

## 2.1.3 Big Data Life Cycle

Big data life cycle refers to a structure for organizing the activities and tasks by using data management within an organization. It is a general model used by researchers, data managers and librarians to plan the workflow of research data and data curation activities in their project or organization. (L. Pouchard).

The big data life cycle model. The background labelled ‘Assure’ and ‘Describe’ highlights that these activities take place at every step.

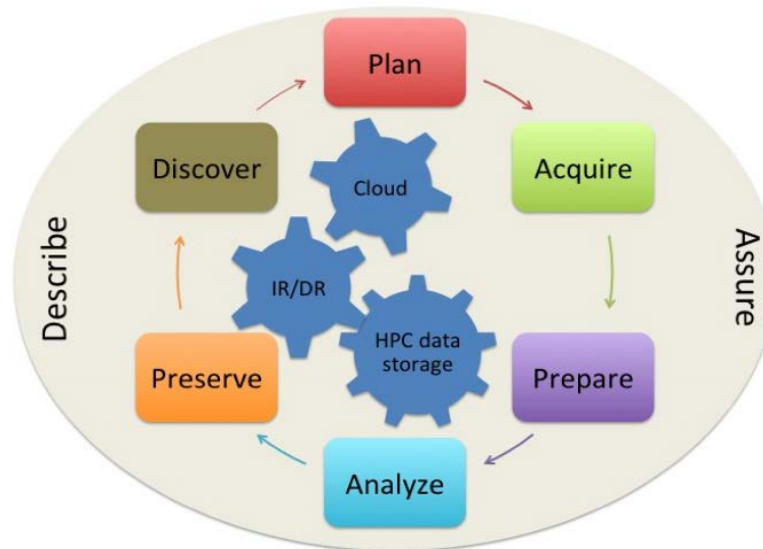


Figure 2: Revisiting the Data Lifecycle with Big Data Curation  
(Line Pouchard, 2016)

#### 2.1.4 What Does It Mean to Competitive Advantage

Most of the companies nowadays have already realized the impact and big potential of big data and focus on extracting the value for competitive advantage. “Large-scale data-gathering and analytics are quickly becoming a new frontier of competitive differentiation” (Bughin, J.J. Livingston and S. Marwaha, 2011.) In order to achieve, the crucial is to capture the insights from the massive about of data about markets, customers, products and services and analyse them.

In a marketer point of view, instead of the technical dimension of volume, velocity, variety and veracity, big data can also be described as a function of context, connectedness and complexity. (Vincent Charles and Tatiana Gherman, 2013)

##### Context

Raw data doesn't have any real meanings. Firms need to turn the massive figures into meaningful information, convert information to stories in order to gain the view of the firms' performance.

##### Connectedness

Connectedness is defined as the ability to understand data in its wider context and within its ethical implications. (Vincent Charles and Tatiana Gherman, 2013) From traditional point of view data from one source is collected individually and independent from other data sources.

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However, in an increasingly connected world the data is no more isolated from each other. Managers now must rethink the relationships among all dimensions of information management. "The business's demand for access to the vast resources of big data gives information managers an opportunity to alter the way the enterprise uses information.

Thus, IT leaders must educate their business counterparts on the challenges while ensuring some degree of control and coordination so that the big-data opportunity doesn't become big-data chaos, which may raise compliance risks, increase costs and create yet more silos" (Gartner, 2011).

### Complexity

Since using new form of information to support the decision-making process in enterprises have become a major trend, dealing with complex data, like big data, will become a core competence of each enterprise. It means the ability to manage the large volume of data, identify the actionable insights and differentiate the information that has a true influence on the performance of the organization. Other important abilities refer to understand the interdependency of the actions, the range of implications and the ethical basis on which business decisions are being made when it comes to big data. (Vincent Charles and Tatiana Gherman, 2013)

### 2.1.5 Data Mining

The following chapter introduces different types of data mining, and the techniques and tools are used. Data mining is the process of finding anomalies, patterns and correlations within large data sets to predict outcomes. Using a broad range of techniques, you can use this information to increase revenues, cut costs, improve customer relationships, reduce risks and more. (SAS, 2018)

The main purpose of data mining is to convert raw data to useful information. And the methods used are all about recognizing patterns. Base on the patterns that are recognized in the past, experience can be applied to new data to help make better and faster decisions. Patterns are not permanent, it has to be updated by time and most importantly provides valid and meaningful information to eventually help the decision-making process. Meanwhile, not all the patterns recognized are meaningful patterns, useful patterns somehow only count for a small part of it. Poor data quality, data velocity and data variety are the three main obstacles when recognizing patterns. Poor data quality refers to dirty data, missing values and poor representation as data samples. Data velocity has influence on the whole relevance of a pattern, due to the fact that the pattern can only be valid when it is recognized in a situation that there are no missing parts. Data variety concerns the integration of all data coming from different data sources. Patterns can only be proved useful when they apply to all data sources.

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## 2.2 Digital Marketing

Today digitalization is spreading to every corner of this world, advanced digital technology has made a significant impact on marketing activities. More and more customer related data are generated by various types of channel, insights became crucial for the enterprise for customer relationship management.

### 2.2.1 Web Usage Mining

Web usage mining consists of three stages, data preprocessing, pattern discovery and pattern analysis. In order to discover the pattern and further analyze, data must be assembled into a structured view. Sub activities are described as below:

- **Data processing.** A series of process include data cleaning, data filtering and feature selection etc.
- **Users identification.** After the user create an account and view the website, user information is automatically saved into the database. From there information such as IP address, firewall's existence, browser information can be identified.
- **Session identification.** The main objective is to identify to divide the page accesses of each user at a time into individual sessions. (H. Hannah Inbarani and K. Thangavel) The method used for identification is every time that a user ends a request between page exceed s a certain amount of time, is considered starting a new session.

### 2.2.2 Click Stream Analysis

The term click stream analysis refers to a process of analysing the path that visitors go through when visiting a website. Due to the digitalization trend, most of the business now becomes online business. The clickstream at the same time is realized and considered one of the most important activities for companies.

Clickstream Analysis can reveal usage patterns on the company's web site and give a highly improved understanding of customer behaviour. This understanding can then be utilized for improving customer satisfaction with the web site and the company in general, yielding a huge business advantage. (Andersen J., Giversen A., Jensen A. H., Larsen R.S., Pedersen, T.B., Skyt J, 2000).

All the companies want to catch the users that bring the wanted customers to their business. Because not all customers are considered having equally importance to the company, due to various of reasons (purchasing power,

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demographic factors) there are groups of customers who are more likely to buy product that brings higher profit.

When a customer is visiting the website, analyst can find out what interests the customer the most by tracking the data of what, more specifically, which section the customer is spending most of the time looking at. Meanwhile, by comparing it with the costs and calculating the benefits companies will find out the result that if it pays off. (Andersen J., Giversen A., Jensen A. H., Larsen R.S., Pedersen, T.B., Skyt J, 2000)

### 2.2.3 Social Media Listening

Social media listening, also known as social media monitoring, is the process of identifying and assessing what is being said about a company, individual, product or brand on the Internet. (M.Rouse, 2013) For either student or corporate professionals, traditional media monitoring tools are widely used for marketing activities. For example, tools such as Factiva, Cision and BurrellesLuce are the best tools available for monitoring. In other areas such as public relations, they are used for years to capture large amount of publications around the globe, to gather all the information related to their publicity.

Companies usually use social media listening as their reputation management tool. For example, how their reputation has been damaged and make analysis out of it, so that issues can be noticed in advance for the companies to make adjustment. Researchers also have a chance to learn about further information on the online community, which includes (Chuck Hemann, Ken Bubar, 2013):

#### Location of conversations

Location of the conversations means the geography or channel that the conversations take place. With social media listening tool, especially combined with the modern social media channel (Facebook, twitter, blog, forum), much more information from the speakers can now be gathered by the researchers.

#### Sentiment

Before the online listening became popular, there are few ways for the companies to gauge the brand perception of their companies. Now, with the input of social media listening, a quantitative approach can be applied in order to assess the companies' value.

#### Key message penetration

With social media listening the companies can now immediately receive the real-time messages, especially from the key stakeholders. In this way companies would have time to react and lower the chance of unnecessary risks.

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## Key influencers

Sometimes it is hard for the communicators to know who is driving the brand perception of the company. Nowadays, the transparency provided by the social media listening tool, is able to give the communicators clearer information about who specifically drive the perception.

### 2.2.4 Audience Analysis

In public speaking, the speaker need to adjust the content carefully, so that the listeners could respond as his wish. Same concept can be applied to digital marketing. As marketing is becoming more and more “personalized”, content delivered to a single customer can now even be tailor-made.

Traditionally, audience analysis is the process by which technical writers determine the most important characteristics of their audience in order to choose the best style, format, and information when preparing a document or speaking. (Chuck Hemann, Ken Bubary, 2013)

When companies are doing an audience analysis, there are several factors to consider:

**Platform**—Where does the audience spend most of time online? Specifically, which platform? And how frequently?

**Demographics**—What is the demographic background of the customers? (age, gender, education, religion)

**Understanding**—To what extent can the audience understand the content?


**Interest**—What is the motivation that drives the audience to interact with your content? (reading, commenting, sharing)

**Needs**—What are the need of these groups of customers? What level of services or products are they expecting?

**Customization**—What specific needs and/or interests should the brand address in order to add value for the audience?

### 2.2.5 Search Analytics

Almost everyone uses online search for requested information. For example, transportation, accommodation and shopping, online search is the go-to place and became indispensable for either individuals or businesses. In 2012, companies spent \$41 billion on digital marketing across all channels. Search marketing accounted for more than \$21 billion of that (roughly



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52%), more than all other channels combined (social media, email marketing, mobile marketing, and display marketing). (Chuck Hemann, Ken Burbary, 2013)

The reason for companies paying much attention to search engine is, it is the place that customers go to and spend most of the time on. Therefore, content development is an important factor influence the decision-making of the customers. For digital marketing activities, there are several ways for the enterprises to use search engine to support the development of the content:

### Search engine marketing (SEM)

After contents has been creative in search engine, companies need to track the effectiveness of the content. Search engine marketing is the process of gaining traffic and visibility from search engines through mostly paid efforts. (SEL, 2018) Example can be all the ads people firstly see on the right when landing on the search result page in Google. But it also refers to the paid advertising placement on platforms such as Facebook and Youtube.

The type of online marketing is also sometimes described as PPC (Pay-Per-Click) advertising. Which means the advertiser need to pay a small amount of money whenever somebody has click on your advertisement.


One of the most important activity in SEM is cohesive campaign. A campaign is simply a series of ads that share a common theme and are designed to work together. In SEM, you create your ad campaigns to target specific, relevant keywords. The most effective campaigns are cohesive; they tie everything — your keywords, your ad groups, etc. — together so that you aren't putting out conicting messages with your ads. (Dan Morley, 2016)

Normally, the message being delivered is rather simple. Company follows a strategy that everything the content of the message shown to the customer must be consistent. The idea is to give the customer a glimpse of what the product is generally about, no matter where they are, rather than randomly fragmented image.

There are many tools (Google Adwords, KeywordSpy) available in the market for the companies to gain and analysis meaningful information and optimize the SEM process.

### Search engine optimization (SEO)

If you have looked into digital marketing in recent years, it's possible that you've heard the phrase "SEO is dead." (Dan Morley, 2016) However, nothing could be further from the Truth. Search engine optimization has been and still will be important activities concerning engine searches.



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Search engine optimization is part of the process in search engine marketing, which is about get higher rankings for company's website in search engine, in order to gain more customer traffic without any costs. However, it is shown that the difficulty of getting higher rank is much bigger without paying the contributors.

Instead of only considering the most relevant keywords in your content, it's also needed to consider the key variables in the search engine algorithms. For example, when promoting a website, all the factors such as title, content, HTML and related code should be put into consideration.

### 3 CURRENT SITUATION OF NETEASE CLOUD MUSIC

#### 3.1 PEST Analysis

Ahead of any further analysis, to understand the macro environment of the music software industry in general is essential. In the era of big data and digitalization, the behaviors of people as customers are highly connected with internet. PEST analysis provides an all-around overview of the macro-environment of a company.

PEST refers to political, economic, social and technological factors that may have impact on the performance of a company. Political factors represent, for instance, a country's political environment, legal system, wage policies and taxation. Economic factors, can be such as economic growth, inflation, employment and currency. Social factors are related to demographics, culture, religions or general social values. And technological factors are recent technological developments that has impact on companies' products, value chain, cost structure and so on, which is sometimes the "ceiling" and crucial for improving companies' performance.

##### Political

For music app industry, copyright supervision has always been an important issue that has major influence on the survival of the businesses at the starting point. Digitalization has not only decreased the difficulty of spreading of the information, but at the same time the cost to copy. And piracy varies from different forms.

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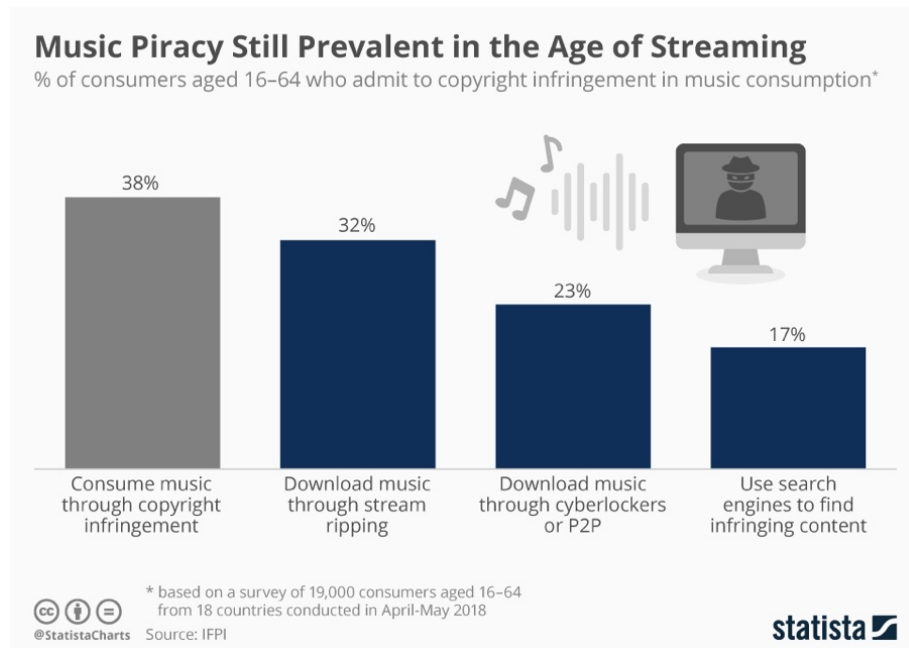


Figure 3: Music Piracy Still Prevalent in the Age of Streaming (Statista, 2018)

In the early years of 2000s, it was the time that music apps were mushrooming while the users of mobile internet were rapidly increasing, which has led to an intensive competition among the players in the industry. In contrast, lacking of supervision policies and standardised regulations has been the biggest problems for either music companies and music producers. In the year of 2014, around 400 medium size music websites and more than 1000 personal blogs in China provides music without copyrights. Annual income of discs sold were approximately 0.2 billion while piracy had a figure around 18 billion.

Although piracy cannot lead to a total perish of disc market, the purchasing behavior has no doubt been changed as a result of the negative effects. In 2015, NCAC (National Copyright Administration of the People's Republic of China) has published policy regarding that unauthorized music provided by all music service providers are prohibited.

### Economical

The economy in China has been developing rapidly in the 21 century, what comes along is the increasing consumer spending. A higher purchasing power indicates the traditional consumption is gradually moving in a down-trend. The per capita income of urban residents increased from 343 yuan/year in 1978 to 36,000 yuan/year in 2017, and the per capita income of urban and rural residents also reached 26,000 yuan/year. In the past 40 years, the average growth rate of urban residents' income has reached 13%. The Engel coefficient (the proportion of food to personal consumption expenditure) is a good illustration of the impact of rising income on the consumption structure of residents.

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At the beginning of reform and opening up, the Engel coefficient of urban and rural residents in China was as high as 57.6% and 67.7%, respectively. 28.6%, 31.2%. High-income people are the leaders of emerging consumption, and the emergence of high-income groups in the past few years has also boosted the rise of China's emerging consumption. According to statistics from CCB and China Merchants Bank, the total assets of China's high-net-worth households (investables greater than 6 million yuan) have risen from 11 trillion yuan in 2008 to 33 trillion yuan in 2012, and high net worth individuals (investables greater than 10 million yuan) The scale of assets has risen from 8 trillion in 2008 to 58 trillion in 2017.

The rise in income has also led to the expansion of household consumption from physical goods to services, which has led to strong growth in service consumption. Combined with the emergence of new technologies and new business formats, people are more willing to pay a premium service for saving time and efforts.

## Social

Since the beginning of the 21 century, China's mobile Internet has been growing in a fast speed accompanied by the rapid development of mobile network communication infrastructure. Especially in 2009, the country began to deploy 3G networks on a large scale. In 2014, it began to deploy 4G networks on a large scale and upgraded two mobile communication infrastructures. The replacement has effectively promoted the development of China's mobile Internet, large-scale innovation in either service models or business models.

From 2014 till now, With the deployment of 4G networks, the speed of mobile Internet access has been greatly improved, and the bottleneck limit of Internet access speeds has been basically eliminated, and mobile application scenarios have been greatly enriched. On December 4, 2013, the Ministry of Industry and Information Technology officially issued TD-LTE 4G licenses to China Mobile, China Telecom and China Unicom. The 4G network in China was officially launched on a large scale.

On February 27, 2015, the Ministry of Industry and Information Technology issued the "LTE/Fourth Generation Digital Cellular Mobile Communications Service (FDD-LTE)" operating license to China Telecom and China Unicom. The construction of 4G network has made China's mobile Internet development a fast development track.

As of the end of May 2016, China's 4G users have reached 580 million, and the proportion of 4G users accounted for 44.6% of total mobile phone users. At the same time, according to CNNIC data, as of the end of June 2016, China Mobile Internet users have reached 656 million. On the other hand, the proportion of mobile users has been continuously increasing comparing to all internets users, accounting for 98% of total internet users in China in the year of 2018.

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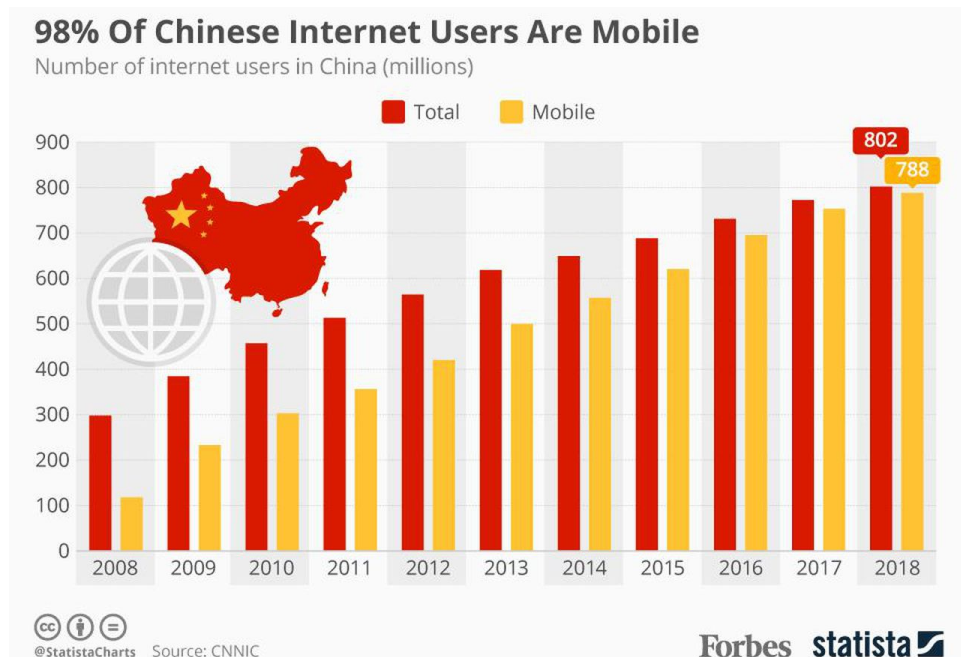


Figure 4: 98% Of Chinese Internet Users Are Mobile (Statista, 2018)

The increase in mobile Internet users has undoubtedly pushed the development of the mobile music industry. Since 2015, the global music industry revenue has ended a 15-year decline, and has achieved three consecutive years of growth in 2017. The main driving force is the increase in digital music revenue, accounting for more than 50%. (IFPI, Global Music Report, 2018) On the one hand, digital music platforms are increasingly involved in content production. On the other hand, digital music platforms have created more music consumption scenarios, such as helping users discover music, online karaoke, live broadcasts, etc., directly contributing to the growth of revenue of music industry.

#### Technological

Cloud computing is called the most anticipated technological revolution on a global scale, and cloud computing has brought widespread attention around the world because it marks not only a new technology, but also technology. A revolution in the entire industry will determine the country's competitiveness. Music cloud technology or music cloud is not a concept issue and has become a hot spot in the industry. For example, China Mobile, China Unicom, A8 and other well-known enterprises have invested heavily in research and development of music cloud technology, and in the actual operation, have achieved good social and economic benefits. For example, Amazon also launched the "Cloud Music" service - "Cloud Synchronization", which is popular among music lovers.

It can be expected that at the micro level, if a company concentrates on cloud music technology and persists, it will likely become the "leader" of the domestic digital music industry; at the macro level, the relevant state departments increase the investment in the music cloud public technology platform. The implementation of the public platform service of music cloud

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technology can not only save the investment cost for the development of music cloud public technology platform, but also better play the positive external effect of science and technology to push the rapid development of music cloud technology in China. To achieve the scale and level of the digital music industry in China. "Music cloud" technology refers to the music content stored by the user in the cloud, that is, the personal cloud storage service.

By using this technology, the user can enjoy the music at any time without being restricted by the terminal. Typical features of cloud computing are resource sharing, on-demand allocation, elastic scheduling, and service scalability. "Cloud computing" represents the needs of this era and reflects changes in market relations. As a digital music industry, the future consumer demand will surely move towards diversification. In the Internet environment, users can directly play and share massive music content stored in the "cloud" through various device terminals such as mobile phones, PCs, and TVs and it is not necessary to copy between multiple terminal devices, which is at the moment the most convenient, effective music sharing.

### 3.2 The New 4Cs Theory

In 1990, Sociologists Duncan Watts and Steve Strogatz proposed "Watts-Strogatz model". The Watts–Strogatz model is a random graph generation model that produces graphs with small-world properties, including short average path lengths and high clustering. (Watts, D. J.; Strogatz, S. H. , 1998)

In 2017, Xingtong Tang has turned this theory from sociology into a marketing concept, which is the "new 4Cs" theory: A group of people who have a close relationship with a small number of people on the social network, have a small world circle with good transitivity and relative independence. Based on that, enterprises can use *content* that is communicative in a suitable *context* for a specific *community* or topic, with the social network structure to *connect* people to achieve rapid diffusion and communication, and ultimately obtain effective methods of commercial communication and generate values. (Xingtong Tang, 2017)

#### Context

Context is a world composed of people, places, time and other additional dimensions. In this small world which is specifically defined, marketing activities are rather tailor-made and focusing on the scenario.

First of all, the ideal location Netease Cloud Music has set is subway station. Location-wise, it is the place where young people as target users are most concentrated. From the point of view of demand, people are mostly alone in subway, which is the time people are most likely to listen to music when there're no others to communicate with. Other than that, it is easier for users to immerse themselves in the emotional atmosphere created by music in a closed environment where people tend to be more focused, products in this situation would be more effective and penetrative.

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## Community

To maximize the effectiveness of marketing, people is one of the most important factor that has to be firstly taken into consideration. Community marketing is a tactic that involves a brand or business interacting with a group (or community) of like-minded individuals, typically in an online environment, such as a social media group, targeted blog website or online message board forum. (Study.com, 2018)

A community is a decentralized network connection between people. Inside the community, people that have relationships with each other would eventually form a social system. In this situation, Netease Music as a music community has reduced the cost of building channels between the business and the customers over time. Information can be spread and shared in a very short time. At the same time, it is way easier to get customers' feedbacks while customers share their ideals in community.

## Content

Content marketing, just as the words say, is all about information. In other words, it's the marketing of a business or brand through the sharing of educational, entertaining, or insightful information that will ultimately help readers improve their lives. (Bob Ruffolo, 2017)


For Netease Music, the contents delivered to the customers are normally in forms of videos, pictures, animations and texts. The purpose is to provide vital and updated information to the market in terms of products, services activities and news etc.

According to the official statistic of Netease Music, around 640,000 comments are generated every day in the year of 2017. The low participation barrier has made the topic highly interactive among the users and formed a unique content in the community which is produced by the users.

Netease Cloud Music teamed up with Nongfu Spring to push the quality UGC to the consumer. Consumers can scan the bottle's QR code and jump directly to the corresponding song list to complete the overall music experience and user conversion.

## Connection

After we have talked about community marketing, it is obvious to notice how to build a strong network among people is the key for a community to increase popularity and boost its benefits. The reason is a strong network in this circumstance means a fast content and information flow. According to Greg Sterling, connection marketing is the opportunity to leverage relationships to grow your business via networking, word of mouth and referrals. The concepts of networking, word of mouth and referrals are not new, and in fact are all existing proven methods of marketing and revenue generation for business owners. Connection marketing brings these three things





together in one place, makes them more efficient and allows business owners to manage their efforts in one place. (Greg Sterling, 2016)

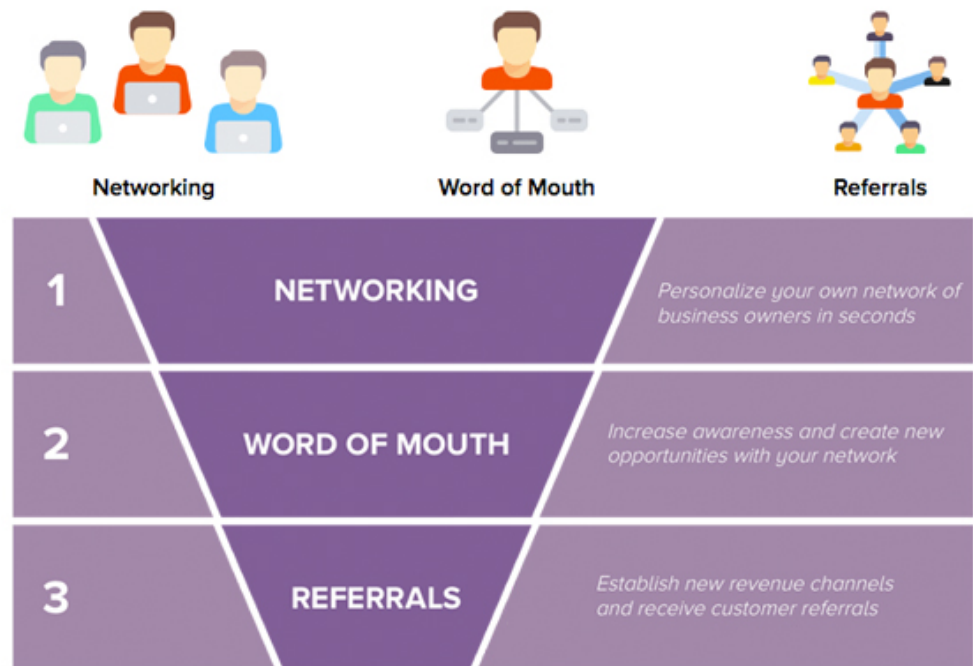


Figure 5: What is Connection Marketing? Q&A with Alignable (Greg Sterling, 2018)

### 3.3 Competitors Analysis

Since Kugou Music came out in 2004, and by the time of April 2013, the Chinese music software market has already become a red sea, the market was occupied and divided mainly by QQ music, Kugou music and Kuwo music. In this chapter, we will compare Netease Cloud Music mainly QQ music in two aspects, core competency and active users.

Netease Cloud Music was officially released on April 23, 2013. By April 2017, the product has launched on iPhone, Android, Web, PC, iPad, WP8, Mac, Win10UWP and Linux. With a differentiated focus on social attribute, the business was growing rapidly. Netease broke through 200 million users in only 3 years. At the same time, active users are gradually moving from the traditional PC to the mobile device.

#### Core competency

The core competency of QQ music is mainly due to its belonging to Tencent, which provides it more marketing channels, massive user resources and more exclusive copyrights. QQ Music has established strategic cooperations in terms of copyrights with more than 200 domestic and international

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record companies. It has purchased more than 30 exclusive copyrights and accumulated over 15 million music libraries. QQ Music has become the most exclusive platform for online music platforms. Netease Cloud Music's music library is at the moment only one-third of it.

The competitiveness of Netease Cloud Music relies on the innovation of social attribute and massive amount of high quality song lists. Till 2017, data shows that Netease Cloud Music has a active users of more than 12 million, a song list of more than 64 million, a music review of more than 120 million, 200 million more shares. The song list is the core architecture of Netease Cloud Music. With the song list as the clue, users organize their own music and discover the music also through the song list of other netizens.

### Active users

In 2017, in order to reduce the cost of copyright, QQ Music has merged with China Music Group (CMC) into Tencent Music Entertainment Group (TME), which means that Kugou music and Kuwo music are now both belong to Tencent. According to statistics provided by QuestMobile, in July 2017, Kugou, QQ music and Kugou was taking the top 3 places in terms of monthly active user (MAU), approximately 529 million in total. While Netease Cloud Music was around 69 million, taking the fourth place. For daily average user and active rate, Kugou, QQ music, Kuwo also ranked in the top three, while Netease cloud music ranked fourth, DAU only 15.52 million, far less than Kugou and QQ music. However, the user activity rate takes the second place, relatively considerable.

Benefit from the large user scale, the three products of TME have a greater advantage than Netease Cloud Music in terms of total monthly usage and total monthly usage time. Netease Cloud Music ranks fourth in both dimensions. It is less than half of the top QQ music in the monthly usage; and only  $\frac{1}{4}$  of the Kugou music in the total monthly usage, the gap is very big.

The loss of users due to lack of copyright is a major issue. Recently, under the active coordination of the National Copyright Administration, Tencent Music and Netease Cloud Music have reached a long-term copyright cooperation agreement, mutually authorized music products, reaching more than 99% of their exclusive music resources. At the same time, they also started to authorizing music rights to other platforms. Due to the fact that copyright issues was the biggest obstacle for Netease Cloud Music since the beginning of the business, the situation was much better afterwards. However, it is still impossible to compete with Tecent Music in the current situation.

Compare to QQ music, Netease Cloud Music has done a better job in highlighting the song list function, fully focusing on this differentiation would provide a continuous advantage. In addition, Netease Cloud Music's running FM and driving modes are deeper developed in terms of more comprehensive functions.

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## 3.4 Product Positioning

### Product functions

It is necessary to have a brief overview of the functions of the product before we go deeper into the analysis. The functions of the product can generally represent the overall strategy of the company, the main customers segment the company is targeting and how the product differentiates from its competitors. In the following part we will introduce the main functions of the Netease Music app.

The functions can be mainly divided into 4 parts: music discovering, music management, social system and account management.

#### Discover music: a multi-latitude system to meet the needs of users

- (1) Personality recommendation: based on private FM, daily song recommendation, cloud music new song list, recommended song list, exclusive delivery, latest music, recommended MV, anchor radio.
- (2) Song list: a song list based on different dimensions such as language, style, scene, emotion, theme etc.
- (3) Anchor station: based on the platform of celebrities, musicians, DJs, anchors and other users.
- (4) Leaderboard: including the official list (upgraded list, new song list, original list, hot song list, singer list), global list, user list)


#### My music: Convenient user personal music management

- (1) Downloaded music management
- (2) Recent played history
- (3) Singers followed: singers the user is interested in plus system recommendations
- (4) The song list created
- (5) The song list saved

#### Friends: Based on friends' social sharing features

- (1) A system where users can like, comment, and forward songs, song lists, albums, and radio stations to their friends.
- (2) Follow friends who are already in your contacts of other social platforms.

#### Account Management: system related settings

- (1) System preferences
  - (2) Message Center
  - (3) Points store
  - (4) Traffic package purchase
  - (5) Membership subscription
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## Core features

As a late-entry player that grew rapidly in the market, Netease Cloud Music is positioned to build a user-centric mobile music community with a unique feature of “music + social” to create value for the customers. The main idea and concept that the company is trying to deliver to customers can be well-recognized through the slogan: “Hear the good time”, “The power of music”. (Netease Cloud Music, 2018)

An important attribute that Netease Cloud Music provides is “user-generated-content”(UGC). Generally saying, User generated content is essentially any content created by unpaid contributors. It can include anything from pictures, videos, and blog posts to testimonials and discussion boards. User generated content is typically created or uploaded online, where it is easily shared. Corresponding to UGC is PGC, the full name is Professionally Generated Content, which is contents generated by the platform and brand side. (A.Aksenova, 2018)

For Netease Cloud Music, UGC is considered the critical “gene” and the blood of the app. On the one hand, it at the same time generate vast information that can boost interactions among the users. On the other hand, it also constantly increases its brand influence when users spend more time and being active in the community. We can undoubtedly say that Netease Cloud Music is too some extend a “social platform” rather than a generic music app.


## Personalized recommendation

The most important feature of Netease Cloud Music is the personalized recommendation function of songs. To see from the information architecture, Netease has established the highest priority for its core functions and competitive advantages. Meanwhile, it has lowered its priority for the keyword search function comparing to traditional music app.

The company’s entire design focus has always centered on its core value, is that the app helps users to find their preferred music. This is also in line with Netease CEO, Ding Lei's view on the music app. He thinks that the music app at that time is nothing more than a music player. There are many excellent music that have not been discovered by the majority of users. All music apps should be like “users friends” who know the music, as well as the users’ taste. In that way, the music app should recommend the good songs to the users, and then let the users try, so that they are able to have a higher chance to find their preferred music without spending much of their time.

## Song list

The other important feature is the song list system. The song list is users classify the music and sharing it with others based on the user's



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understanding of music. The song list of Netease is cloud-synchronized. Users can listen to their own creations either on the PC or on the mobile devices. Users can actively publish their own song lists in the community to show their own musical tastes, where others can comment, share and save. In this circumstance, song lists are considered carriers and tools which encourages users to discover new music in bulk through personalized recommendation. It replaces the traditional simple way that users can only discover the music they have to have already known the names.

By using the song list as the entrance for music discovering, users can obtain high-quality results according to their personal taste preferences, which not only optimizes the user experience, improves user stickiness, but at the same time company can also collect user data as a basis for iteration and operation strategies. It enhances the interaction between users, emphasis social attributes, and promotes the production of better quality UGC.


### Friends System

Social interaction has always been an eternal need. Even in the age of digitalization, people are no more satisfied with knowing friends only through Facebook, twitter and other genuine social tools, but desire to continue to know more friends in various ways, and the interest itself is a very important triggering factor.

The friends system of Netease Cloud Music is a strong entry point. Users can create their own homepage by binding to Weibo, Renren and other accounts (popular social software in China), and enrich their homepage content by creating song list, collection, preference settings. For instance, it might be because there are sentences I like in your comments. or your song meets my taste, or just because I saw your avatar in the comments, we have a chance to interact based on this topic and eventually share music. Thus, the result is the content is generated and shared, allowing users to form a circle of friends in the platform.

## 3.5 Target Customers

According to QuestMobile data, in July 2017, male prefer Netease Cloud Music, Kugo music, Baidu music and Duomi music; female users prefer QQ music and Kuwo music. Other music products have a relatively even gender distribution. Among all, Netease Cloud Music has the largest number of male users, up to 73.5%.



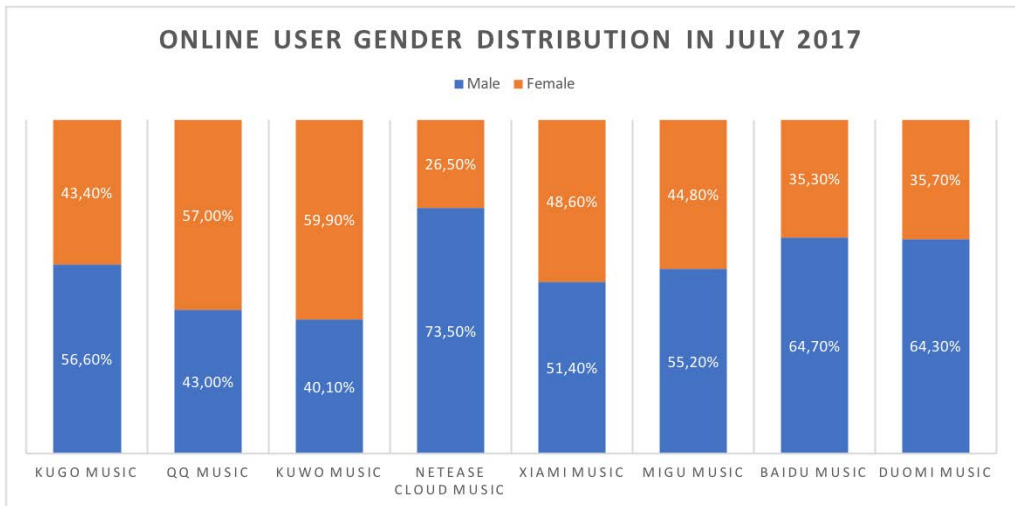


Figure 6: Online User Gender Distribution in July 2017 (QuestMobile, 2017)

As we have already mentioned before, the main customer group that Netease Cloud Music focuses is young generation people. The difference in the age distribution of the user groups is also very obvious.

For example, the Xiami music mainly attracts more young people and niche music lovers who are pursuing fashion-oriented personality; while the Kugo, Kuwo and Baidu music are more of the 80s, relatively mid age users who used internet music products earlier. Netease Cloud Music is rather the choice of users born in 90s, accounting for 43.4% of all age groups, followed by 33.2% for users born in 80s, and 14.6% for users born in 00s.

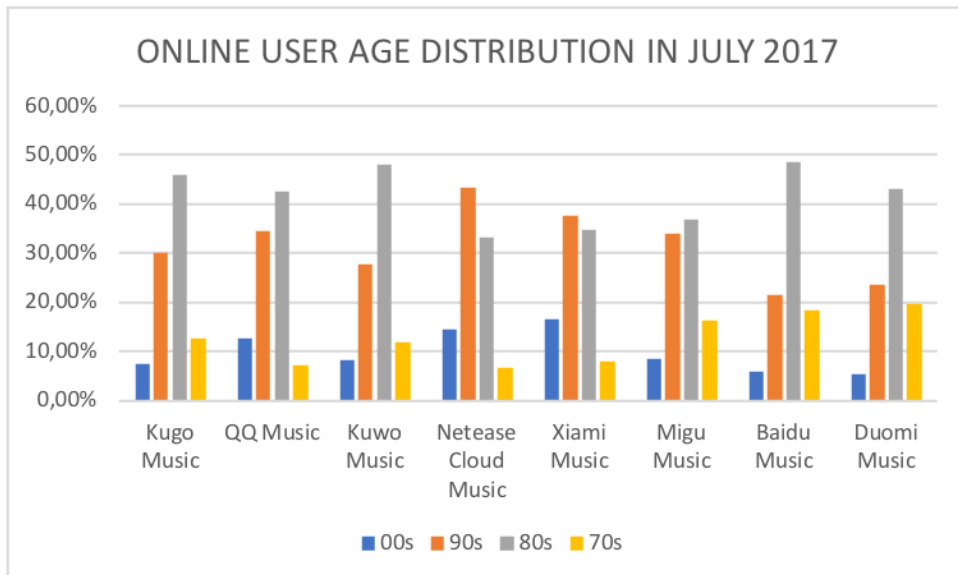


Figure 7: Online User Age Distribution in July 2017 (QuestMobile, 2017)

Based on geographical level, users in second- and fourth-tier cities account for a large proportion. Netease Cloud Music, Xiami and Baidu music account for a relatively high proportion of users in the first-tier cities, of which Netease Cloud Music accounted for 20.9%, only lower than Xiami music who account for 21.6%; while second-tier cities users account for 36.4%, next to the proportion 36.7% of QQ music.

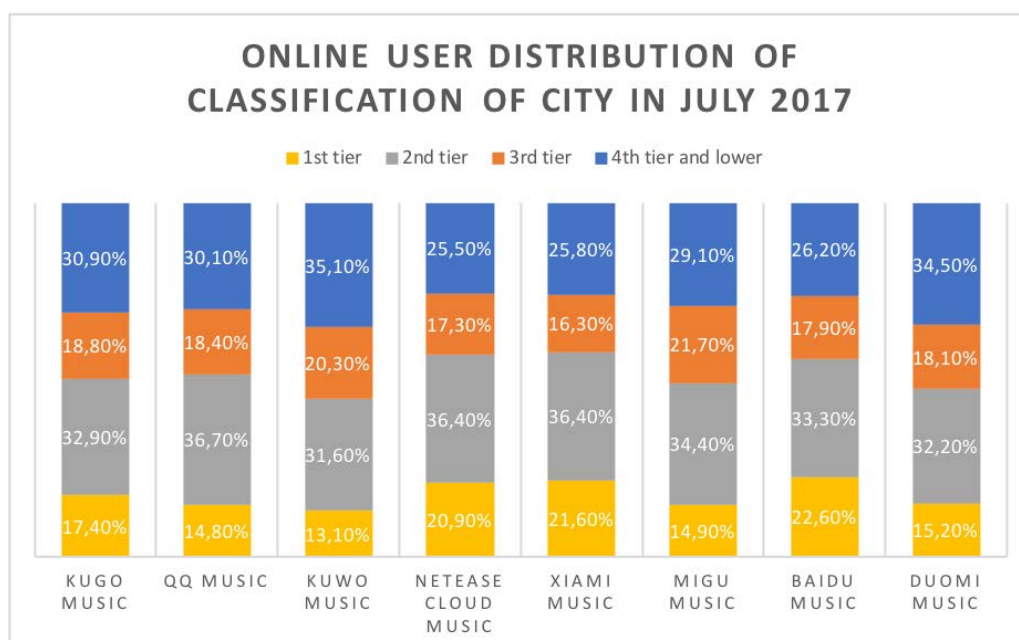


Figure 6: Online User Distribution of Classification of City in July 2017 (QuestMobile, 2017)

To summarize, Netease cloud music users are mainly distributed in first- and second-tier cities. The ratio of male is higher, and the age group is concentrated in the 80s and 90s. The user group is concentrated on the range of 20-35 years old. The user can be roughly divided into the following categories:

- Students: high active rate, abundant time, fashion-oriented, enjoy interaction and self-presentation, enjoy discovering new things;
- Young white-collar workers and IT workers: possess a certain level of work pressure, time is fragmented, have a emotional need of music and entertainment;
- Music practitioners: including artists, songwriters, DJs, music critics, independent musicians, etc., many of which are highly active in the industry;
- Industry elites/entrepreneurs: mostly high-income population, have a stable income, music lovers or senior CD collectors;

### 3.6 Netease Cloud Music and Big Data Application

At the Yunqi Conference held in 2017 in China, Xiami music's exploration event was the first to introduce AI composition, soundtrack with pictures and interactive music. It has given an impressive image and demonstrated the development of AI technology. At the same time, the AI play mode introduced can recommend songs according to user preferences and expand more types of music than users usually listen to. The mutual involvement between music and technology is becoming more and more profound. Every aspect of the music industry seems to have the integration of technological innovation, and these innovations may hide the next generation of technological disruptors.

Based on the recommendation system which is obviously now the crucial factor that makes a music app successful, customer behavior analysis is the basis and information source that supports all value delivering process that most of the companies would do. For Netease Cloud Music, big data analysis provides solid information that helps the company better understand the customers in order to maintain its core competency.

In 2016, Netease Cloud Music released the report "The arrival of the diversified era of song listening - Netease Cloud Music user behavior big data in the first half of 2016". And based on Netease Cloud Music's big data collected from back-end, the report presented a large amount of data on the behavior of 200 million music users listening to songs and the active behavior of 20,000 musicians. According to Netease Cloud Music big data analysis, big data reflects the music market in the first half of 2016. In the first half of 2016, users listened to songs and the domestic music market showed some obvious phenomena and trends (Netease, 2016):

- Social attributes quietly changed the behavior of how users listen to songs, mobile users account for more than 80%, mobile phones become the absolute mainstream device for listening to music;
- Personalized recommendation has covered most active users, and more and more users have found their high-listening frequency music through personalized recommendations;
- People born in 90s occupied half of the music users and has become the main customers of music consumption;
- Users' willingness of pay has increased significantly, and the number of paid members and digital album sales has grown rapidly;
- Independent musicians are rapidly emerging and have a stronger influence on the vertical platform;
- Social interaction boosts musicians' popularity, and whenever they are active in the platform is a "promotional period";
- The influence of films and television programs on the music is still strong, 70% of the popular songs are generated from them.

As we can see, the vast amount of data collected, which consists of millions of behaviors and activities that generated by the users every second, highly represents the current trend of the whole music software industry. We could say that the strategies that Netease Cloud Music applied, and the core



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competency they have tried to build in order to compete, has never been a subjective belief, but rather a result of the analysis of the big data collected.

### 3.7 Results of the Interview

The interview was performed via Skype with an employee from the marketing department of Netease Cloud Music. The questions and answers are presented below.

1. How did the product obtain such good reputation?

One of the most important factor is the freshness that our unique algorithm brings. The surprise that the recommendation system provides for the users is the goal we have been pursuing. Another important factor is the social attribute. The attributes of other products in the industry are more inclined to be music players, and we are doing a music software provides social network, which is a big differentiation.

2. Is it the benefit provided by the big data technology?

We could say so. But I'll rather say it is mainly related to the focus on user's behavior. The most important algorithm is 'collaborative filtering', which is a complicated process. However, analysis of big data is the crucial tool.

3. Why song list function is important? What's the value of it?

The song list is a new generation of way of carrying music. When others help you collect those good music, you can just listen directly. The biggest value of song list is its social attribute, it's not only for saving the songs.

4. How did the company make the commenting function so successful as a special feature?

We consider UGC as a special part of our product. Whether it is music review follow-up of news, the advantages of such UGC content are: They're from the real person, can meet the emotional needs of ordinary users; in the healthy content ecological mechanism, produce high-quality content precipitation with high visibility; It can also help products to complete content screening and create a better user experience. This is also the performance of Netease's "user first" value when developing products.

5. Why does Netease Cloud Music focus on music reviews rather than scoring?

Music cannot be considered good or bad, everyone can have a different feeling of it. Using objective and rational scoring system to score music increases the threshold for users to discover and share music.

6. Could you please explain in detail?

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Specifically, scoring has these drawbacks: everyone has an objective view, a personal score is rather not relevant; deliberate scoring exists; it takes only 5 minutes for listening the whole song and only a few seconds to judge whether or not to continue listening. It doesn't make sense to check the score before listening. The scores are only numbers, and the comments are content-contained and will stimulate the user's creativity and participation. It is at the same time contributing to community activity and product's self-propagation.

7. A community can sometimes contain bad contents. Why the commenting area of Netease Cloud Music can avoid that and always maintain a good atmosphere?

It can be explained by using the broken window theory. If many of the windows on the wall are broken, then people don't mind breaking another window. If all the windows are new, breaking a window can make people feel bad. If the community atmosphere is good, there will be very few negative comments; if the whole community is swearing, then others want to swear. Our control has been strict since the beginning.

8. Netease Cloud Music has done many successful marketing campaign, what is the common strategy that Netease has been following?

Good planning always more or less focuses on reality, you have to be associated with the real world. However, we not only pay attention to the real problems, we often provide solutions.

## 4 RECOMMENDATIONS

After the analysis of relevant theories, the current situation and the interview, the following recommendations are made based on the findings, in order to optimize the marketing strategies and boost the future performance of Netease Cloud Music.

### Comprehensive personalization

Mobile internet gives the possibility of data collection. In the PC era, users are more familiar with music player software, the entire using process is offline, so there is no data from the user can be captured. Another point is that users didn't have a habit of logging in when they use the software. When the user does not register to log in, the data that software provider can obtain is dynamic, and the user's IP can change at any time. Data such as which song has a high frequency of plays, which singer is most liked by the

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user, and any habits of the PC-end user are zero, gender, age level, etc., all cannot be obtained.

Mobile internet has provided Netease massive information about its users. It includes but no limit to demographic attribute, geographic location, interest, browsing behavior, purchasing behavior and social attribute. Netease has been following the strategy that to use the data generated to guide the personalized recommendation system. However, big data can provide more value to the system design which is not limited to that.

The recommendation system can be expanded to other functions, advertisements push is a good example. When users log into the software, the advertisements which are delivered to the uses can also be classified and filtered based on calculations. When the system recognizes that a user prefers a single singer according to his previous behavior, the records should be saved for optimizing the future ads push to this user. When the users can see what they want to see, it can not only maximize the effectiveness of the advertisements delivered, but also increase the active rate of the users and eventually lead to a high retention rate. Group system is also where the recommendation algorithm can be applied. The data that a user generated can too some extend describe the person in various of dimensions. An in-time and proper push advertisement of groups that the user may like, can definitely make an effective impression and trigger further activities of the user.

#### Establish an effective incentive system

In order to encourage users to participate in contributing values in the community the way that the company expect, such as active rate and content generation, company need to develop their own incentive system to motivate users continuously.

Generally saying, there are three ways to achieve this objective, the first one is to provide users mental satisfaction. For example, accumulating points or level-up system are widely used in all forms of forum and platform. They play a significant role when we talk about user retention. Netease Cloud Music can reward those who contribute to a certain level, which will stimulate the enthusiasm of these users to create more content. The point system can be used to make the user's personal page and result in differentiation. An important part of this is the obvious distinction of points and level between different users on their personal homepage. The number of times a user's comment under a song is liked and the number of times the song-list a user created saved by other users should also be showed in the user's personal home page. This will eventually meet the user's vanity and can be considered a sense of accomplishment. The second one is to satisfy users with real benefits. For example, points gathered by the users can be used to exchange rewards, or regularly launch event with prize on the platform. The reward can be, for instance, either a new released album of a popular singer or a concert ticket. And the third, the differentiation in terms of product function. Which is, users can get different product experiences when the they have contributed contents that reach a certain amount or the users' level rose to a certain level. For example, after the user's level has reached the

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standard, he can customize his personal homepage with more decorations, or get premium standard service for free.

Due to the fact that Netease Cloud Music has always been trying to build music community, a well-structured “social structure” is necessary in this situation. And Netease has to be aware of what can actually most effectively motivate the users the most. Therefore, Netease should collect user data and analyse to see to what extent the incentive system affect the users’ activities, and what is the best way to do it, in order to have a continuously optimization.

#### Establish a music group system

As far as the current development and situation of Netease Cloud Music, it is very difficult to build a community that fits all kinds of users, but what is considerable is to build a social system with more classified interest group. Netease Cloud Music is essentially a vertical music networking software. Unlike the comprehensive social networking websites such as Weibo and other blogs and forums, it pays more attention to the suitability and the quality of the contents. Though song-list and FM functions have made a significant effect, it still lacks a more effective mechanism to strengthen the relationships among the users. Thus, the suggestion is to establish a music group system.

Normally when using Netease Cloud Music, users find an individual song and discuss about it in the commenting area. However, a demand can be easily notice: what if the user likes, for example, Beethoven, Chopin and classic music which is preferred only by a relatively small group of users? Therefore, the role of groups here is obvious, which is for users to discuss based on their own interests. Users can create groups and post contents for discussion. Users with the same music taste gather in groups, and the user group can be subdivided. In fact, the social relationship between users is strengthened through the groups.

What has to be paid more attention to is the main idea is to use groups as a tool for users to gather together in terms of a common interest, which normally can be a type of taste of music. The biggest difference between a group and a general forum is the characteristics of the crowds and the overall ambience. The characteristics of the crowd crucially decides the topic of discussion, the way of interaction, the common rule and the quality of contents generated.

## 5 CONCLUSION

By reviewing the relevant theories and analysing the current situation of the case company, we can come to a conclusion that event though Netease Cloud Music is not the industry leader and still possess problems comparing to its competitors, it is still maintaining a relevant strong position in the market with loyal customers and still continue to grow. The main reason for

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their success is the deep understanding of its users. And all of this is backed with the support of the analysis of the big data generated by all the users. Data helps the company identify what the users need, what they want to see and most importantly, what they eventually are willing to pay. In the current situation, what important for Netease Cloud Music to increase its competency is to maintain the active rate of the users and the brand reputation with the network effect. By applying a new incentive system, Netease Cloud Music can retain its current users and provides motivation for them to use the app.

At the same time, in view of the effective users' social relationship mechanism that it lacks at present, the suggestion is that establishing a music group can be an effective method. On the other hand, Netease Cloud Music should develop new functions comprehensively based on the enhancement of recommendation system and user experience optimization to ensure the accumulation of its number of users to stabilize the user base of the cloud music ecosystem.

On the whole, it is foreseeable that the development of the "music society" ecosystem will focus more on enhancing the brand influence, increasing the practical functions of products and promoting the innovation of big data technology. Therefore, the industrial chain of its management level will gradually become clear. Soon after that, profit models such as advertising and other value-added services will emerge rapidly.

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## SOURCES

- Pouchard, L. (2011) Revisiting the Data Lifecycle with Big Data Curation, Purdue University Libraries.
- Kucera, T. (2012) Big Data for Marketing: Targeting Success, Aberdeen Group.
- Charles, V. and Gherman, T (2013) Achieving Competitive Advantage Through Big Data. Strategic Implications, CENTRUM Católica Graduate Business School, PUCP, Lima, Peru, Universidad del Pacífico, Lima, Peru.
- Charles G. Jobs, Steven M. Aukers and David M. Gilfoil (2014) The Impact of Big Data on Your Firms Marketing Communications: A Framework for Understanding the Emerging Marketing Analytics Industry, DeSales University.
- Michel Wedel and P.K. Kannan (2016) Marketing Analytics for Data-Rich Environments. Journal of Marketing: November 2016, Vol. 80, No. 6, pp. 97-121.
- Olson, D.L. and Delen, D. (2008) Advanced Data Mining Techniques, pp. 10-35.
- SAS.COM (2018) Data Mining, what is it and why it matters. Retrieved 10 September 2018, from [https://www.sas.com/en\\_us/insights/analytics/data-mining.html](https://www.sas.com/en_us/insights/analytics/data-mining.html)
- Datapreparator Software (2010) What is data preparation. Retrieved 10 September 2018, from [https://www.datapreparator.com/what\\_is\\_data\\_preparation.html](https://www.datapreparator.com/what_is_data_preparation.html)
- Watts, D. J.; Strogatz, S. H. (1998) Collective dynamics of 'small-world' networks. Nature. 393 (6684): 440–442.
- Hendricks, B. (2018) Community Marketing: Definition, Strategies & Example. Retrieved 2 October 2018, from <https://study.com/academy/lesson/community-marketing-definition-strategies-example.html>
- Ruffolo, B. (2018) What is Content Marketing (& Why is it So Important)? Retrieved 2 October 2018, from <https://www.impactbnd.com/blog/what-is-content-marketing>
- Sterling, G. (2016) What is Connection Marketing? Q&A with Alignable. Retrieved 2 October 2018, from <http://www.lsainsider.com/what-is-connection-marketing-qa-with-alignable/archives>
- 

---

Aksenova, A. (2018) User Generated Content – Great for Content Marketing. Retrieved 8 October 2018, from <http://www.curata.com/blog/content-marketing-user-generated-content/>

姜超宏观债券研究 (2018) 中国消费升级的三大主线. Retrieved 10 October 2018, from <https://wallstreetcn.com/articles/3356280>

中国传媒科技 (2012) 中国数字音乐产业发展的国内外环境分析. Retrieved 10 October, from <https://wenku.baidu.com/view/8cefd8dc581b6bd97f19eade>

王传珍 (2017) 2016 年中国移动音乐市场实力矩阵分析. Retrieved 11 October 2018, from <https://www.analysys.cn/article/detail/1000697>

黄兴唐 (2017) 引爆社群 :移动互联网时代的新 4C 法则[M].机械工业出版社, 第 2 版.

何清 (2014) 大数据与云计算 [J].科技 促进发展 (01):35 - 40.

王路 (2017) 从网易云音乐看“音乐社交”生态的建设 [J].传媒, (03):70-72.

吴斌 (2014) 基于社交网络的大数据技术和数字营销应用. Retrieved 14 October 2018, from [https://www.huawei.com/cn/about-huawei/publications/winwin-magazine/19/HW\\_329500](https://www.huawei.com/cn/about-huawei/publications/winwin-magazine/19/HW_329500)

Tykheev, D. (2018) Big Data in marketing, Saimaa University of Applied Sciences.

Su, X. (2018) Introduction to Big Data, Institutt for informatikk og e-l ring ved NTNU.

Verhoef, P., Kooge, E. and Walk, N. (2016) Creating Value with Big Data Analytics – Making Smarter Marketing Decisions, Routledge.

Jia, L. and Xu, X. (2013) Mirror Worlds: The Nature of the Big Data and Its Marketing Inspiration, Shanghai.

Lohr, S. (2012) How Big Data Became So Big, The New York Times.

Russom, P (2011) Big Data Analytics, TDWI Best Practice Report, 4<sup>th</sup> quarter.

---

Nadeem, M. (2015) Chief Marketing “Analytics or Digital” Officer [CMO]: Is the “Big Data” Alone Adequate for Firm’s Customer Retention & Return on Investment? National University, San Jose, California, USA.

Kolek, S. and Kirmaci, O. (2006) Web Mining & Clickstream Analysis, University of Fribourg.

K. Grishikashvili, S. Dibb, M. Meadows (2014) Investigation into Big Data Impact on Digital Marketing, Business School Department of Strategy and Marketing Open University, UK.

Ryan, D. and Jones, C. (2009) Understanding Digital Marketing – Marketing Strategies for Engaging the Digital Generation, the USA. And the UK.

Hemann, C. and Burbary, K (2013) Digital Marketing Analytics, the USA.

Phillips-Wren, G and Hoskisson, A. (2014) Decision Support with Big Data: A Case Study in the Hospitality Industry, Sellinger School of Business and Management, Loyola University Maryland, Baltimore, MD USA  
Loyalty Marketing, Choice Hotels International, Rockville, MD US