THE MINISTRY OF EDUCATION OF THE REPUBLIC OF AZERBAIJAN

AZERBAIJAN STATE UNIVERSITY OF ECONOMICS

INTERNATIONAL GRADUATE AND DOCTORATE CENTER

MASTER DISSERTATION

ON THE TOPIC

"BIG DATA USAGE IN IMPROVING MARKETING STRATEGY"

Ahmadova Narmin Rashid

BAKU – 2019

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BAKU – 2019

MARKETİNQ STRATEGİYASININ İNKİŞAFINDA “BİG DATA”-NIN İSTİFADƏSİ

XÜLASƏ

Tədqiqatın aktuallığı: Marketinq strategiyasının inkişafında “Big Data”-nın əhəmiyyəti günü gündən artır. İstifadəsi yolları və istifadəsi ilə əlaqədar yaranan rəqabət mühiti ilə bağlı araşdırma edilmişdir.

Tədqiqatın məqsəd və vəzifələri:Ölkəmizdə pərakəndəçi olaraq fəaliyyət göstərən müəssisədə “Big Data” konsepsiyasını nəzərdən keçirmək və pərakəndə satış sektorunda marketinqində tətbiqi araşdırmaqdır.

İstifadə olunmuş tədqiqat metodları: Tədqiqat aparılarkən sorğu, müşahidə, müsahibə və təcrübə metodlarından istifadə edilmişdir.

Tədqiqatın informasiya bazası: Məlumat ədəbiyyatdan və İnternetdən toplanmışdır. Məqsəd, mövzunun yüksək dəyişkənliyindən ötəri ən müasir məlumat mənbələrini axtarmaq idi. Buna görə, bəzi qeyri-ənənəvi mənbələr, məsələn online kurslar istifadə edilmişdir.Tədqiqatın məhdudiyyətləri: Tezis, pərakəndə satış sektorunda “Big Data”-nın istifadə imkanlarını təsvir edən bir nümunə araşdırma ehtiva edir.

Tədqiqatın nəticələri: “Big Data” haqqında ümumi anlayışlar, marketinqdə innovativ yollarla strategiyanın inkişaf yolları və “Big Data” texnologiyasının inkişaf mərhələlərindən bəhs edilmişdir. Həmçinin “Big Data”-nın istifadəsi və bunun satışa təsiri qeyd edilmişdir. Marketinq strategiyasının inkişafında “Big Data”-nın əhəmiyyəti, istifadəsi yolları və istifadəsi ilə əlaqədar yarann rəqabət mühiti ilə bağlı da geniş araşdırma edilmişdir. Son olaraq Azərbaycanda fəaliyyət göstərən müəssisələrin timsalında Araz marketlər şəbəkəsini haqqında və şirkətin marketinq strategiyasında “Big Data”-nın tətbiqi və nəticəsi qeyd edilmişdir.Həmçinin bu fəsild pərakəndə sektorunun SWOT analizi və inkişaf perspektivləri ilə bağlı praktiki araşdırmanın nəticələri əks olunmuşdur.

Nəticələrin elmi-praktiki əhəmiyyəti: Tədqiqatda “Big Data” istifadə edilməsi üçün vasitələrin siyahısı, eləcə də texnologiyadan istifadə etmək üçün lazım olan tədbirlər barədə bir sıra tövsiyələr verilmişdir.

Açar sözləri: Marketinq, Big Data, analitika, proqnozlaşdırma, pərakəndə satış, strategiya,

Elm andı

Mən, **Əhmədova Nərmin Rəşid** and içirəm ki, **"Big Data usage in improving marketing strategy"** mövzusunda magistr dissertasiyasını elmi əxlaq normalarına və istinad qaydalarına tam riayət etməklə və istifadə etdiyim bütün mənbələri ədəbiyyat siyahısında əks etdirməklə yazmışam.

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CONTENTS

INTRODUCTION

The relevance of the research topic. Big Data is a set of data that has been categorized or has not been made. Big data can be considered as a concept consisting of four different joints. We can name these joints as volume, speed, diversity and value. The volume is the size of the data obtained, the number of videos uploaded to the Internet in one minute, and the number of photos uploaded to the internet in one minute all over the world can all be examples of volume. The speed can be considered as the time taken to reach the available data. Diversity is that the resulting data is in different formats, the data that is shared on the social media and the data generated when you talk on the phone are in a different format, and this can be counted as the diversity of big data. The value is not stored in all of the generated data, only the data that is deemed valuable is stored on the Internet, on local servers or on your disks. Big data is a concept that emerged from the formation of the Internet up to the present day, but with the investigation of a virus in 2009. For big data to be really valuable, of course it has to be processed and meaningful.

Level of studying the issue. The main thing for which Big Data is used in marketing is more accurate segmentation of clients by types, in accordance with their consumer behavior and preferences. Operator marketers, knowing more about customers, can make them more accurate offers, involve them in the use of additional services, maintain loyalty, and thereby earn more on them. The global trend is that the size of these client segments, which helps to identify Big Data, is becoming more and less accurate, even treating each individual client as a full-fledged segment. Such personalized marketing is a matter of the future, not only for Russian operators, but also for the most advanced foreign ones. But the thinking of marketers, supported by technology, is moving in this direction, because the struggle for customers is intensifying, and those who know how to establish personal interaction with each consumer benefit.

Purpose and tasks of the research. The main thing for which Big Data is used in marketing is more accurate segmentation of clients by types, in accordance with their consumer behavior and preferences. Operator marketers, knowing more about customers, can make them more accurate offers, involve them in the use of additional services, maintain loyalty, and thereby earn more on them. The global trend is that the size of these client segments, which helps to identify Big Data, is becoming more and less accurate, even treating each individual client as a full-fledged segment. Such personalized marketing is a matter of the future, not only for Russian operators, but also for the most advanced foreign ones. But the thinking of marketers, supported by technology, is moving in this direction, because the struggle for customers is intensifying, and those who know how to establish personal interaction with each consumer benefit.

To achieve this goal, the following questions were formulated:

• How do we start to use Big Data;

• What kind of data do Big Data give to companies for improving strategy;

• Every company must Big Data for making marketing strategy. Here we face one question: How companies use Big Data for making marketing strategy;

• In business entrepreneurs use Big Data then they need which stage of business Big Data can influence more;

• When retailers use Big Data tools they want to know results of project. What technologies they will use;

• What are businesses' purposes for the usage of Big Data?

Object and subject of research. We know in retail sector social media play an important role in business. So it is known that what kind of information do customers give to companies via social media? It is a very interesting question for companies, because social media content, in its importance, is unstructured data, which is rather difficult to collect and process.

Research methods. The methodology was based on a different modern methods: a systematic approach, analytical and economic-statistical analyzes, interviews, questionnaires, experiments methods of customer interviews,

forecasting, observation, etc. The methods of research paper used in this work are based on marketing, strategy, Big Data, information technology.

Research database. The data base of the research was collected by different books related Big Data and marketing, journals and news about IT, conferences, data of the Statistics Committee, foreign scientists and surveys, etc.

Research limitations. Research is written about "Big Data" usage in improving marketing strategy in retail industry.

Scientific and practical significance of the results. The one of practical significance of paper is reducing risk in decisions making measures, cost effective, having influence on other people opinion, segmentation of customers according to their purchasing behavior.

Structure and volume of dissertation work. This research consists of an introduction, three chapters, conclusion, 16 tables and 5 figures. In work - 74 pages of text. During the work on the thesis 66 sources were used.

CHAPTER I. BIG DATA

1.1. A new paradigm for Big Data

At the same time, perhaps many more organizations are still out of the game, but those who have begun to introduce Big Data the data have already been able to see firsthand the practical benefits and feel their value. Companies realize the importance of Big Data for a wide range strategic corporate goals, ranging from finding new sources of income and entering new markets and ending with improving the quality of customer service and enterprise efficiency in general.

Digital technology is present in all areas of human life. The volume of data recorded in world data warehouses is growing every second, which means that the conditions for storing information should change at the same pace and new opportunities should appear to increase its volume.

According to the Digital research study, in the next five years, the amount of data on the planet will grow to 40 zettabytes, that is, by 2020, there will be 5200 GB for every person living on Earth.

The concept of our study is data. Therefore, some definitions of data need to be emphasized. Data as “the raw information which does not make sense alone or cannot be used, but which needs to be associated, grouped, interpreted, interpreted and analyzed as the basis for information and knowledge. According to another source, data is a general term used for information in the database. Data means different from research, observations, the Internet, social media, sensors, etc.

The term Big Data itself was first voiced in 2008 on the pages of the special issue of the journal Nature in the article by editor-in-chief Clifford Lynch. This issue was devoted to the explosive growth of global data volumes and their role in science.

Big Data analysis can determine when preventive maintenance is performed on assets such as bridges, funicular and railway lines, reducing economic

downtime and reducing downtime. For this reason, the data not only benefit from new sectors, but also from traditional industries.

There are five components in the formation of Big Data. These components are respectively; variety, velocity, volume, verification and value. It is commonly referred to as 5v. (https://www.flydata.com/blog/3-vs-of-big-data, 2018)

Variety: The data produced are generally non-structural and consist of data formats obtained from many different media, so they must be integrated and interchangeable.

Velocity: Big Data production is accelerating day by day and this data reaches an incredible size per second. The fast-growing data shows that the number of transactions and data that are in need of that data increases at the same rate and we should be able to remove this density both software and hardware.

Volume: The data we call Big Data may increase by increasing speed in each passing day, so we should put our future situation ahead and think about how to deal with these data piles in the future and make our plans accordingly.

Verification: Verification can also be seen as another data component when we need to check if the data coming in during the flow of this fast growing data is secure. This data may be seen by the right people or may be required to remain hidden.

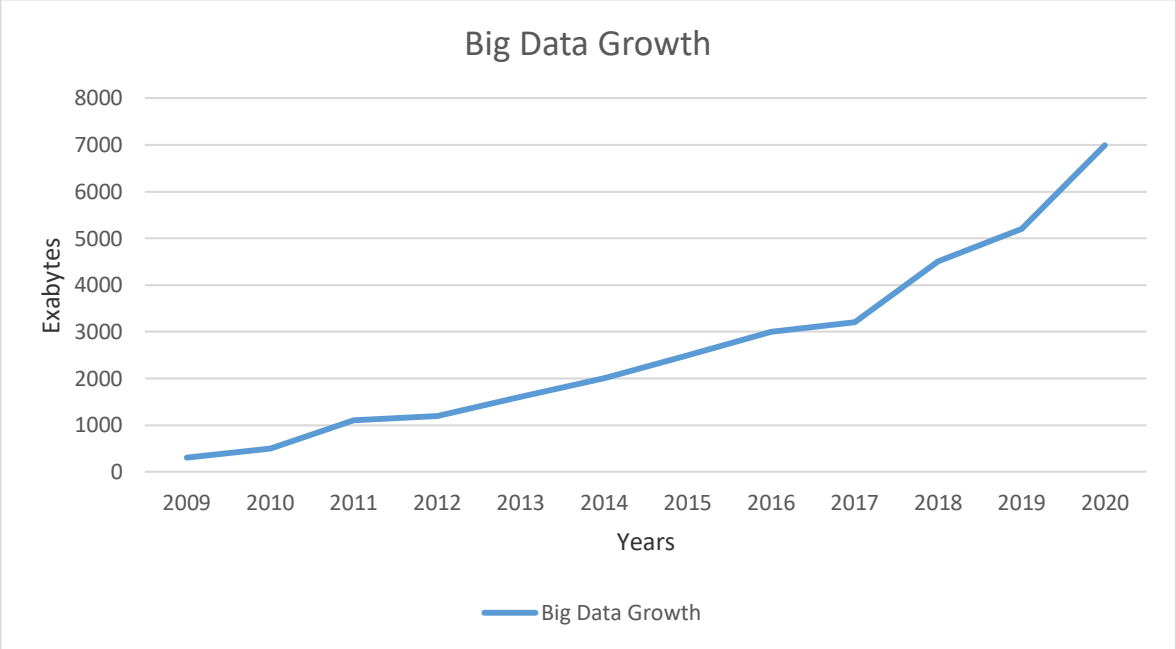
Value: Perhaps one of the most important layers is the Value layer, after the data has been filtered from the above data components, the data obtained in the production and processing layers of large data must provide benefit for our company. There are three types of Big Data :(Big data-big today, tomorrow, 2013)

Unstructured- Data is about lacks any specific form or structure data. This type makes situation very hard. Time to no avail to process and analyze unstructured data. For example about unstructured data is email.

Semi-structured- İt is related to holding both the structured formats and unstructured data. To be accurate, it mentions to the data that in spite has not been group under a special database, yet holds vital data or adds that separates single different components within the data

Structured- we mean data that can be managed, kept, and recovered in a fixed, fastened way. It connects to highly arranged information that can be easily readily and masterly stored and obtained from a information base with easy search main algorithms. For example, the simple worker table in a organization database will be organized like worker information, worker job positions, salaries in company, etc., will be present in an arranged direction.

Figure 1 Big Data Growth by 2020, IDC Digital Universe Forecast from 2012



Source: www.emc.com

Data can be grouped as follows:

- Structured, Unstructured, Semi-structured;
- Static, dynamic, flowing;
- Secure / open, private / public;
- Paid free;
- Open government data;
- Open data;
- Big Data.

The consumer market is becoming generally, more and more competitive and nowadays companies in Azerbaijan are struggling to sell their consumers something unique. To do this, companies need to understand customers for analyzing better. The basis way to obtain meaningful consumer analysis is to analyze the available data gathered with survey, questionnaires from users. These thoughts are insights, which can be utilized not only to continue to sell products, but also to provide customized events and services available choice at a premium. This tendency is quite usual way in new age organizations for example e-commerce and greatly benefits from much information and applications for research. By establishing sensors and then analyzing them, a rail operator can analyze fixed and variable assets.

1.2. The future of marketing: technology, Big Data and retail

Problems of data quality, management errors, privacy and security issues - all this hinders the development of Big Data in commercial networks. In the retail industry, the data is really big — thousands of stores, product lines, supply chains, millions of customer buyers, countless transactions. It is almost impossible to save data about all these objects and their interaction, you need to clearly understand for what tasks they will be used, how to properly save and protect them. In online trading, data collection and communication with the user has already been simplified, Big Data technologies are already actively used in Internet commerce. How do these technologies come in offline retail?

Price Review- The revision of prices for goods is one of the main levers of retail management. Competently set prices are one of the decisive factors in choosing a store in which a buyer makes a purchase, especially in conditions where it is possible to purchase the same product on the Internet. Price correction is performed continuously and is one of the processes that can be successfully automated using Big Data technologies.

Buyer segmentation- Customer segmentation can be equally well applied in online stores as well as in offline retail. For the Russian retailer “Lenta” the share of purchases made using loyalty card cards is more than 90%. By purchasing such cards, buyers voluntarily provide themselves with important socio-demographic information, such as age, gender, marital status, car ownership, and identify their purchases. Using data on purchases by loyalty card cards from 2010, the company segmented the customer base by RFV principle (“prescription, frequency, and cost”) and by consumer behavior. For example, a separate segment of men were purchased, mainly buying drinks and snacks, and a group of buyers purchasing simple ingredients for cooking their own brand “Lenta”. Such segmentation allows the company to adapt the range and principles of display of goods, to form price quotations.

Personal offers- Buyers can easily receive personal offers through the website, but it is not so easy to transfer them to customers in a physical store. However, a number of solutions have already been developed for this. Messages with personal offers can be sent to mobile phones with Wi-Fi or Bluetooth enabled. The buyer can receive them by connecting to the Wi-Fi network of the store and accepting the conditions, either through ad units in already installed applications or through specialized applications. Installation of such applications ultimately turns out to be profitable for the customer, as with the help of them he can receive additional discounts and get a new shopping experience. The systems that allow you to build this new way of communication with the customer, with high accuracy, track the movement of the customer inside the store and allow you to collect valuable analytical data on the customer’s behavior, where he is delayed, what attracts him, etc. certain shelves or product categories. Also placed in stores, advertising panels can change their messages when a particular buyer approaches. One of the developers of this kind of systems is the American company Euclid Analytics.

Predictive equipment maintenance- With the development of the Internet of Things, it becomes possible to track and analyze the indicators collected by

equipment sensors. This allows you to predict in advance the possible breakdowns (in the case of the store - refrigerators, ventilation systems, etc.) and take preventive measures, as well as accurately determine the breakdown code. As a result, maintenance and repair costs are significantly reduced, preliminary diagnostics are not required, losses from downtime and equipment breakdown are reduced. So far, such systems have been successfully used for the most expensive equipment. For example, ThyssenKrupp, using Microsoft cloud solutions, analyzes hundreds of machine indicators and thus monitors the state of its elevators around the world. As a result, the uptime of the company's elevators increased by an average of 50%, which significantly reduced costs (one breakdown costs at least $ 300) and created increased reliability as a new value for customers.

Anti fraud- Fraud in the retail industry often manifests itself in the form of sequences of small transactions, each of which individually almost does not seem suspicious, and these sequences - fraudulent schemes - are constantly changing. Big Data technologies allow you to track all transactions in retail outlets and identify in them schemes that require further investigation, including cases of fraud and theft, which can be stopped immediately. One of the solutions developed in this area is the Secure Store system from Sysrepublic.

Market basket analysis- Analysis of the market basket using associative algorithms, for example, the Apriori algorithm, allows us to find out which goods are most often purchased together, and if the consumer put product A in his basket, which goods he is most likely to take in addition to them. Associated products, sets of which are not always obvious, should be placed in the buyer's way to the checkout or alongside, you can also make joint promotions on them.

Complexity is connected with volumes of data and technologies of their storage. A retail network can have a huge number of customers, about which a huge amount of heterogeneous information can be accumulated in various sources. The movement of goods along supply chains, changes in prices, promotions, stocks and product placement occurs at a high speed, customers make purchases continuously throughout the time of the stores. All this generates huge amounts of

indicators that are difficult to store, process and combine within a single model or database. Many outlets still use fairly simple systems of accounting for goods turnover, data from which are weakly consolidated. Many retailers do not have the competence to work with the volumes of data that could potentially be saved and used for analysis. It is probably impossible to save and record all possible indicators, and it is necessary to determine in advance what data can be used for and what indicators are of the greatest value. Different products have completely different parameters, with the advent of new models and products, new characteristics appear. All this is difficult to put in the traditional relational data model, when data is stored in the form of related tables with a given list of columns. In part, these problems can be solved by moving to No SQL-databases, in which data is first loaded, and then their structure is determined, and not vice versa. Data with this approach is stored in the form of "documents", the emphasis is on how the data will be used, and not on how they should be structured. Also, this model facilitates the connection of data from different sources, such as data from loyalty programs, online sales, social networking data, and geo data. The cost of data storage is also constantly decreasing. Deploying the necessary infrastructure is facilitated by the use of cloud services. However, specialists are needed and the development of appropriate infrastructure and competencies within the company, the restructuring of corporate information systems.

And finally - security. In an effort to accumulate the maximum amount of customer data for analysis, companies often store large amounts of personal data with which they cannot provide an adequate level of protection. These data may be of interest to intruders, their abduction from the store can affect a large number of clients, lead to loss of trust and raise the problem of privacy, and cause customer dissatisfaction. At the end of 2013, hackers managed to steal data from 40 million credit cards along with personal data from 70 million customers of a large American retail network Target. It is noteworthy that 6 months before this, the company made major investments in the system of protection against malicious software, and even received warnings from it, but they were ignored. The system

could not automatically prevent data leakage, since it was still in the testing stage and did not have the necessary level of confidence. As a result, more than 90 lawsuits from buyers and banks were instituted against the company, the direct costs that had to be incurred after data theft amounted to $ 61 million, and the company's profit in the quarter following the theft fell by 46% from the previous year.

There are a lot of possible applications for Big Data analysis in retail, as well as the data itself, and hardly at least one company managed to realize their potential in most areas. At the same time, you need to understand that Big Data projects face many problems and require competent management. Before implementing the project, you need to clearly define a limited range of tasks that it must solve (and it’s better to start small) and ask the right questions. It is necessary to determine the way of deploying the infrastructure of Big Data and attract the necessary specialists, soberly assess the quality of the internal and external data available to the organization and the possibility of implementing analytical projects based on them. It is also worth thinking about the risks that large data carries with it, to protect them and not to intrude too much into the privacy of customers, not to violate ethical standards.

The approach to marketing promotion has changed significantly: companies are actively moving online. In order to understand that the digital future, in fact, has already arrived, it is enough to get acquainted with only a small part of solutions based on Big Data working in Russia.

A look at marketing from the inside-Despite having a serious relevant experience, I look at everything that happens in marketing from the position of a technical expert - I am a technical expert on data, not a marketer. So I can afford to look into the marketing of numbers, from the inside. In the past two decades, in customer-centered marketing, many fashionable phrases have appeared:

There was a time when it was fashionable to talk about relationship marketing or “1-on-1” (1-2-1) marketing, individual segmentation of one, then we started talking about the concept of a “single customer view”). Later, the dictionary

of the marketer was replenished with such notions as “360 customer view” (360-degree view of the customer), “analytical Customer Relation Management”. Today, none of the presentations on marketing in the field of digital cannot do without the concept of Omnichannel. Nevertheless, in essence, what has changed dramatically in marketing during this time?

Data is everywhere!- The second important thing that has happened to marketing over the years is the huge data flow that accompanies digital information channels. Oceans of data. It is important to note that these data often describe interactions, and not the fact of the purchases made, that is, transactions, as was the case until recently. “Big Data of the first wave” mainly related to e-commerce — Amazon, eBay, Rakuten, Yahoo Japan, Alibaba, and similar large projects — they sought to understand buying behavior by analyzing clicks. They were able to go beyond purchasing analytics, which allowed us to do a simple analysis of transactional data. Now, however, other information became available - why buyers looked at any products, but did not buy them, what they bought for themselves and what as gifts, whether reviews from other buyers were important in the decision-making process, which “golden ways” to site lead to higher conversion and which - to leave the site. It means that the online data of e-commerce allowed not only to find out what the visitor bought the site, but also how and why these purchases were made, that is, what we call the “customer journey”. This allowed us to talk about "mass customization." Now, when you or I visit the online marketplaces, each of us has his own most often unique consumer experience, partly because the web pages adapt to our buying behavior, taking into account our habits and preferences that we have demonstrated during our previous visits to the website. Partially, this happens as a result of the fact that the sites effectively continue to study consumer behavior and carry out optimization using A / B testing. Today, large e-Commerce platforms no longer have one main site, there are several of them, and they are able to permanent calculate what is most attractive for variety part of users and revamp to each.

1.3. Big Data technology, its role and features as advertising tool

Information is the main aspect of successful growth forecasting and marketing strategy development in the capable hands of a marketer. Big Data analysis has long been successfully used to determine the target audience, interests, demand, and consumer activity. Thus, Big Data is the most accurate marketer's tool for predicting the future of a company.

For example, the analysis of Big Data allows you to display ads (based on the well-known model of the RTB auction - Real Time Bidding) only to those consumers who are interested in a product or service.

Big Data technology - what is it? Big Data processing technology can be reduced to three main areas that solve three types of tasks:

Storage and translation of incoming information in gigabytes, terabytes and zettabytes for their storage, processing and practical application. Structuring disparate content: texts, photos, video, audio and all other types of data. During the period of the formation of the information society, a huge amount of diverse data is being formed and accumulated in various sectors of the economy. In the business sector, the volume of accumulated information about customers is constantly growing, which is necessary to create offers or products and services aimed at a specific customer. To offer such offers to customers, products, services, businesses need to analyze large amounts of data from various sources. As a result, for telecommunications and Internet companies, banks, retailers, energy, utilities, and others. The accumulated information becomes a strategically important asset, the effectiveness of which will significantly affect the results of their activities. The growth of information volumes is accompanied by the advent of hardware and software capable of quickly processing large amounts of information, as well as a significant reduction in the cost of collecting, processing, storing, and transmitting single information. Because of the combination of these two processes - the growth in business demand processing and storing large amounts of data and the emergence of technical means capable of promptly processing such data with minimal cost. One of the most interesting and promising areas, called Big Data.

Despite the fact that the experience of practical application of Big Data in business, not much has been accumulated in marketing yet, interest in projects in this area is constantly growing. Not rarely there are reports of the successful application of Big Data technologies by innovative companies for solving various problems of increasing the competitiveness of products and outcome, creating new services, and improving customer relationship management. However, information about the positive and negative experience of applying Big Data technologies is still fragmentary, unsystematic. Big Data in information technology is defined as a series of approaches, tools and methods for processing structured and unstructured data of huge amounts and significant diversity for obtaining human-perceptible results. “Three Vs” are distinguished as defining characteristics for Big Data:

- Volume- in the sense of the value of physical volume;
- speed- in the sense of both the rate of growth and the require for fast, rapid processing and obtaining results;
- variety- in the sense of the chance of concurrent and coincident processing and dealing of various kinds of structured and semi-structured data;
- In addition to the above-mentioned term, some IT professionals interpret the Big Data phrase as a purely marketing concept that carries the message: “We can process any data” ;
- In addition, the term Big Data is used to refer to a group of technologies that solve two problems;
- Storage and analysis of a significant amount of structured data requiring high processing speed and response measures in real time;
- Collection, storage and use of unstructured data, including audio, photo and video information.

The source of Big Data is not only corporate databases of companies, but also an array of social space and the entire flow of information from various sensors, measuring devices, sensor networks. Innovative tools and methods based on artificial intelligence, statistical analysis, mathematical linguistics, crowdsourcing, predictive analytics, and so on are being developed for processing

“Big Data”. As a rule, Big Data is used to obtain unknown, but necessary for business information. According to IDC experts, from 2013 to 2020. Global information will increase tenfold from 4.4 to 44. The amount of information doubles every 2 years, while storage is sufficient only for 15% of the data.

The efficiency of using Big Data technology is often associated with the cost of data processing. Today it seems possible to solve one or the other. Tasks, analyzing data about ten times cheaper than it was before. There may also be scenarios for the use of technologies that were previously economically not profitable, but now they bring tangible effect. For example, some time ago it was easy to make an individual offer to each specific client. It is technically impossible and not economically viable, so customers were divided into groups, segments, etc. Now, with the help of Big Data technology, you can analyze data about a specific client and make an offer that is interesting to him. According to SME Banking Club experts, most small business owners assume that Big Data is intended only for large businesses, but this is a wrong position. If the company will be able to improve the approach by which the business looking at her performance, she will be able to make more informed decisions. In addition, companies will be able to avoid committing actions that waste time and money. The use of Big Data technology is the best marketing strategy for business intelligence, which will make the company more efficient. Today there are many services based on Big Data technologies, able to determine the target audience according to given parameters, consider some of them.

Yandex Audience is a free service that allows you to create audience segments using already collected customer data (for example, phone numbers collected in an offline store) and show users a certain contextual and display advertising in the Yandex advertising network. In order to create auditorium segments, advertisers must upload to the email address service, telephone numbers or mobile device IDs of the respective client group. The list must contain at least 1 thousand contacts. With the help of technologies based on Big Data, Yandex. Audience impersonal finds these people on the Internet, after which the advertiser

will be able to offer them targeted advertising. For example, customers who have bought an e-book at an offline store may be attracted by advertising covers and other accessories, explained in Yandex. Based on data on a dedicated audience, the service can also line up segments of potential buyers outside the advertiser's audience. The basis of this function is Crypt technology, which allows you to select groups users on their behavior in the network.

Options for using "Yandex Audience";

- Information about promotions. Interact with current customers by information about promotions, discounts and special offers;
- Reminders. Similarly, you can inform customers not only about promotions and offers, but also show, for example, advertising with a reminder of the end of the policy or the soonest maintenance date for dealership customers;
- Additional sales. For example, for a children's clothing and goods store, you can collect user segments grouped under different scenarios (product category, last purchase date) and offer them new products (for example, for young parents - diapers or larger children's clothing);
- Search for new customers. With Yandex audience you can show ads not only to existing customers, but also to attract new ones;

We can solve a number of tasks:

Return of old customers, cost reduction;

- search for new potential customers;
- informing about discounts, promotions, sales;
- improving the quality of communication.

In this section, only a small part of services based on Big Data technologies was considered, which allows to select an audience by specified parameters, with the purpose of the formation of proposals for targeted advertising. Modern technologies of Big Data analysis provide the ability to quickly solve various analytical tasks, using both the accumulated array of information and current data. Due to the services of marketing services, new data analysis opportunities appear current customers of the company, as well as potential ones. At the same time,

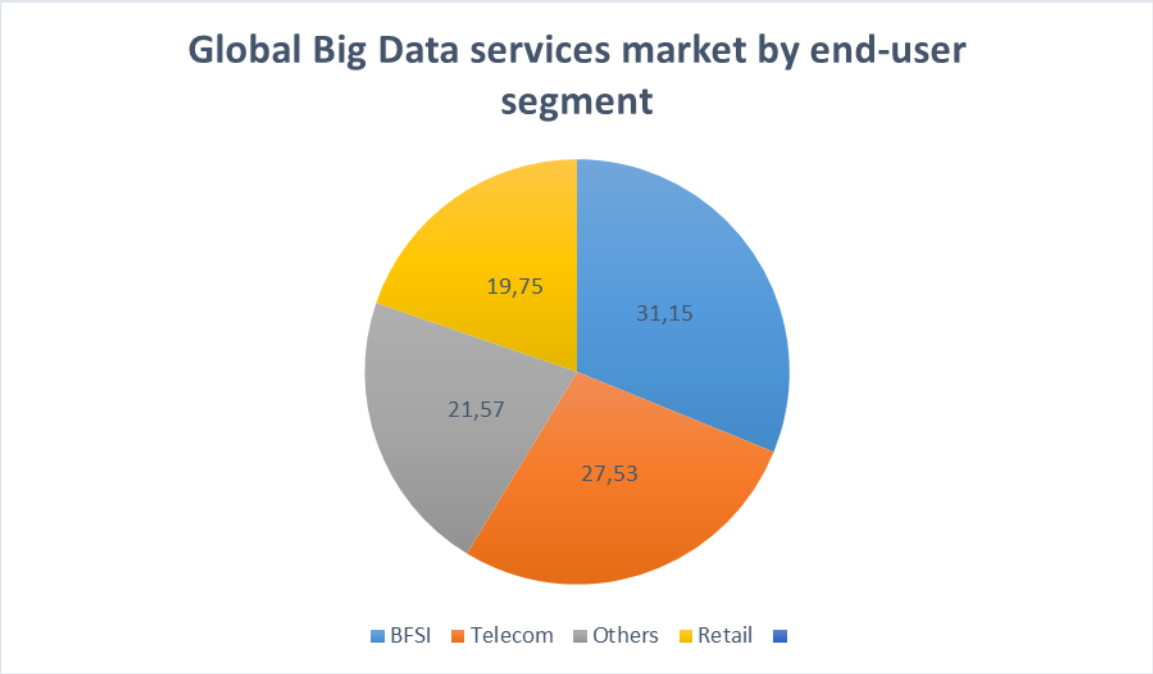
information about consumers allows more precise segmenting of the client base for advertising distribution. Union this information with data from social networks or other sources provides additional information about the interests of the buyer, contributes to the formation of personalized promotional offers. Target, which was listed above, proved the effectiveness of synergy Big Data and advertising tools on the Internet. In this section, trends in the development of the Internet advertising market were considered. The types of online advertising that were presented today for advertiser, their advantages and disadvantages, and areas of application. Analyzed Big Data technology based advertising services designed to create targeted audience by the specified parameters, later for which will be displayed banner advertising, as well as the experience of using Internet advertising tools and Bid Data technologies, proving the possibility of their synergy. Analysis of Big Data and the introduction of various methods of processing unstructured information, the creation of various analytical reports. In essence, the use of Big Data implies all areas of work with a huge amount of the most scattered information that is constantly updated and scattered across various sources. The goal is extremely simple - maximum efficiency, the introduction of new products and the growth of competitiveness.

Using Big Data is impossible without innovative technologies. There may be some problems about Big Data usage. For example:

- Data storage;
- Speed of data;
- Processing data;
- Programming and so on.

Customer Loyalty using Sentiment Analysis- The growing number of ways with which customers connection has resulted in brands, requirements to understand what customers who buy from their market saying about their products selling and experiences and happening in order to increasing and growing customer satisfaction. Keeping Hadoop functions in mind is important. There are four different purposes for using Hadoop.

Figure 2. Global Big Data services market by end user segment

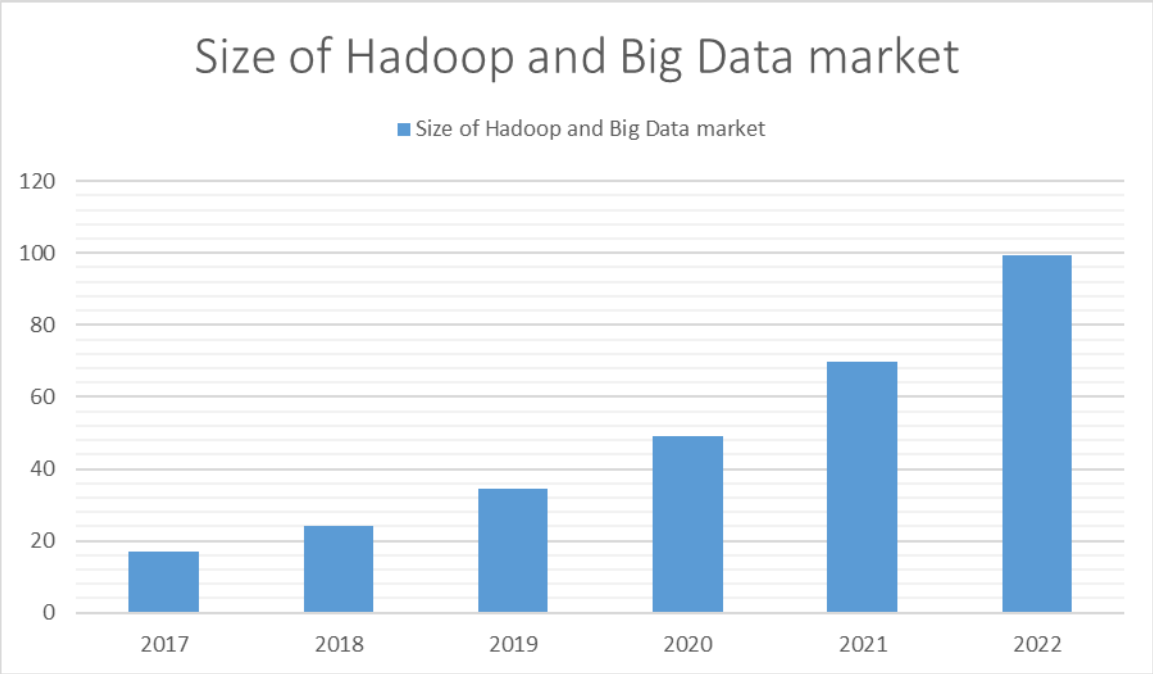


Source: technavio.com

The latest trend that is currently happening in the world is the use of information that is collected by Big Data technologies in their advertising strategies experience. In 1990-2000 years, some companies like Google started to analyze data storage. First times it was impossible to keep all data on a single device, but after some years, it was possible. Nowadays it is very simple after getting Hadoop, Mapreduce and other programs. Applications and requests of Big Data in Marketing- upgraded granular targeting- analytics permit retailers to divide customers of company into micro-selected parts based on customer behavior and journey.

Effective forecasts and planning- Big Data give the authority to marketers for combine the customer information with contextual and dependent facts such as competitive behavior, pricing positions, new trends and other exterior aspects to determine the magic formula to scale customer acquisition. For improving campaigns in right time Big Data technology can provide processing power needed to optimize campaigns in a scalable. Measuring channel effectiveness- Marketers can use this way to get better insight into campaign performance data. Enhancing

Figure 3. Size of Hadoop and Big Data Market Worldwide from 2017 to 2022



Source: Big Data and Hadoop Market Size Forecast Worldwide 2017-2022 statista.com

In the modern world, legal activity is usually associated with a large amount of information. In turn, there is a need to store such significant information files and quickly search for the necessary information. These tasks can be greatly facilitated by a database - specially organized information in which it is necessary to search for the necessary materials. To create databases, to keep them up to date and to organize the search for the necessary information in them. . The presented materials are primarily devoted to a detailed review of the current state and prospects for the development of databases. The work outlined basic concepts, data classification, composition and order of works on database design. Particular attention is paid to the construction of information and logical domain model.

Database refers to data that is arranged on a specific topic. The database provides tools for organizing, grouping, accessing, and reporting data for a particular purpose or for a particular set of end users, organized by information fields and grouped by information fields. The database can contain bibliographic data or numerical, statistical data.

CHAPTER II. BIG DATA IN MARKETING

2.1. Reasons for we need Big Data in marketing

Big Data focuses on what to do with it rather than how much knowledge it has. It takes the data from any source and analyzes them to find the answers that provide money and time saving, new project development and optimized suggestions at the same time also making smart decisions. When the Big Data is combined with strong analyzes, the job-related can be:

- Describe the main causes of real-time errors and problems.
- Selling sales coupons based on customers' buying habits.
- Recalculate the risks of new portfolios.
- Detect incorrect behavior before affecting the job.

Big Data describes a large amount of data, which makes it difficult for the daily work to be done regularly, irregularly or regularly. Because of the analysis of the large data, better decision and strategy is provided for the studies. Using data from social media, utilizing Big Data analysis tools, retail sectors around the world are organizing digital marketing strategies to improve the overall customer experience and journey. Big Data determine information about customer pain points or bonus and allows retailers to develop their products and services.

One of the most important application areas of the Big Data is the retail industry. In order to increase the sales of supermarkets, the most important thing is to find out which consumer groups have purchased which days of the week, in what seasons and what products they combine.

Big Data analytics can help companies generate and bring into more sales potential and benefit, which can naturally mean increased revenue. Businesses use Big Data analysis tools to understand and identify also analyze how well their products and services perform in the market. How and which customers respond to them in right time. Thus, it is better to understand where the time and money will be invested.

With Big Data analysis, you can always be first in challenges among your competitors. You can scan the retail to know what kind of promotions, campaigns and offers in retail competitors offer, and then you can get better and more efficient offers like proposals for your customers. In addition, Big Data analyzes allow you to understand customer trends and learn customer behavior to provide them a "personalized" experience. Big Data has differences and advantages from other ways:

- The overload storage;
- Faster processor;
- Outstanding open sources Large information platforms distributed like Hadoop;
- Parallel processing, assembly, visualization, large networks, high connection and efficient completed works;
- Specialized computer and other flexible resource sharing arrangements.

Bright to retailers who fit into the needs of future customers. But how do retailers do this? It depends on their market and target audience. Businesses should accurately analyze what data is available and set up action plans based on this information. In some cases, it is up to you to develop, discover new store formats, or upgrade your options. For others, it means using new technologies or re-training the staff. In any case, first of all, customers' wishes should be considered and more personal relationships should be created in the shops. However, one thing is clear: in the coming years, retailers are not an option to stay where they are when they want to grow.

Big Data is going to transform how we live, how we work and how we think. It is going to help us manage our careers and lead lives of satisfaction and hope and happiness and health, but in the past, we've often looked at information technology and our eyes have only seen the T, the technology, the hardware, because that's what was physical. We now need to recast our gaze the information, which is less apparent, but in some ways a lot more important. Humanity can

finally learn from the information that it can collect, as part of our timeless quest to understand the world and our place in it, and that is why Big Data is a big deal.

2.2. New challenges faced during Big Data integration

This report is discussed about innovation of Big Data and its challenges. As you know every innovation makes new innovation challenges. For winning challenges:

Selecting the right information- Big Data has a large amount of information. Retailers wonder how to divide to elements, irrelevant and unreliable data from the part which can bring value. Sometimes it can be easy to look. Therefore retailers should carefully select appropriate data sources.

Fast speed of changes- Big Data requires who daily learn innovation like information technologies. As new methods of data are processing introduced periodically. New sources and types of information can be discovered always, one just cannot keep up with everything. That is why many companies use services of independent data scientists because of curtaining projects. Therefore, since using Big Data can bring benefits daily. This thought brings up the next challenge.

Lack of experts- Since invention Big Data, it is needless to saying of one person cannot manage it alone. Although. Because for using Big Data it must require a team of data scientists, analysts, developers and managers. Big Data is a relatively new concept so there is not enough educated and skillful experts. The other problem is that even if a company has managed to collect suitable people and made a team, all of them need to possess specific knowledge of the company's strategy and sphere of work, for example.

Integration and connectivity throughout the company- The Big Data concept has emerged as the infrastructure technology of search engines and social media technologies and has found many applications in a short time. Nowadays, new approaches to data management are not included in the previous database solutions in the rapidly increasing volume, speed and diversity of data. In addition, open-

source solutions (for example: Hadoop technology and applications) have expanded the use of large data technology. Thanks to this management approach and technology infrastructure, many business models and usage scenarios have been implemented in the collection and management of high volume data, which have not previously existed or limited use.

In the following period, the following headings are featured in the development of large data competencies in the field of financial services. The determination of the strategy is the starting point. The institution needs to identify and respond to key questions on issues such as the expectation of Big Data usage, the competitive advantage it wants to create, the areas it will use.

Designing technology infrastructure and management is one of the highlights. In order to process large data, different structures from existing data warehouses need to be set up and managed. Establishing the relevant infrastructure, assigning responsibilities in the organizational field and establishing the governance structure are important.

Acting in accordance with the regulations in the field of data management is another important point. Arrangements for data collection, storage, deletion, security and intended use are another important issue for managing the use of technology correctly.

In the field of sales and marketing, it is important to use the Big Data outputs correctly and correctly in the channel management. The aim of the Big Data approach is not only to manage high volume and various data, but also to use them as points that will benefit customers and increase their competitive advantage. Therefore, it is important to establish the right vision in the organization, to prepare the relevant teams for this purpose and to ensure that the insights obtained from the large data are used in the right place at the right time.

Another issue related to the above article is the creation of usage scenarios. In other words, it is important to determine what works can be done on large data and what kind of scenarios it needs to move through. For example; analyzing social media data, reviewing customer comments and making it continuous, can

enable the organization to take proactive steps on many issues related to its products and services. Detailed and continuous creation of usage scenarios is an important point. Establishing the right organizational focus within the organization in connection with strategy and usage scenarios is also an important point. In parallel with the technical investment in the large data area, it is critical to maintain the focus that needs to be established and to produce the usage scenarios, and to ensure the desired efficiency. In time, creating the necessary competencies without getting lost in daily activities requires the organization to maintain focus.

Accessibility-Big Data is an enormous amount of information, some parts can be hidden from a community by such features. Therefore one needs to be sure (or at least try to do so) that a certain closed source contains the desired information before trying accessing it.

The security topic has already been slightly touched upon while discussing some of the previous challenges. Companies are worry about the security of confidential information. This data which keeps them from using their data in its full potential. This worrying undoubtedly has reason.

Software- Hadoop is one of the most widely used software for Big Data processing. Also it is necessary tool for data mining and analysis. Although, because of the aspects such as the innovation of the concept and lack of talent, it is hard to master it.

Databases as a Big Data source-Entrepreneurs today tend to choose to use traditional and modern databases to getting relevant Big Data. This integration paves the way for a hybrid data model and requires low investment and IT infrastructural costs. Furthermore, these databases are given for several business intelligence purposes as well. These databases can then provide for the extraction of insights that are used to drive business profits. Popular databases include a variety of data sources, such as MS Access, DB2, Oracle, SQL, and Amazon Simple, among others.

Media as a Big Data source- Media is the most popular and important source of Big Data, as it provides valuable insights on consumer preferences and changing

trends. Since it is self-broadcasted and crosses all physical and demographical barriers, it is the fastest way for businesses to get an in-depth overview of their target audience, draw patterns and conclusions. Media includes social media and interactive platforms, like Google, Facebook, Twitter, YouTube, Instagram, as well as generic media like images, videos, audios, and podcasts that provide quantitative and qualitative insights on every aspect of user interaction.

Cloud as a Big Data source- Today, companies have moved ahead of traditional data sources by shifting their data on the cloud. Cloud storage accommodates structured and unstructured data and provides business with real-time information and on-demand insights. The main attribute of cloud computing is its flexibility and scalability. As Big Data can be stored and sourced on public or private clouds, via networks and servers, cloud makes for an efficient and economical data source.

The web as a Big Data source- The public web constitutes Big Data that is widespread and easily accessible. Data on the Web or 'Internet' is commonly available to individuals and companies alike. Moreover, web services such as Wikipedia provide free and quick informational insights to everyone. The enormity of the Web ensures for its diverse usability and is especially beneficial to start-ups and SME's, as they do not have to wait to develop their own Big Data infrastructure and repositories before they can leverage Big Data.

Iot as a Big Data source- Machine-generated content or data created from IoT constitute a valuable source of Big Data. This data is usually generated from the sensors that are connected to electronic devices. The sourcing capacity depends on the ability of the sensors to provide real-time accurate information. IoT is now gaining momentum and includes Big Data generated, not only from computers and smartphones, but also possibly from every device that can emit data. With IoT, data can now be sourced from medical devices, vehicular processes, video games, meters, cameras, household appliances, and the like.

Customer data from social media- We are in an age where information is important. Consumers have so many opportunities for choosing and so much

permit to goods and services that businesses cannot actually hope for consumers to find them. Instead of needing get to know them better businesses should use rightly social media. Customers' insights are innovative and interesting parts of information about a company. They include key demographic information like age, gender, and location, but also theme of interest in products.

Companies need as much information about their customers who they targeted as possible. It seems like "I'm watching you" way - but they need to know what buyers want, where they spend time online, and how they feel about products and so on.

Before using customers' data retailer must know bellows:

- Analyze your customers and understand what they buy;
- Identify your competitors' buyers and find out why they don't choose you;
- Watch business trends to know what motivates for buying consumers today;
- Find new market of your products for selling directly to them;
- We can show some examples about using social data;
- Recognize topics and trends that make your clients tick- There are different groups of influencers; customers, celebrities, and employees, using Facebook's social analytics tools and determine patterns in visuals and the data. Use the insights to improve the shareability and engagement of your content, to collect ideas for future content marketing campaigns, and to get insight and ideas for product and service development;
- Build a relationship with influencers- Determine the most influential and popular customers to build a trust of people sharing your branded hashtag with your content. As customers, we trust reviews and reviews over branded content -of social media services increasingly main content from our friends and network. On average posts by our friends, have likes and comments;
- Provide an influential customer experience and personalized interactions based on consumers' data;
- Enrich the data stored in your marketing tools with the customer's social data, and use it to personalize your consumers and call-to-actions. With tools like

Right message on right time in right place, you do not need to change the call to action;

- Service of highly targeted advertising in different groups: Analyze which type of customers' services are using and finding also predict the right timing to serve similar advertising in social media, email marketing, and other communication channels. Most of the social channels enable you to create custom consumers too.

Modern retailers are progressing parallel to the development of technology. One of the biggest changes in the retail industry over the past 25 years has been the accumulation of data collected through the scanners mounted on the cashier or sales point of sale so that retailers can more accurately track what customers are doing and develop everything from inventory management to product ads. Because retailers have increased their purchasing power with suppliers as well as buyers with this knowledge and knowledge. The biggest impact began during the transition to the 21st century and continues. In general, the establishment of a customer information system should be one of the key goals of the retailer. At present, store chains in Azerbaijan mainly use barcode systems. The main features of this system are the lack of display distance for reading product labels, as well as the ability to read multiple labels, and to update the information on labels over and over again. Another feature is that when a customer enters the store, his bonus card is read by the system and sent to the customer only for a special discount on his or her mobile phone. On the other hand, the gradual development of mobile payment allows the retailers to create mobile applications, build online shopping sites on their sites, and let the retailer need to invest in the development of this field, given that the new generation of alpha generation will be able to use high-tech tools.

We have another problem and difficulty with Big Data. Big Data prepares steal and take itself our jobs. Big Data and programs get ready challenge past process and professional knowledge in work in the 21st century in the same way. Let us think and do example about a lab with technician who is working a microscope at a cancer biopsy and after identifying, determining in a results

whether it is cancerous or not. The person firstly went to university or academy. The person buys property and after he or she can vote. Nowadays he or she is a stakeholder in society or among peoples. In addition, that person's job, as well as an entire navy and fleet of professionals that white-collar worker like that person, is going to search and find that their jobs are absolutely changed and eliminated or may be removed. In modern world, we must think about technology that creates jobs over a period of time after a short, temporary also permanent period of or revolution, dislocation, and that is true for the frame of reference that comment on customer data. However, we forget some parts while analyzing in report: There are some categories and classification of jobs that simply are eliminated, removed and never come back again. The technology improvement was not very good if you work in a position that it is not needed in future. Therefore, we must be careful about innovation and take Big Data and adjust or modify it for our requirements, our very human needs.

2.3. Ways Big Data Is Revolutionizing Marketing And Sales

The use of Big Data in marketing allows businessmen to:

- Better know your consumers, attract a similar audience on the Internet;
- assess customer satisfaction;
- understand whether the proposed service meets the expectations and needs;
- find and implement new ways that increase customer confidence;
- create projects that are in demand.

Here are several developments that are most likely to happen in the nearest future which will affect Big Data and everyone who wants to use it.

- The volume of data will increase even more. Alongside volume, the amount of sources from which this data will be derived will increase as well.
- Software for Big Data will improve and more diverse. Free-of-charge, easily accessible and adjustable software like Hadoop makes a huge contribution to the progress of Big Data technology.

- The privacy issue will become more important. As it was mentioned already, more companies and common people start to worry about the privacy of their data. Thus more obstacles for Big Data development are arising.
- Big Data volume and complexity requires extreme speed of analyzing, that is why new technologies such as machine learning will become more necessary.

The significant diversity and high growth rate of Big Data make it possible to regularly obtain useful results that are effective in conditions of continuous growth or oppressive uncertainty. This technology makes it possible to ensure 98% collection of parcels of an online store in 50 minutes, speed up the passage of goods through the warehouse by 11%, reduce the loss of fresh vegetables and fruits by 8%, raise the net margin of stock stores by 7%.

Volume and speed matter: Big Data of small retail- Internal employees thoroughly know the finest features of the business, build a lot of sophisticated reports, generate excellent deep hypotheses in their area of competence, are able to shovel unimaginable mountains of accumulated values, but this has nothing to do with the notorious big data. When owners and tops demonstrate expensive software and hardware platforms and the results they form, I really want to cry loudly. Significant funds have been spent, teams of specialists have been recruited, bold promises have not subsided, and they are reasoning about the practicality of translating raw information into a meaningful, applied form only in the future of indefinite time. It makes sense to talk about Big Data if you:

- understand what it is and actually possess it;
- know how to form hypotheses and know the methods of productive processing;
- are ready to expend significant efforts on analysis and apply results in real business.

Want to interpret a large amount of data, focusing on key performance factors, modeling the outcome of various options for action, tracking decision results? I would recommend, for a start, to admit that you do not have Big Data. Big data is not available to employees of enterprises, because companies do not spend efforts to collect information of dubious utility. I will give a few real-life

examples of the initiation of collecting and processing big data with a relevance of no more than six months.

A well-known network of petrol stations agreed to collect data on the climatic conditions at their facilities, conducted a twenty-member survey of employees, began requesting the servicing bank payment card payment transaction lines and authorization codes to enrich the directories of goods sold with indicators:

- energy value;
- positions of weight / volume of a packing row;
- percentage of packaging in weight of goods;
- component of proteins, fats, carbohydrates;
- fragility of packaging - does it break when dropped;
- delicacy of goods - resistance to compression;
- how many units you can take in your hand without a package;
- haze packaging - such products are associated with health;
- ringing of the packaging - thunders in the vehicle during shocks;
- the nearest place of possible use - on the spot, in the vehicle, at home.

Now the owners of a network of gas stations are happy owners of big data on employees, products, routes of refueling vehicles, the behavior and preferences of customers. The possibilities of analytics have expanded unprecedentedly - we managed to create joint BI external data processing with internal information sources, which created a more complete picture and formed a “business intelligence” - an understanding that cannot be obtained from a simple data set of standard accounting systems. The trends of the first year suggest a margin increase of 4% as a result of the implementation of the strategies found.

For example, the early termination of the visit of women, who measure more than four pairs of shoes, allowed:

- gradually oust such a type from stores, which unloaded sellers by 19.1%;
- increase the likelihood of buying by surrounding women by 14.7%;
- reduce the stress level of employees from failed purchases.

In the restaurant chain, we began to collect the following information:

- what are the seats at the tables occupied by guests;
- how much is left to tip and what notes;
- appeal, which is used, calling the waiter;
- agree to use freshly ground pepper for seasoning ready meals;
- an order in which they are asked to bring an order or no wishes on this matter.

By combining new data with existing ones:

- tables occupied by the time of arrival of guests;
- dishes ordered sos only visitors;
- previous orders tied to loyalty cards or payment, it was possible to learn more precisely to prompt;
- Chef - the volume of products to optimize purchase prices;
- waiters - where to seat guests and what to offer from the menu to get more tips;
- owners - predicted payback of food outlets and the need to open new establishments.

With our help, a large online store has introduced a screen dividing screen into squares in order to track the route of the mouse pointer between the elements of the virtual grid, measuring the time spent in each quadrant. For the quarter hundreds of thousands of handwriting patterns of movement in the visual field were collected and summarized. The routes subjected to clustering allowed us to single out 21 behaviors of the site visitors and develop specialized mechanics for them to increase the likelihood of completion of the purchase. Volume and speed matter: Big Data of small retail. Attraction of external Big Data specialists allows achieving superior results:

Working with different businesses in different industries, professionals have filled a sufficient number of cones for other people's money, and it is better to learn from the mistakes of others.

When doing projects in related areas, the consultants learned and tested many take-off and not working hypotheses, which will save time for brainstorming when setting tasks

Colleagues managed to accumulate extensive collections of methods, algorithms and procedures for normalizing and cleaning data, which, as a rule, improves the accuracy of the forecasts made by 13.8%.

Sources of information and methods of its processing- The web resource itself is the main source of customer data. Registration information, user answers to the questions in the questionnaires and polls, reviews - these data are gathered and analyzed by almost every online store today. Using counters and analytics systems (Yandex.Metrica, Google Analytics, and others) provides an opportunity to assess site traffic, the most frequent routes, the most popular sections, the depth of interest, and the behavior of visitors. Social networks, forums, blogs, mobile applications and external information providers (for example, sellers of customer bases) are also sources of big data.

Modern automated technologies allow processing huge unstructured information flows. Here are the main decisions of the Big Data market:

Database management systems (Sap, Oracle, Microsoft, IBM and others)- Solve the problem of storing and processing information, analyze the dynamics of indicators and provide the results in statistical reports. On their basis, the systems carry out predictive analytics and give recommendatory conclusions (for example, a forecast of the number of orders, the degree of effectiveness of a particular advertising campaign).

Algorithms that analyze Big Data, extracting useful data (interests, intentions, consumer preferences). They build predictive analytical models for the preparation of marketing campaigns and identify the most relevant advertising methods (for example, Yandex Data Factory, CleverDATA).

Ready-made services that allow you to personalize advertising campaigns:

Procurement management services of RTB advertising, which, based on data, predict the actions of target users and target advertising in all online channels (for example, Segmento, RTB-Media);

Commodity advisory services that show products on the site that can maximize the interest of a specific visitor (RetailRocket, “1C-Bitrix BigData”);

Content personalization services showing users the most suitable versions of web resource pages for them (Personyze, Monoloop, Crosss);

Personalization services, which, based on customer information, send targeted emails (for example, Vero, Personyze);

Targeted advertising services in social networks that solve the problem of attracting potential buyers and increasing sales (registrations), reaching the target audience, announcing new products and promotions, as well as improving the company's image (for example, HiConversion, myTarget).

In fact, the boundaries between these developments and services are not as clear as they are actively cooperating with each other, constantly improving and adding new functionality. In addition, now there are more startups working with Big Data. For example, new systems for targeting advertising in social networks of Runet (SocialKey Ads) or Persuasion API service, which, when personalizing a web resource, is based on the psychology of persuasion.

How to effectively use Big Data for the site- The owner of any site must constantly optimize his conversion, otherwise he simply will not survive in the competition. Personalization allows a business to always be on the wave of customers, to build the right communications with them and increase the return on the site. For example, a customer, having received a newsletter, went to an online store, looked at certain products, but did not buy anything. Upon learning of this, you can send him a letter with an illustration of the product itself and offer him a discount. Based on information about visits to a web resource, you can also improve behavioral metrics, make the site more convenient and more interesting for customers, and thus contribute to its advancement in search.

There is no single big data usage pattern. Much depends on the finances and the willingness of management to introduce new technologies for business development. Large Internet portals that have a huge amount of information and the ability to select experts to work with them use data management systems (directly or through intermediaries). Ready-made services do not require infrastructure costs, and they are fairly easy to implement into the operation of the

site. This makes them accessible to owners of web resources who do not have a budget for Big Data system solutions, but who want to more clearly segment the auditor and to improve the accuracy of advertising hit the target.

It should be remembered about the importance of the choice of the processed data. All incoming information can not be useful for business, you should not mindlessly try to accumulate and analyze everything, it can lead to a waste of time and money. For example, it may be unimportant information about site visits in other cities (if the resource is not aimed at sales across the country). It is not necessary for a website selling TVs to know whether a customer has pets or his passion for brands. Information must be carefully selected, sorted and divided into the one that needs to be stored and analyzed, and the one that can be ignored. The key to success is the correct formulation of goals and objectives for which big data technology will be used.

CHAPTER III. CASE STUDY- THE CHAIN OF SUPERMARKETS "ARAZ"

3.1. Stability of complex economic systems in a market environment

Azerbaijan is one of the countries holding a high position in the ICT application in the state administration. It should be noted that in Azerbaijan, as the research area of large data, one of the main challenges of the 20th century,

The use has already been started. So, the collected and processed e-government portal, which has been established in 2012 and now has 80 organizations, has provided more than 650 e-services to citizens, and the number of users has reached 2.5 million. This is also a growing volume of data collected at the state level different

It creates serious problems for analytical analysis for purposes. The first Data Center in the region, which was created on the basis of cloud technology, is now ready for the solution. The launch of the Data Center will allow expanding the "Electronic Government" in the country and maintaining the information of state and non-governmental bodies. (https://www.e-gov.az, 2018)

In the first decade of the XXI century, the gaps that were felt in the retail sector in the capital's Baku market of the country, revealed the need to create a new supermarket chain. AzRetail LLC was established on May 7, 2011, with the participation of educated and motivated people who are well acquainted with the external and internal markets. Thus, the "Supermarkets Araz" chain was put into operation, which resulted from the aspiration to cover the whole of Azerbaijan. The chain of supermarkets "Araz", which launched 4 branches in 2011, chose the phrase "Where you are, there Araz is" as its slogan. As a result, the policy of sustainable growth of the chain of supermarkets "Araz" continued to bear fruit in 2012-2013. Over the years, thanks to a strong personnel policy, the company opened 12 branches in Baku and Sumgait, increasing the total number of supermarkets to 16. The chain of supermarkets "Araz", which is open for dialogue with customers and is ready to respond to their needs, continued to increase the

number of subsidiaries and by the end of 2014 their number in three cities of Azerbaijan - Baku, Khirdalan and Sumgait, have reached 23. Supermarket “Araz”, which retains its attention to the dynamics of the market and the wishes of customers, will keep opening the new branches in the coming years.

The implementation of the motto "Where you are, there Araz is" by creating a supermarket chain, focused on all regions of Azerbaijan.The main principle of “Araz” supermarket chain is providing consumers with a wide range of food products and non-food products at reliable and affordable prices. Creation of a stable, comfortable, family environment for the employees of the company. We will try to study and train together. Providing the best customer service, taking into account the wishes and suggestions from our customers. Creation of new jobs by opening supermarkets in other cities of Azerbaijan.

3.2. Examples of how company is using Big Data analytics

One of the biggest changes in the retail industry over the past 25 years has been the accumulation of data collected through the scanners mounted on the cashier or sales point of sale so that retailers can more accurately track what customers are doing and also develop everything from inventory management to product ads. . Because retailers have increased their purchasing power with suppliers as well as buyers with this knowledge and knowledge. This meant that the purchasing power of the suppliers in the 1950s and 1970s was taken from them to the retailers. The biggest impact began during the transition to the 21st century and still continues. Retailers are now able to easily track what products are good, which products are poorly sold. From 1996 to 2008, the range of products sold by medium-sized retailers increased by 50% to 47,000.

Bright to retailers who fit into the needs of future customers. But how do retailers do this? It depends on their market and target audience. Businesses should accurately analyze what data is available and set up action plans based on this information. In some cases, it's up to you to develop, discover new store formats,

or upgrade your options. For others, it means using new technologies or re-training the staff. In any case, first of all, customers' wishes should be considered and more personal relationships should be created in the shops. However, one thing is clear: in the coming years, retailers are not an option to stay where they are when they want to grow.

Modern retailers are progressing parallel to the development of technology. One of the biggest changes in the retail industry over the past 25 years has been the accumulation of data collected through the scanners mounted on the cashier or sales point of sale so that retailers can more accurately track what customers are doing and also develop everything from inventory management to product ads. . Because retailers have increased their purchasing power with suppliers as well as buyers with this knowledge and knowledge. The biggest impact began during the transition to the 21st century and still continues. In general, the establishment of a customer information system should be one of the key goals of the retailer. At present, barcode systems are mainly used by store chains in Azerbaijan. But in recent years, giant retailers of the world have shown great interest in the application of RFID systems and their use is increasing. The main features of this system are the lack of display distance for reading product labels, as well as the ability to read multiple labels, and to update the information on labels over and over again. Another feature is that when a customer enters the store, his bonus card is read by the system and sent to the customer only for a special discount on his or her mobile phone. On the other hand, the gradual development of mobile payment allows the retailers to create mobile applications, build online shopping sites on their sites, and let the retailer need to invest in the development of this field, given that the new generation of alpha generation will be able to use high-tech tools.

Having Big Data does not naturally lead to superior marketing – but the main way is there. By using of Big Data, organizations can make significant affect in these key areas:

Consumer relationship. Company know customers, their place, their requirements, right time and contact information.

Consumer holding and faithfulness. Big Data can assist you find what impacts consumer faithfulness.

The best choice- With Big Data, you can decide the ideal marketing tools, like testing, examination and analysis.

Benefit from using Big Data- The customers of a business are the most important point of company. Depending on the type of business, a company may sell to the same customers repeatedly. As a result, the way a company uses customer information can be very important. A customer database is the collection of data that is collected from each consumer. The database may include contact information, like the person's name, address, phone number, and e-mail address. The database may also include past purchases and future needs. Having a customer database benefits a company in different ways.

Businesses may ask questions of their customers to determine better service. The shop manager may ask about products his customers may be interested in such as chocolate or fruits and so on. By collecting data, the customer database not only keeps vital information about the consumers, the database can help the shop manager provide how to improve his business and better meet the needs of his customers.

Having a database can help a business keep in contact with customers. This helps build loyalty and repeat business.

Three problems solving via Big Data. The chain of supermarkets “Araz” uses Big Data for three goals:

- to minimize the excessive production;
- to take mass production on a whole new level;
- to decrease the time between the start of design and the sale.

Usually retailers produce more items than they requirements, because of the fear of not fulfilling request. That leads to many products being transferred to discount retailers, which results in loss of money. Big Data permits companies to expect the request much more absolutely, by analyzing past seasons and combining the results with current customer information. Thus, there is minimum to no unsold

things, which means lower production, inventory and transferring costs. According to Data, the chain of supermarkets “Araz” produces from 50,000 to 100,000 products monthly, which is more than five times more than the numbers shown by Bazarstore and Bravo. Data helps to quickly understand which items are growing in demand and then adjust the production cycle to satisfy this demand.

Data sources- The chain of supermarkets “Araz” tried to find new sources to stay up-to-date and discover new insights. The company collect and store information from websites and social media platforms. With using of Big Data the company can predict consumer demands and improve marketing efficiency.

As you know supermarkets use data about our shopping habits to target customers with personalized and offers.

If you have a consumer card which called loyalty card or doing shopping online, the supermarkets will create your account of profile and begin to collect data.

With helping of customer database, we can make them happy. Today’s consumers anticipate a personalized and customized experience with your brand. To deliver one, marketers need a unified view of each customer across every touchpoint. Only then, retailers understand the customer’s buying journey and be in connect with them in a meaningful way. Database marketing strategies make that easier.

Customers who buy from your market information base can help you:

- Identify customer category – from your most loyal, high-value consumers to first-time customers;
- Create detailed customer groups based on personal interests, behaviors, or even demographics;
- Imagine highly personalized messages;
- Determine the best way and time to join in customers.

Identify marketing benefit ways by spending time rightly and money sending campaigns and discounts to those who are unlikely to answer.

Build successful and effective loyalty and supported programs that determine the right motivation for repeat payment and sales. How should you going to start creating and improving your marketing strategy with Big Data usage?

Determine target customer.

- How old are they?
- What income level?
- What job title?
- Where do they live?
- What hobbies they have?
- What products do they buy in addition? And so on.

  Combine with other different teams: They may be marketing, information technology, sales and other data.
- Find the right program that you will use. Prefer a program, which does it easy to see variety types of information, consumers' different types, and even arrange customer data to fix with your different product, outcome or service levels.
- Gather customer data.

  You can see below types of data:
- Acquisition data: Where did a new customer come from? In which way did benefit come to company? Which marketing campaign will bring you customers and benefit?
- Demographic data: How old are your customers or consumers? Customers' location, education level is asked in survey. Woman or man, bachelor or married may be demanded in questionnaires.
- Technographic data: Which programs are used to connect by your company?
- Psychographic data: Which personal perspectives do they have, like values, and interests? Which of them encourage?
- Activity data: In which way have they joined with your blog, social media pages also for example mobile app?

- Transaction data: How often do they make a payment with you? How much do they spend? Which things do they usually pay together?
- Correspondence data: Attached a question or objection to you in your social media pages? Answered to a survey?

One of the examples mentioned is the retail chain Araz. The company's work algorithm works as follows.

Retail chain company is taking a customer identification number attached to each customer's credit card, name, or e-mail address. This number collects customer's entire shopping history and demographic information generated by Target from them and from other sources. Using this data, Araz market looked at shopping data for all registered women. This is by calculating the pregnancy index based on the products the targeted company lady customers buy has significantly increased sales to customers by sending brochures, coupons and e-mails according to the months of pregnancy.

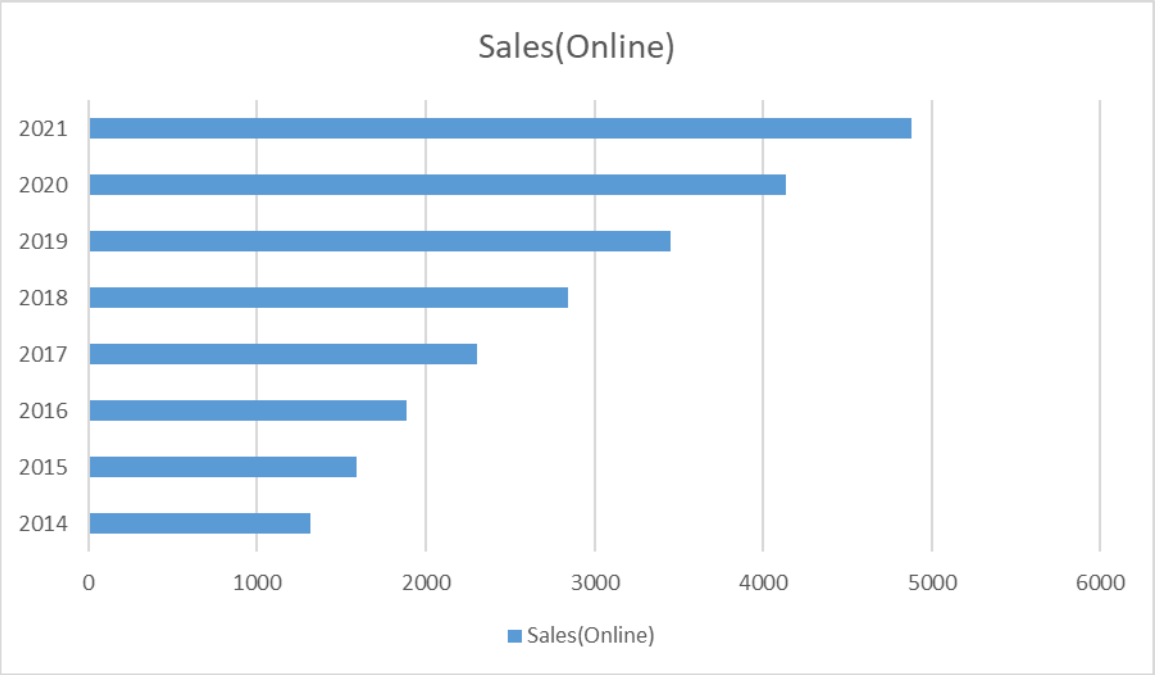
As you can see, Big Data causes change in the retail industry. In the Araz market inventory system, the Big Data Leadership can show how many products are available for each supplier on each shelf at each store. Customers using the Araz market shopping site are the Araz company's "Customers who bought this product" feature, which is why their users buy additional products and increase their sales potential. Internet the Big Data Analysis method is used to collect targeted ads to automatically reach people's web pages by collecting data created by the business model dominated by users.

Analysis methods. For example, it is advisable to keep track of personalized campaigns by analyzing similar data such as real-time location data from smartphone applications, storing targeted ads as soon as people are online, and increasing market share as a result of people being online results will be provided.

The aim of customer analytics is to create only, accurate sight of a customer to decide about how best to acquire and get customers, determine most visited consumers and always interact with them. For understanding of a consumer’s practice and hobbies.

Customer behavior is often controlled by an integrative group made up of entrepreneurs from different departments in the company, with marketing, sales, customer service, IT and business analysts.

Figure 4. Total sales volume of retail trade, from the year 2014 to 2017, from 2017 to 2021



Source: Total e-commerce retail sales worldwide. statista.com

One of the results of the report, prepared by Marketing, allows retailers to better track their customers as a result of the use of Big Data.

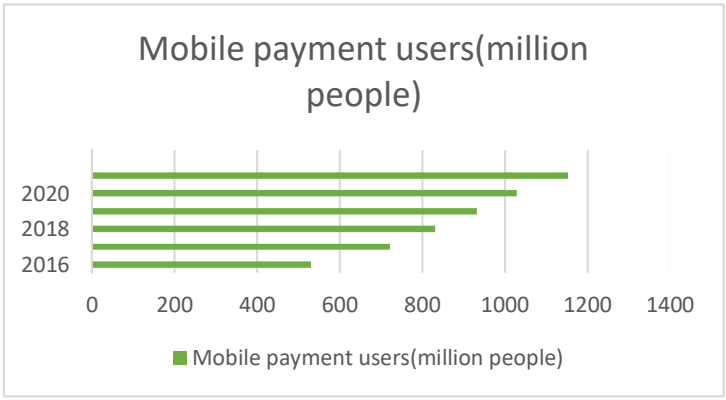
As seen from the graph, outsourcing is growing from year to year and its share of all retail sales grows every year next year. For example, if the share of out-of-store total retail sales of sales in 2014 was 5.9%, this ratio was 6.7% in 2015, 7.4% in 2016 and 8.2% in 2017. It is expected that the share will be 8.8% in 2018. Since then, the quantity of Internet users in the world has been increasing. In 2014, 42.7% of the world's population had access to the Internet, with 44.3% in 2015, 45.4% in 2016 and 46.4% in 2017, and it is expected that this figure will be 47.3% in 2018 .

With the advent of technology and the evolution of time, the volume of trade out of the store is gradually increasing. Building relationships across the globe is of

paramount importance to everyone. With the advent of the Internet, people are increasingly expanding the way they communicate around the world, and social networks have become the most important means of communication. Coming globalization and spreading worldwide networks have accelerated the relationship with all parts of the world.

This technology and modernization have given a great boost to the sale of mobile phones and other coordinating devices [7, p.8]. Out-of-store retailer is of great importance in developing countries and rapidly developing countries during the present-day IT. The following chart shows the total sales volume of retail trade, from the year 2014 to 2017, from 2017 to 2021.

Figure 5. Mobil payment users (2016 – 2021)



Source: Number of proximity mobile payment transaction users worldwide 2016 to 2021. statista.com

It is important to note that, along with retailers, consumers are developing day by day. These are the receptions that retailers need to keep in control of changing consumer shopping habits, accelerate the application of key industry trends, and identify what is relevant to your business. Retailers had to admit that one object

was stacked and customers were already in the future. Retailers should be able to demonstrate to consumers that they truly value their time and expectations. Last year there were major changes in online retailing trends. In 2017, online retailers have increased by 24% compared to the previous year. Below are the trends that are planned to be implemented or implemented in the 2017 and 2018 retailers:

Mobile payment methods are expected to spread all over the world in the foreseable future, and retailers who have not used these methods are expected to try to use this method in recent years.

If the probabilities are correct as shown in the graphic, the number of mobile payment users in 2020 is expected to exceed 1 billion. It is also expected that by 2018 this figure will total $ 60 billion, and this figure will dramatically rise to $ 503 billion by 2020. In the near future, retailers who do not apply mobile payment will fall back and the risk of losing some of their shares will increase. If predictions are regarded as any serious indication, it will be inevitable that the rest of those sales will lose a lot of money in general. The use of mobile pos systems, mobile-phone-specific mobile payments (such as Kohl`s Pay) or the use of third-party mobile apps like Apple Pay will become one of the key issues companies should take in the future. The database will have critical importance in the development of retail space

Many retailers will apply the data base from the supply chain to each stage of the retail process, from the time the customer receives the product. The retailer who wisely utilizes these baseline data will undoubtedly develop further. Araz market is one of the companies that utilizes the customer database. A fashion retailer, this company provides style tests for more information about its members and, according to their choices, each customer sends a unique product recommendation. Araz market also has the ability to look closely at what each member seeks, declines, and receives. The use of the database to personalize clients' choices is simply the beginning. This analysis also plays a major role in the scenes, especially in inventory management. Retailers can base their demand on these data and make important decisions about stock control. Thus, retailers can

accurately predict the demand, provide stores with the right products, and less damage to the supply chain.

By testing and examining data with using specific tools, organizations can make successful consumer journey. Selected customers from all channels and analyzing the different ways a product or service can be shared. Interact customers in relation to the company and whether a consumer is satisfied. This can be achieved with surveys. These surveys may be quantitative and qualitative.

It is successful for working with customers at the accurate moment on the right channel in the right time. Predicting habits and taking actions to increase a customer's lifetime value, detecting trends in Big Data and checking behavior for growing sales. Maximizing the customer satisfaction with personalized analysis and dividing market by indicators which customers may getting only type of output.

3.3. SWOT analysis of retail sector of Azerbaijan

Businesses process raw materials through their suppliers and turn them into finished products. Subsequently, these products are distributed by the intermediaries to retail facilities. The retail sector is located at the forefront of "frontline". This sector has always had a direct connection with the customer, which has increased its importance.

The recent economic fluctuations in our country have allowed us to see the weak and strong sides of the sector. In this chapter of the dissertation, the Swot analysis of the Azerbaijani retail sector was conducted. The study was conducted among 122 employees working in different positions in the retail sector in the territory of the Republic of Azerbaijan without any geographical constraints. The research team included 122 employees. All distributed surveys have been answered. It was established that 17 people did not operate in the retail sector. It was found out that 105 of the respondents were eligible for the study. The collected information and analyzes cover only the period from 22.06.2018 to

20.08.2018. The object of the research is the employees working in different positions in the retail sector of the Republic of Azerbaijan. The subject of the research is 105 people who respond to the survey questionnaire. Surveys for the survey were filled out electronically.

Table 1. Age ranges indicators

Age ranges			
	Speed	Percentage	Cumulative percentage
41-50	5	4.8%	4.8%
31-40	11	10.6%	15.4%
20-30	88	84.6%	100.0%
Total	104	100.0	

Source: Author's own survey

The information used in the research work is based on the opinions of the respondents on the questionnaire and the information they share. The information used in the research was obtained from the initial source based on the survey responses.

Table 2. Work experience period

Work experience period			
	Speed	Percentage	Cumulative percentage
10+	10	9.6%	9.6%
5-10	24	23.1%	32.7%
3-5	23	22.1%	54.8%
1-3	30	28.8%	83.7%
0-1	17	16.3%	100.0%
Total	104	100.0%	

Source: Author's own survey

Description of work experience should be as specific as possible. Each new company in your track record must correspond to a separate line indicating the

period of work, the name of the company, its brief description, your position, duties and achievements.

Survey study consists of 2 parts. The first part, called the General Part, contains the information needed to determine the demographic characteristics of those involved in the research. The second part consists of 3 sections. The first section outlines the macroeconomic factors affecting enterprises.

Table 3. Education level

Education level			
	Speed	Percentage	Cumulative percentage
Master	24	23.1%	23.1%
Bachelors	61	58.7%	81.7%
Vocational	6	5.8%	87.5%
Vocational	12	11.5%	99.0%
Incomplete medium	1	1.0%	100.0%
Total	104	100.0	

Source: Author's own survey

In the second section questions of micro-ambient factors were noted. In the latter section, questions about internal factors have been addressed.

Table: 4. Gender

Gender			
	Speed	Percentage	Cumulative percentage
Male	32	30.8%	30.8%
Female	72	69.2%	100.0%
Total	104	100.0%	

Source: Author's own survey

The information obtained for the research was analyzed through the statistical program SPSS 25.0. The result of the survey survey reliability (Cronbach Alpha) was 90%. When considering the demographic characteristics of the researchers, 31.4% of the workers were found to be female and 69.6% were

men. In Table 3 we can also see age rangers as demographic indicators of key management respondents.

Filters are also a very useful tool for data analysis. Filtering means focusing your interest on a particular subgroup and removing other groups from evaluation. So instead of comparing a subgroup with the other, we're looking at how a single subgroup responds to the question. For example, you can focus your attention only on female (or male) participants and rearrange the cross-table according to the participant type, and compare female managers, female teachers, and female students. Please note that when you evaluate your results in detail, each sample size will decrease when you create or filter each crosstab. You can utilize the examples size sampling to ensure that your results have a statistical meaning.

Table 5. Can your company adapt Big Data?

Can your company adapt Big Data?			
	Speed	Percentage	Cumulative percentage
I do not agree exactly	8	7.7	7.7
I do not agree	5	4.8	12.5
Partially agree	36	34.6	47.1
Agree	40	38.5	85.6
Completely agree	15	14.4	100.0
Total	104	100.0	

Source: Source: Author’s own survey

As can be seen in Table 4, the youngest employer is 20 years old and the eldest one is 50 years old. The vast majority of respondents are aged 20-30 - 88 (84.6 percent). 85 respondents (81.7%) were university graduates. It is clear from this part of the survey that participation in the survey is mainly related to male and young workers.

Table 6. Can your enterprise adapt to use Data

Can your enterprise adapt to use Data			
	Speed	Percentage	Cumulative percentage
I do not agree exactly	7	6.7	6.7
I do not agree	10	9.6	16.3
Partially agree	32	30.8	47.1
Agree	43	41.3	88.5
Completely agree	12	11.5	100.0
Total	104	100.0	

Source: Author's own survey

Based on table, we can see adaption of Big Data usage where it applied. After reviewing Part 1 of the questionnaire, we can go to Part II. Section 2 consists of three sections, as we mentioned earlier.

Table 7. Can your company adapt to the rapid development of technology?

Can your company adapt to the rapid development of technology?			
	Speed	Percentage	Cumulative percentage
I do not agree exactly	8	7.7	7.7
I do not agree	9	8.7	16.3
Partially agree	28	26.9	43.3
Agree	41	39.4	82.7
Completely agree	18	17.3	100.0
Total	104	100.0	

Source: Author's own survey

Online surveys can quickly get information about opinions of your customers, competitors, contractors, consumers services, including educational services (students), and choose methods and solutions to improve the quality produced you goods and / or services. Properly selected management decisions allow to achieve positive results.

Table 8. Can Big Data affect your sales?

Can Big Data affect your sales?			
	Speed	Percentage	Cumulative percentage
I do not agree exactly	21	20.2	20.2
I do not agree	20	19.2	39.4
Partially agree	27	26.0	65.4
Agree	29	27.9	93.3
Completely agree	7	6.7	100.0
Total	104	100.0	

Source: Author's own survey

Online surveys are widely used by large companies, employees of medium-sized firms and small businesses, blog owners, employees of marketing companies.

Table 9. There are more customers in your business than regular customers

There are more customers in your business than regular customers			
	Speed	Percentage	Cumulative percentage
1	4	3.8	3.8
2	9	8.7	12.5
3	20	19.2	31.7
4	46	44.2	76.0
5	25	24.0	100.0
Total	104	100.0	

Source: Author's own survey

It is important for results of Big Data usage. Because, owner must know about Big Data impact in sales. Questionnaire closed type involves the choice of answers from proposed options. An open questioning involves the independent design of a response by the respondent. If your survey sample consists of randomly selected individuals from a familiar society, the indicators may be calculated in a more standardized manner. The main factor here is the sample size. Imagine that 50 out of 1000 people who participate on your event answered

the survey. Fifty respondents for the example size are very small and result in a very large margin of error.

Table 10. Your organization acts in accordance with legal procedure and documentation

Your organization acts in accordance with legal procedure and documentation			
	Speed	Percentage	Cumulative percentage
1	7	6.7	6.7
2	6	5.8	12.5
3	19	18.3	30.8
4	37	35.6	66.3
5	35	33.7	100.0
Total	104	100.0	

Source: Author's own survey

If we write generally, results won't have enough weight. Based on Table 9, we see that the majority of employees (52.9%) think that enterprises are able to adapt to government decisions. Generally, a company with one or more foreign affiliates or subsidiaries is involved in international management activities. The fact that the activities take place in more than one country gives the company an international business character. According to the respondents' opinion (78%), enterprises are constantly observing new entry-level enterprises and their innovations (72.1%). This indicates the severity of competition in the sector.

Table 11 New competitors in the market are always interested in your enterprise

New competitors in the market are always interested in your enterprise			
	Speed	Percentage	Cumulative percentage
1	5	4.8	4.8
2	8	7.7	12.5
3	11	10.6	23.1
4	35	33.7	56.7
5	45	43.3	100.0
Total	104	100.0	

Source: Author's own survey

As shown in Table 11, all respondents answered all questions in this section. According to the majority of employees (64.2%), there is a smaller share of customers than regular customers. The most accurate indicator of customer valuation is the Customer Journey Value approach. Customer Journey Value means the lifetime value of the customer. That is the profit we expect from the customer for a lifetime. When it comes to lifetime, it is time to change from company to company.

Table 12. Intermediaries in the face of your business are less competitive

Intermediaries in the face of your business are less competitive			
	Speed	Percentage	Cumulative percentage
1	8	7.7	7.7
2	9	8.7	16.3
3	36	34.6	51.0
4	40	38.5	89.4
5	11	10.6	100.0
Total	104	100.0	

Source: Author's own survey

This also shows the firm's strong position in the market. Properly selected management decisions allow to achieve positive results.

Given the socio-cultural status of clients (61.5%) and their demographic composition (57.7%), they have not been well adapted to changes in politics.

The key to effective inter-organizational competitive advantage when evaluated as a resource, especially when customer requests and innovation in the process of innovation that undertakes critical functions in response has become one of the key determinants of effectiveness in management. In this study, time-based organizational for the inter-organizational system focuses on competition strategies. Again, the majority of workers (52.8%) believe that enterprises can adapt to the events in the economy. Also, according to the employees, enterprises have managed to keep up with geographical location selection (62.5%) and technology (56.7%). In the face of mediators, the bargaining power of the

enterprises (49.1%) is partly weaker. This also affects the pricing policy of businesses.

Table 13. Your enterprise immediately reacts to the market innovation of your competitors

Your enterprise immediately reacts to the market innovation of your competitors			
	Speed	Percentage	Cumulative percentage
1	4	3.8	3.8
2	6	5.8	9.6
3	19	18.3	27.9
4	37	35.6	63.5
5	38	36.5	100.0
Total	104	100.0	

Source: Author's own survey

The market share of the surveyed retail sector (67.3%) indicates the size of enterprises. Exponential increase in digital data produced worldwide, large quantity, speed and it has triggered the development of large data applications that enable the storage, management, processing and meaningful results of a variety of data. A comprehensive review of their policies and legislation has emerged as a reflection of this. Because the big data deeply influences the principles of fair data processing on which modern privacy regulations are based.

Table 14. Your company has a big market share (in contrast to competitors)

Your company has a big market share (in contrast to competitors)			
	Speed	Percentage	Cumulative percentage
1	4	3.8	3.8
2	15	14.4	18.3
3	15	14.4	32.7
4	38	36.5	69.2
5	32	30.8	100.0
Total	104	100.0	

Source: Author's own survey

As shown in Table 4, all respondents answered all questions in this section. According to the majority of employees (64.2%), there is a smaller share of customers than regular customers. This also shows the firm's strong position in the market.

According to the respondents' opinion (78%), enterprises are constantly observing new entry-level enterprises and their innovations (72.1%). This indicates the severity of competition in the sector.

The effective use of the huge data generated by large data technologies has led to user satisfaction, competitive advantage and high profitability through improvements in business processes, increase in efficiency and improved service quality.

Again, according to the majority of employees (69.3%), we see that in most enterprises, documentation is legally implemented.

Table 15 summarizes the impact of customers who buy from your own market. As shown in the table, enterprises respond to customer satisfaction (79.8%) and customer requirements (71.1%). When we look at the decisions made by enterprises in the individual or group, we see that decisions are taken partially (56.7%). When we look at the decisions made by enterprises in the individual or group, we see that decisions are taken partially (56.7%).

An important task is the formation of competitive advantages, such as: quality improvement; design improvement; reliability and durability of the goods; environmental safety of goods; economic use of resources; increasing the level of work with staff; economic security of the enterprise; new product development (innovation) and other directions. Human resource management in the enterprise should be given special importance. The retraining, advanced training and rotation of personnel due to the adoption of young, qualified specialists should be included.

The factors of formation of competitiveness of retail enterprises were identified. This work contains a scientifically based approach to the formation of competitiveness based on the development and implementation of the Big Data in

retail enterprises. It includes the following main blocks: analysis of the problems; application of Big Data; measuring results of Big Data implementation. Recommendations were made for the management of Big Data usage. For the widespread introduction of development, preliminary professional training in management and marketing, information technologies is required.

Table 15. Customer's review

Your company is constantly following customers' requirements			
	Speed	Percentage	Cumulative percentage
1	3	2.9	2.9
2	6	5.8	8.7
3	21	20.2	28.8
4	41	39.4	68.3
5	33	31.7	100.0
Total	104	100.0	
Your company is constantly pursuing customer satisfaction			
	Speed	Percentage	Cumulative percentage
1	2	1.9	1.9
2	4	3.8	5.8
3	15	14.4	20.2
4	38	36.5	56.7
5	45	43.3	100.0
Total	104	100.0	

Source: Author's own survey

According to all this, SWOT analysis of enterprises operating in the retail sector in Azerbaijan is shown in Table 17. SWOT Analysis is a very simple but useful technique that you can use in your business life and in your own life. The analysis dates back to the 1960s. The vehicle developed by Albert Humphrey has since been kept up-to-date and popular. SWOT Analysis is often used to understand your strengths and weaknesses, as well as the opportunities around you and the threats you are likely to encounter.

Developed ways for the adaptation of the organizational structure of management in an industrial enterprise to market conditions.

When measuring customer portfolio, the company understands the value of the customer. Every employee knows what the company will lose when it loses any customer. It is a clearer idea of the employees who work with customers. More responsive to customer relationships. If the customer is important to you.

Therefore, a special role in choosing right method has management and marketing training. According to respondents, vast majority of businesses continue to operate using modern equipment (67.3%). Although the liabilities (liabilities) of enterprises operating in this sector are small (49.1%), profit and expense planning is most common (76.9%).

Table 16. SWOT analysis of retail sector of Azerbaijan

Strengths	Weaknesses
The greater the weight of regular customers Use of modern equipment Follow customer satisfaction Follow-up of customer requirements Geographical location choice is partly successful Smarter products and services	Partiality of bargaining power of mediators Deciding individual decisions The majority of commitments
Opportunities	**Threats**
The market is open for innovation Adaptation to the development of technology Specialization of shops Creation and development of private brands	Uncertain state of the country's economy Severity of competition Customer's sensitivity to price, service and quality The lack of competence of the staff

Source: Author’s own survey

Strong sides: It is easy to get a customer, but it is difficult to turn it into a permanent and loyal customer. For this reason, winning permanent customers is of paramount importance to every retail. First of all, we need to ensure customer satisfaction. The strongest retailers who can meet customer requirements are ahead of others. This can be done through bonus cards, regular concessions, and free

access to some services. The use of modern equipment makes the work faster and more productive, and ultimately, customers are more satisfied with their service. The success of geographical location selection is a field where every retail venture should perform very carefully. It varies depending on the product and service offered.

Weaknesses: Retailers are people who are in direct contact with the end consumer. However, these products are purchased from other intermediaries and delivered to the end consumers. At the same time these intermediaries can face a number of problems with the retailers during certain campaigns. For example, as a special campaign, you may be able to dispose of the product below the purchase price. The individual decision-making is one of the weakest aspects of our country's retailer. Thanks to this, stores may occasionally experience shortage of product or product. To avoid it, you can use automated systems or help with long-term care professionals. Most of the commitments are typical for retailers in our country. If we explain this to the market manager, that person must manage both the staff, the customer and the suppliers and, at the same time, perform the tasks from the central office.

Opportunities: The main reason why the market is open to innovation is the sole constant of volatility and development, which is one of the most important rules of retailing. In this case, customers are more open to innovations and the development of technology makes this adaptation even stronger. The time to follow and apply modern trends has already grown. Thanks to the specialization of stores, a larger range of products can be introduced to a more specific target audience. Another area to be developed is the development of personal brands, whereas in countries where personal products are 30 to 40% of the total product, this ratio is about 5% or lower in our country.

Dangers: Naturally, each retail venture may face a number of threats to its uncertain situation. For example, due to devaluation in 2015, a number of retailers have become much weaker, and even in general they are in danger of being swapped out of the market. Nevertheless, enterprises that can overcome this

difficult situation have further developed, and thus competition between enterprises has intensified. In fact, competition is always good, because each of the parties involved in the struggle develops more and more. However, in some cases, due to unequal competition conditions, some enterprises face the risk of losing their prior significance. Another issue that hits the customer is the vulnerability of customers to price, service and quality. Price is always one of the important factors for customers, and they prefer to make purchases more convenient for them. Low quality products and low level customer service are also a major threat. First of all, it is necessary to give training to the shop staff and raise their interest in the work with certain encouraging tools. The customer who has any problem with the store often does not buy any more in the store again. In order to have a better service, the staff must be competent enough.

Retailers in market are always looking for and researching a way to use huge volumes of information for following customers everyday. With the improvement of data science and Big Data, it is now possible, reachable and doing for turning into a productive and modern marketing strategy. Information and data science is the basis and main part of decision-making, management processes and procedures in most modern companies, and although, its income revenues are estimated calculation at over $ 40 billion end of 2018 year. Marketing is almostly same with this point. Today, marketing group are trying to attempt with increaing the affect of data and data programming analytics to increase their reach goal and impact. We will know the greatest benefits and advantages of large data in marketing strategy.

Important thing estimates of capacity volume of information exploded over the last five years include that the data conversion and transformation will shortly soon become the main basis source of revenues. A majority part of business intelligence in retail sector is directed on marketing and strategy, also describe with detailed way the biggest impacts in field.

Planning- Big Data analysts and researchers provide marketing or strategy departments with a right analysis and result of recent trends and movement in customer behavior in product or non-product demand. Analysts enable retailers in

marketer to improve indepently strategy and prepare plan for a more effective business. About 65% of marketing leaders in retail sector declare about Big Data importance that data-based marketing is key factor to succeeding in a high speed competitive local marketplace in Azerbaijan. Last years, consumers do not divide to large groups, but also as subdivided or subgroups because which do they buy, that have their provate peculiarities and characteristics, which permit and make a chance them to change life activities and modify tete-a-tete, privately to each customers.

Privatization- In retail sphere customer involvement is one of the key conditions and stipulation for successful and victorious business. While crossing the great data period, marketers in transport carry the products, which prepare to sell, or services, which prepare to offer to almost each consumer’s personal desire preferences with, personalize their operations, restrictions on the operation of market forces and improve their customers' visits. For example, Amazon keeps and analyze after research dozens of petabytes of customers. Such spectacular and amazing information may help business to determine solution for getting goals demographics of target customers, and to know about the hobbies of each customers.

Price determination- One of the most important elements is prices. Beginning marketing mix, prices have always been important to analysis and research carefully for monitoring. But early the big data is involved in the competetive, marketers can adjust the price of their products and services in real time. Today it is possible to price contrast difference, depending on many reasons. For example, trains provide regular tickets for few buyers, and groups are offered discount for those who are sensitive to price.

Customer loyalty- Faithful customers are the important of each business and retail sector. They are repeat and mostly visited buyers who buy products often in same market they are faithful customers . Last research demonstrates that 55% of customers express and show faith loyalty to near surroundings members by advicing most favorite and special markets and shopping places. By utilizing and

using Big Data, retailers in business can determine common best seller products, with helping of their customers, and in result extend income and the faithful customer base.

Advertising advantage- As you can analyze, these Big Data gives us the power to improve marketing strategies, like subscribe to the improvement of personalize consumers along segments. Advertising business is one of the more profitable and successful tools or elements for superior and powerful business decisions in intelligence services. In modern world, the request are managed to personal and specific customer groups, which are more profitable to connect, and in such way the income opportunities are sharply and smartly increased.

Prediction- Data science is researched by analyzing current, past and existing situattion marketing strategies, but is can predict forecast future and innovation trends in the modern world. Because retailers utilize Big Data to create business calculations and predictions that permit them to move carefully and be first ahead of their competitors. In a competition for inccreasing income and being famous for more market share, the Big Data usage is important for many retailers.

In this report, I have highlighted the biggest trends in marketing. This report is shown clearly, how available information is on the improvement of modern marketing strategy. But, taking into attention the innovative Big Data concept science at any moment, we should not be amazed to look for modern trends in marketing soon.

CONCLUSION

21st century is characterized by Big Data of the information technologies under the influence of competition. It is impossible not to notice that an important role in gaining competitive advantages is played by activities of enterprises, due to the marketing strategy. With the development of market relations, competition, the struggle between companies for the markets for goods in order to obtain higher incomes, profits and other benefits more and more clearly fit into the system of Big Data usage. In the period of changes and formation of new technologies, an important place is occupied by the problem of the usage and adapting of Big Data technologies. To be competitive at the present stage is an important task of choosing right application and strategy.

According to a study Big Data represent significant value to users implemented at least one project. The vast majority (92%) of users note that they are satisfied with the business results. In addition, 94% said that active use Big Data fully satisfies their needs. Large companies are more affected extremely high value of Big Data for implementation of their digital strategy.

The present thesis has investigated the topic of Big Data. It provided a general overview of the concept with a discussion of subjects such as data storage, security, data mining and Hadoop that was followed by a thorough SWOT analysis of retail sector of Azerbaijan. The research questions are written on paper. It has noted what a entreprise needs in order to use Big Data from the technical, human and knowledge point of sight. First, it requires a data storage facility, also cloud-based. The business also needs software and the related know-how with data sources. The questions of how to start and how to use Big Data were answered in the in the Chapter 2, which has provided reasons of Big Data usage. The study has determined that in general companies use Big Data to increase the accuracy of different types of decisions. Competent employment of Big Data in marketing results in enhanced customer knowledge.

The consider has decided that in common companies utilize Big Data to extend the precision of diverse sorts of choices.Competent work of BigData in pro moting comes about in improved client information. Companies then use this information to supply uncommonly personalized limited time substance. Social media information may be a extraordinary marker of client engagement as well, which contributes to the by and large understanding of an group of onlookers.

As for the clothing retail showcase, another critical advantage that huge data brings is the capacity to anticipate patterns and so the request.

The proposal has found that cutting the costs of Big Data is conceivable by means of utilizing third-party administrations.

The strategy works well for a littler trade, with security concerns and halfway control over operations being the most downsides.

The information is unstructured, which makes it harder to analyze but it regularly brings more esteem.

The investigate has set up that the information a company assembles from social media is often than not require exra preparing.

The hypothetical portion of the paper was taken after by a case think about highlighting retail companie of Araz Supermarkets. Generally the report has helped in understanding the essentials of huge information concept as well as the more point by point perspectives of its utilize in promoting.

Creating a new competitive model necessitates solving a number of serious problems in the company. An important fundamental problem is the Privacy concernsmay causepublic/privateopposition to BigData and siloed data. The fact that enterprises lack the necessary strategic orientation leads to insolvency and bankruptcy.

Competitive status is the potential that corresponds to the market. The level of personnel must comply with this modern technology.

The disadvantage in the work of retail enterprises is that marketing functions are aimed at sales, there is no systematic study of products and competitors. Enterprises should monitor the dynamics of profits, sales growth, price level and

the level of demand for products. The volume of production of manufactured products should be fully subordinate to the life cycle and the level of demand. As a result, enterprises will be able to obtain cost savings (discounts, costs, more rational use of resources).

The results of the research are aimed at strengthening the position of Big Data, introducing a new approach into practice and shaping the competitiveness of an enterprise, and contributes to the progressive development of enterprises in the conditions of market relations. The effectiveness of enterprises, their development in modern conditions depends on improving marketing strategy. As a result of the research, the author made the following conclusions:

The study scientifically substantiates the need to solve the following problems:

- strategic orientation of Big Data in the environment;
- improvement of the marketing strategy of company;
- professional development of IT specialists at retail enterprises;
- implementation of evaluation methods in effect of Big Data techonolgies;
- adapting of Big Data of retail enterprises;
- application of Big Data in small business at the present stage.

In the thesis important problematic issues of creating the competitiveness of retail sector were considered, the theoretical foundations of the formation of competitive advantages of enterprises were disclosed.

In conclusion, we note that the problem of application of Big Data is complex and multifaceted. We did not set ourselves the task of conducting a study of its many questions, but analytical attention to those that, in our opinion, are of fundamental, decisive importance in this period of applying right programme relevant marketing strategy in company.

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TABLES LIST

FIGURES LIST