Big Data Marketing

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***Abstract*- Luxottica, a brand of luxury and sports eyewear, has found that its efficiency increases by ten percent after combining the data of more than one hundred million individual customers it serves through hundreds of global retail outlets and e-commerce sites into a single analytical system and making analytical predictions and marketing efforts. The main reason for this was that it was able to distinguish the customers with the highest value among the huge individual customer base of more than 100 million people. Moreover, they could now target all of them according to their individual characteristics and preferences (IBM, 2013). The idea of combining this information, which was previously in different systems and structures, under an analytical system, was actually the forerunner of a new marketing approach that could be called Big Data Marketing today. The idea of integrating it under the system, in fact, was a precursor to a new marketing approach that could be called Big Data Marketing today.**

Index terms- Big Data Marketing

I. INTRODUCTION

Before explaining the Big Data Marketing approach, it is useful to explain the concept of Big Data. Because everything we will talk about will be based on these concepts and their derivatives. How did Big Data arise? What disciplines are involved? And so…Exactly when the concept came into being, although it is rather vague, the literature (Mayer-Schönberger & Cukier, 2014) points to digital transformation in the early 2000s. The biggest trigger here is, of course, network technologies that transform everything with the Internet. However, it is one of the fundamental scientific laws of the field of information technologies, known as Moore's Law, which dates back to the 1960s, which underlies these network technologies.

Gordon Moore, one of the founders of Intel which is one of the giants of the IT industry, says that every eighteen months, the number of components that can be installed on electronic circuits will double. In practice, this means that while production costs do not change much, there will be significant increases in the capacity of computers. So we're going to do what we did eighteen months ago at half the cost today, or eighteen months later, we're going to do twice as much today at the same cost. In the IT world, Moore's law describes the transformation of everything, from memory capacities to processor speeds, even bandwidths that determine the speed and capacity of networks. To illustrate the issue with a positive example, it is useful to compare today's smartphones with one of the important portable devices of the 1980s. For example, the portable Osborne Executive computer, one of the expensive toys of 1982, was about one hundred times heavier than today's smartphones, and almost five hundred times in volume. By contrast, it was ten times more expensive, although a hundred times slower than smartphones. Isn't that awesome?

All this technological development brought about a social transformation:

Computer Literacy. Mankind was now a natural data producer and consumer. Moreover, our written culture, which determined the first fundamental transformation of western civilization, was almost completely digitized. Our communication, shopping, monetary transactions, expressing ourselves, looking for a job, doing business, reading books, magazines, articles, listening to music, watching movies, and even the relationships we established with other people were greatly affected by this. By now, almost all of our behavioral beings, including all our privacy, were digitized.

Beyond that, mankind had to consume much more information to produce even more information. At this point, sensors (sensors), which are capable of automatic measurement, came into play; Nowadays, data is being produced by devices much faster and more intensely than human beings, in a new approach called the Internet of Things (IoT). The capture of our civilization by machines producing machines in

apocalyptic sci-fi films is quite a dream. However, computers have already begun to capture our civilization by generating information for us. This explains the fact that after the formation of the Big Data concept, the computer literacy of the human son, as a second prime effect, computers become information literate.

2. WHAT IS BIG DATA?

The emergence of the Big Data concept is triggered by the fundamental structural transformations described above. The concept is thought to have been used for the first time by two research areas, genetic and astronomy, that use data of this intensity (Mayer-Schönberger & amp; Cukier, 2014, 6). The scale mentioned here is not in the usual dimensions; petabye (one thousand times the terabyte capacity of the external drive we use today), exabyte (one million times), zetabyte (one billion times) and even yotabyte (one trillion times) are now in question.

For example, search engine Google processes more than 24 petabytes of data in one day. This amount corresponds to thousands of times the entire collection of the American Library of Congress, one of the world's largest libraries. In 2000, only one quarter of the world's recorded information was digital and the remaining three quarters were non-digital data; By 2007, the proportion of non-digital data was only seven percent, while in 2013 the total amount of recorded data in the world rose to around one thousand two hundred exabytes, while the proportion of non-digital data could not find even two percent (Mayer Schönberger & Cukier, 2014, 7-8). Why did this happen? According to research, the amount of recorded information grows four times faster than the world economy, while the operating speed of computers grows nine times faster. In the fifty years after Gutenberg's invention of the printing press, about eight million books published in Europe are more than all the manuscripts that have been prepared in Europe. Today, the amount of information per person is three hundred and twenty times that of the great library of Alexandria, which has gathered all the information of its time in its collection (Mayer-Schönberger & Cukier, 2014, 9). According to the calculations, more than ninety percent of the data in the world has been produced in the last two years. Moreover, the recorded information produced by all humanity from the beginning of civilization to 2003 is now produced in only two days (İHS Telekom, 2015).

At this point, it is useful to explain the five basic features of the concept of Big Data, also called ”dimensions”. These qualities, also known as the “Five V” model, include the following five features that begin with the letter “v e in English:

- Volume: the volume size of the data;
- Variety: the structural characteristics and character of the data;
- Velocity: The rate at which data is produced and processed;
- Variability: Functional availability of data;
- Veracity: The accuracy and consistency of the data.

At the scales described above, large and dense data masses cannot be processed by conventional data processing means, such as relational database management systems. But beyond that, Big Data paves the way for large-scale analysis that cannot be done on smaller scales. In this way, a series of structures from markets to companies. A number of new insights and value forms that could lead to change have emerged. (Mayer-Schönberger & amp; Cukier, 2014, 6) Big Data, in other words, is an approach based on recognizing and understanding the relationships within and between the information blocks, to the extent that we have not been fully familiar until recently (Mayer-Schönberger & Cukier, 2014, 19).

2.1. Big Data as a New Marketing Tool

Claiming Big Data to be a new marketing walk will be a compulsion. Because you cannot market anything on such analytical technology. However, thanks to the analytical capabilities it provides, Big Data has been structured as a strategic tool in the marketing of the future.

Research firm Gartner predicts that future CMOs will allocate more resources to information technologies than CIOs (Arthur, 2012). But why and how?

The reason and how of the work lies in the interaction of marketing with the IT field for a long time. In particular, the interactions of the Integrated Marketing Communication discipline with Database Marketing and Customer Relationship Management, as well as the Data Warehouses and Business

Intelligence of the Market and Marketing Research fields. With their solutions, the opportunities provided by the technology, creating new capacities for themselves, is almost like the footsteps of today.

The main difference of the conventional Business Intelligence of Big Data and Analytics is that although Business Intelligence has a rather descriptive structure, Big Data analytics have a direct predictive structure.

While Business Intelligence identifies and explains the current situation, Big Data Analytics goes beyond that, looking for relationships and orientations in the existing situation that we don't know, and even predicting situations that do not exist but are highly probable. The value of Bİg Data as a Marketing tool lies in two directions: Pattern Recognition and Predictive Trend Analytics. Before addressing these two issues, which are the core of Big Data Marketing, it is important to understand how to relate this business to marketing discipline.

2.2. A Model for Big Data Marketing

Lisa Arthur (2013), Big Data Marketing, also known as Data Guided Marketing, topla collect, analyze and adapt insights obtained through Big Data to encourage customer engagement, improve the results of marketing activities, and measure internal accountability " (Arthur, 2013).

Arthur brings the Big Data Marketing Model under five steps (Arthur, 2013):

1. Strategy Building: Especially Customer Interaction, Analysis, Data Collection, On Organization and Technology Strategies;
2. Artificial Walls Lifting: Find ways of cooperation and consolidation to capture synergies between business units (Arthur calls it Demolishing Silos)
3. Extraction: To make the data available to be processed with the existing analytical capabilities (Arthur calls it Blotter Extract)
4. Metric Development: From Big Data sources at hand, to marketing identifying indicators (metrics);
5. Process Integration: Ensure strategic alignment between Concept-Campaign-Profit.
6. In this model, it is useful to explain the importance of metrics in particular by taking a brief look at these metrics.

2.3. Big Data Marketing Metrics

Mark Jeffrey (2010), a faculty member at Northwestern University's Kellogg School of Management, proposes the following fifteen metrics for Data Guided Marketing:

1. Brand Awareness (Awareness);
2. Product / Service Trial Drives;
3. Customer Loss;
4. Customer Satisfaction;
5. Marketing Performance;
6. Profit;
7. Net Present Value (NPV);
8. Internal Yield Ratio (IRR);
9. Return on Investment (ROI);
10. Customer Lifetime Value (CLV);
11. Cost-per-Click (CPC);
12. Cost Per Sale (TCR);
13. Return on Investment (ROA);
14. Bounce Rate;
15. Oral to Oral Effect (WOM).

As can be seen from the metrics, these are not very different from the usual marketing metrics. However, it is obvious that none of these metrics can be made without data. Then, in order to explain the essence of the issue, we need to ask the vital question of Big Data Marketing: n What is the distinguishing aspect of Big Data Marketing?

3. CONCLUSION

The Essence of Big Data Marketing: Pattern Recognition and Trend Analysis

Pattern Recognition, a cognitive process at its core, is the motive of understanding and meaning. Through Pattern Recognition, human beings first try to comprehend themselves, their environment, relations and relationships between individuals and events, changes, cognitive and logical inferences, and then to make sense, classify and conceptualize them by referring to meanings. This is actually the basic cognitive algorithm of human beings, that is, the sequence of operations. For example, it recognizes all objects that match the pattern of a writing tool on a paper or similar surface by a pen pattern. Whether you start writing with a pencil, with a ballpoint pen or a fountain pen, it will recognize all similar objects in the pattern as a pen. Furthermore, he will be able to recognize and use the newly-styled us stylus "object, which he has never seen before, for writing on the

screen of a tablet device. Pattern recognition is the main way of using the information that human beings grasp.

Pattern recognition, on the other hand, also concerns the disciplines of informatics and artificial intelligence. This basic cognitive process also forms the basis of the "automatic learning" approach that enables the development of the conceptual and analytical capabilities of computers. Pattern recognition in the field of informatics is carried out by means of a series of processes, ie algorithms, as in human beings. This sequence of processes, also known as the Pattern Recognition Algorithm, is particularly significant in terms of Big Data, given the processing speed and accuracy of information technology. Because this work is too complicated and difficult to be performed by man. Moreover, among the irregular, unrelated, rapidly growing, dense, varied and variable data found in different data sources, but only through pattern recognition, this chaotic structure and order is not meaningful, but becomes meaningful when identified. new information can be discovered.

This is where the importance of Big Data as a marketing tool manifests itself. The models and metrics mentioned above become meaningful only with Mold Recognition algorithms.

Trend Analysis, which is a trend spreading especially from continental Europe in recent years, arises from the idea of making predictive studies for trends of different scales through these pattern recognition algorithms. Martin Linqvist (2010), which he called sp trend hunting sp (trendspotting), primarily developed trend analysis techniques, from small to large, "transient ambitions", "micro-trends", "mini-trends", "macro-trends" Is interested in defining trends that span the scale of "mega-trends" and "global trends.. However, the area of Trend Analysis also has a profound effect on marketing, with predictive results on trends, especially through Big Data sources.

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