Application of Artificial Intelligence (AI) Technologies to Accelerate Market Segmentation

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ABSTRACT

In recent years, rapid advancements have been made in the disciplines of information technology, processing power, data handling systems, robotics, and artificial intelligence. These advancements have been made possible by recent developments in robotics. As a result of its tremendous potential and usefulness, it is currently being utilized in a wide variety of industries, including information technology, the retail sector, space science, the automotive industry, the entertainment industry, medical, transportation, medical, social sciences, and business management, amongst others. This article focuses on the exciting connotation between market segmentation and artificial intelligence (AI), which has emerged due to recent developments in the industry. Even while the propositions are being made, the ways of AI engagement in developing applications are being developed. Digital marketing, a legitimate application of marketing science, has successfully boosted engagement with customers and provided value for businesses. This is performed by utilizing various digital and electronic services. In this article, we will discuss what artificial intelligence (AI) is and how recent AI breakthroughs influence the expansion and development of market segmentation. In addition, this article explores how the activities and functions of sales and marketing are affected by the various AI techniques and methodologies currently available.

Key Words: Artificial Intelligence, Sales and Marketing, Market Segmentation, Machine Learning, Digitalization Trends

INTRODUCTION

The phrase "market segmentation" comes from the marketing field and describes the process of dividing potential customers into groups or segments with similar requirements and comparable reactions to a given marketing action (Autor et al., 2015). Market segmentation allows businesses to target distinct groups of customers, each of whom has a unique way of

evaluating the overall worth of a given product or service due to differences in their individual experiences and perspectives. The field of artificial intelligence (AI) in its modern form is a broad one that uses sophisticated methods to derive insights from enormous volumes of data. Training robots to learn, have a purpose, and find solutions to problems that we face daily is the central tenet of artificial intelligence (AI). AI's development was significantly boosted by the introduction of machine learning in the early 20th century.

Using AI in marketing allows businesses to provide clients with a more digitized and individualized shopping experience (Balakrishnan et al., 1996). This material is customized to meet the customers' requirements, provides improved segmentation, and cultivates relationships with consumers on their terms. It is reasonable to anticipate that the application of AI in sales will become more common as the number of marketers and customers aware of AI's prospects increases (Gutlapalli, 2017a). Because of this, it is beneficial to understand how to make efficient use of it for one's own business.

This rise is attributable to improvements in machine learning methods' hardware and processing power. Even though computing power opens up more possibilities, the industry is still making progress. In the future, AI may contain features that will give machines the ability to learn and think more like humans (Casabayó et al., 2015). Implementing artificial intelligence (AI) at the organizational level can potentially improve the effectiveness and productivity of crucial decision-making. Even though studies have shown various benefits to implementing changes in businesses, some people still resist the idea.

Additionally, it has extra difficulties in the implementation of AI technologies. One contributing problem is that firms must fully grasp where and how to integrate AI into their operations (Bodepudi et al., 2019). The failure of businesses to perform principal component analysis at the business level to successfully implement the business plan for AI adoption is another possibility (He et al., 2020). Therefore, it is essential to consider the fundamental aspects of the situation before settling on a location for integrating technology at the corporate level.

This study aims to understand better the factors that can influence AI adoption at the organizational level by gaining a perception of artificial intelligence (AI) from the employees' perspective. It is an extension of market research that aims to identify specific groups of consumers to adapt products and branding in a way that is appealing to the group. Market segmentation is a term that refers to this extension (Ren et al., 2019). Market segmentation aims to reduce risk by identifying which items have the most significant potential to capture a portion of a particular target market and by deciding which distribution channels are most effective for bringing those products to that market. Because of this, the organization can boost its overall efficiency by concentrating its limited resources on the activities that yield the highest return on investment (ROI).

STATEMENT OF THE PROBLEM

Academic researchers have opted to work for private enterprises rather than stay on staff at universities or research institutes because of the recent uptick in commercial activity and the expansion of private sector companies. The proliferation of artificial intelligence (AI) outside of academic institutions and in technological goods can be attributed to the predictably increased level of AI research competency in the business sector through the application of AI to digital marketing (Mandapuram & Hosen, 2018). Another significant factor is that researchers in the field of artificial intelligence (AI) have access to very little data to use in the development of their models, in contrast to their counterparts in the business world, which

collect and store billions of bytes of data daily (Tchelidze, 2019). This volume of data would be sufficient for business professionals to conduct their research. The term "artificial intelligence" (AI) is proving to be challenging for professionals in the marketing industry to define. When referring to data analysis, intelligent systems, data extraction, or keyword searches, people always use the term "artificial intelligence." Instead of saying "machine learning," "data mining," or "predictive modeling," they always use "artificial intelligence." Computer scientists, on the other hand, are specialists in computers.

The following are the goals of the study:

- To identify the elements that are affecting artificial intelligence in digital marketing;
- To foresee and predict the succeeding potential of artificial intelligence in the future;
- To examine artificial intelligence's impact on the world of marketing.

ARTIFICIAL INTELLIGENCE (AI) ON DIGITAL MARKETING

To better understand the role that artificial intelligence (AI) appears to play in digital marketing strategies, we must first examine the significant subfields that fall under the umbrella of artificial intelligence (AI). After that, we look at each of those industries individually to determine whether they use any digital marketing strategies. This would show how artificial intelligence (AI) affects studies conducted on digital marketing. Several topics relating to artificial intelligence (AI) research have been brought forward for discussion. Among many other applications, artificial neural networks have been used to model the brain, predict time series, and carry out classification procedures. Examples of evolutionary computation include genetic algorithms and genetic programming processes, amongst other things. Vision can be broken down into a few categories, including object identification, picture conceptual understanding, and other image-processing methods. The term "robotics" refers to a field that encompasses a variety of concepts, including intelligent control, autonomous exploratory procedures, etc. Expert systems include things like management information systems and instructional systems, amongst other types of systems. The recognition system comprises voice recognition, the production process, etc. Planning, gameplay methods, and other similar things are all examples of planning, as indicated by machine translation. Data mining, learning via decision trees, and various other forms of machine learning are all examples.

MARKETING SEGMENTATION MEETS AI

Today's marketing strategy frequently uses a paradigm known as segmentation, targeting, and positioning, or STP for short. It reflects the growing popularity of marketing methods that focus on the consumer over marketing strategies that differentiate products. The audience-focused approach in marketing, for example, helps to produce more pertinent materials targeted to commercially relevant sectors of the population. Therefore, STP and marketing personas go hand in hand with one another. The historical limits of CRM and ad-tech systems, on the one hand, and the dependency on human decision-making in the STP process, on the other hand, contributed to the rise in popularity of segmentation as a tactic in marketing strategy. Before the development of data-driven personalization, most systems could only manage a limited number of segments. As a result, our ability to target specific demographics was restricted to our general audience.

A large selection of geographic, demographic, psychographic, and behavioral data may be used to develop rich and meaningful audience segments or marketing personas. These types

of data are all available. Somebody likely told us that data is the new oil, but what does that statement mean? Data scientists can now process enormous volumes of data and extract tiny signals previously concealed due to developments in data technology and machine learning (Mandapuram et al., 2018). This data-enabled strategy helps scale and automate existing use cases and enables new and inventive use cases to be implemented. What kind of information are we talking about here? Data on behavior, such as click streams, event data, and search data from our e-commerce website or apps. Our consumers' distinct regional, demographic, and psychographic characteristics have a nuanced but discernible influence on their behavior and requirements (Pitt et al., 2020). As a result, we can indirectly extract these elements from behavioral data through machine learning.

AI FOR MARKET SEGMENTATION

One of the essential components of a successful marketing effort is accurate demographic and psychographic segmentation. By segmenting or separating our audience into groups, we may target our communications to clients with qualities and requirements comparable to one another (Huang et al., 2007). Because of this personalization, marketing communications will be more likely pertinent to the person reading them. However, when there is a stronger focus on the topic at hand, the response rates are likely to be much higher than they would be for a single campaign that was not personalized (Neeli, 2020).

Businesses have access to a wide variety of market segmentation tactics that they might implement (Mandapuram, 2017). On the other hand, conventionally speaking, these result in huge groups that are not particularly specific but rather smaller and more highly targeted groups. For instance, we might divide our clients into groups according to their age, the region in which they are located, or whether or not they have previously purchased from us. The level of customer segmentation that we can attain is constrained by the level of insight that we have into our clientele and the resources at our disposal to develop unique marketing strategies for each of these subgroups.

THE ADVANTAGES OF AUTOMATIC AI-DRIVEN SEGMENTATION

A number of benefits come with using artificial intelligence to segment our clients as opposed to the more traditional method of manually segmenting them.

- Elimination of human bias (such as the presumption that people who play video games are young guys; AI algorithms look at the data without making any assumptions to form a picture of who our consumers are).
- Discovers hidden patterns in the data that a human marketer might be unable to recognize.
- Regular, automated revision of market segments, taking into account the dynamic nature of the industry
- No limit on the number of segments or their size
- It makes it possible to achieve a higher level of personalization (to illustrate this, consider the highly targeted t-shirt advertisement we may have seen on Facebook). However, because Facebook gathers so much information about its users, it can target specific groups (for example, "mothers who listen to Iron Maiden and were born in August").
- Requires little in the way of upkeep or assistance from humans
- Capable of extensive scaling

AUTOMATIC SEGMENTATION MARKETING CAMPAIGN OPTIMIZATION

AI can help us understand our audience, but segmenting our customers creates problems. We can develop detailed segments (as tiny as one individual) and send laser-targeted marketing messages with more data (Morin, 2011). The endeavor becomes more complicated as we collect more data and speak to more groups. Each marketing asset has various variables with multiple alternatives. For example, the process is automatic after a marketer chooses a few photos or headlines.

Machine learning algorithms can then test different variable combinations for each person. For example, the landing page, email, or ad can be changed based on consumer behavior to suit the following user. Thus, our marketing assets will automatically optimize for each group, no matter how many or complex. Market leaders cover major companies with many customers and lots of data. For example, Salesforce Pardot and Adobe Marketo offer intelligence-driven toolkits.

AI segmentation can be used in smaller marketing campaigns. For instance, we may test AI segmentation in email marketing campaigns and compare it to our current software. AI may be used in content marketing in a more controlled way. For example, newsfeed and Turtl help us segment our audience to offer the right content on the right channel at the right time for maximum impact and ROI.

LEVERAGE AI IN MARKETING

Using AI in marketing allows businesses to provide clients with a more digitized and individualized shopping experience (Florez-Lopez & Ramon-Jeronimo, 2009). This material is customized to meet the customers' requirements, provides improved segmentation, and cultivates relationships with consumers on their terms. It is reasonable to anticipate that the application of AI in sales will become more common as the number of marketers and customers aware of AI's prospects increases (Gutlapalli et al., 2019). Because of this, it is beneficial to understand how to make efficient use of it for our firm.

Seventy percent or more of customers believe that a problem-free transfer of their business between other channels and departments and adjusting the actions performed based on past contacts is exceptionally vital to convince and gain trust in a particular brand. Because artificial intelligence has the potential to enhance these processes significantly and, as a result, the quality of service, most customers (62%) say they are receptive to working with businesses that employ AI.

- The application of AI technology and intelligent segmentation to determine the target group
- Employ AI to build relationships with clients on their terms as you interact with them.
- Make use of AI to deliver material specifically adapted to the requirements of each subset of a target group.

SUPERCHARGING MARKET SEGMENTATION WITH AI

When we combine AI with data analytics, our ability to target customers accurately becomes more dynamic, and we can increase conversions (Gutlapalli, 2017b). We can perform a more in-depth analysis of customer data and generate detailed findings regarding the segments that are being targeted, thanks to the machine learning and deep learning algorithms that power our platform. Additionally, we can automate the creation of customized marketing

campaigns for each group using this information. Compared to analytics-driven marketing efforts of the traditional variety, the outcomes this method will provide will be superior. For instance, specialized AI solutions can minimize human bias when evaluating data and find hidden trends and patterns we had never thought of before. However, these benefits were not previously attainable.

Automated segment updates, which help businesses more appropriately reflect changes in the market, are another beneficial feature for businesses. In addition to these benefits, there is an increased customization level in real-time and indefinite scalability. Before organizations can reap the benefits of market segmentation powered by AI, they must adjust their investments to understand client attitudes better (Yoseph & Heikkilä, 2020). The first step involves employing specialized, purpose-built AI technologies to convert qualitative feedback into quantitative data. This strategy requires businesses to compile data from various sources, including contact center notes, customer relationship management systems, emails, reviews, social media activities, and chatbots, among other things.

Once we have all this data stored in a single warehouse, we will put unique artificial intelligence models and tools to investigate further than fundamental client attitudes, whether favorable or unfavorable. As an illustration, to perform an analysis of the experiences of customers, we need to extract and map keywords linked to the following:

- Actions (such as placing orders, delivering services, etc.)
- The availability of resources (including information, products, talents, .and various systems, among others).
- Content (or circumstances) that affect experiences (such as the time of day).
- Customer role (neutral or make advice).
- Engagement, including encounters with call centers and chatbots.

We can also classify our customers' feelings into several buckets, such as love, joy, wrath, surprise, and others. Examples of cognitive responses include making ideas, making complaints, or giving compliments. Our AI tool will convert All of this information into predictive variables, which can then be used to train AI models that can identify when customers are neutral, displeased, satisfied, or have a complaint.

In addition, we can divide users into groups according to the source of their traffic (for instance, Google Ads, social media, or email campaigns), their search behavior, the amount of time they spend on the platform, the content they view, the type of device they use (mobile or laptop), their likes, and their preferences.

SUPERVISED AND UNSUPERVISED ML-BASED SEGMENTATION

Two distinct approaches to market segmentation are based on machine learning: supervised and unsupervised. In the instance of supervised machine learning, the marketer is the one who initially establishes the rules. Then ML is utilized to sort the data following those guidelines. For instance, we can rank consumers based on the number of products they have ordered, the average profitability of their purchases, or the average cost. When it comes to unsupervised machine learning, an algorithm is used to uncover different "clusters" based on customer similarities, which may not be visible at first glance (Tchelidze, 2019). These similarities could be anything from demographics to purchasing patterns. Because of the typically tiny size of these clusters, marketers can better identify individual client groups, enabling them to provide more personalized solutions and improved targeting. For instance,

unsupervised machine learning can recognize the client cluster that can be targeted most effectively, such as customers who have placed the most orders, spent the most money, and never revisited the site.

THE FUTURE OF SEGMENTATION

Using artificial intelligence (AI), it is feasible to develop a strategy that provides value to the pharmaceutical industry and its many clients. We can think of AI as a component of algorithms that employ a non-linear approach to acquire millions of data points (Big Data) and synthesize them into relevant insights for our marketing. This line of thinking allows us to think of AI as an algorithms component. With the help of AI, we will be able to incorporate a limitless number of client factors into the algorithms in real-time and determine the best way to segment these customers. This strategy involves tying the segmentation to the business results incorporated into the code. When we apply AI to all of our data and integrate everything, we create the following:

- A 360-degree perspective of the customer and real-time data input and updated to understand customer response and adapt marketing. No unintegrated data.
- Effective segmentation considers each customer's needs individually. For example, the "one size fits all" strategy fails. For example, AI can help us connect with people via their chosen channels and messaging.
- Recognize inconsistent patterns of behavior to ignite significant personalization.

Pharma marketers encounter diverse channels and audiences. AI can help us. AI lets brands match value offers to a niche market. How does our customer like marketing? They may prefer sales calls or webinars, depending on their stage in the purchase cycle. AI can segment these to maximize our marketing expenditure by contacting the appropriate people through the right channel with the right messaging.

Through improved customer service, pharma businesses may build trust. From Amazon, we know the value of highly targeted segmentation (Chen & Zimbra, 2010). Eularis uses AI to help pharma businesses outperform Amazon. AI alone is insufficient. We see pharma businesses partnering with well-known AI brands that do not have pharma experience and need to combine pharma strategy with AI for their clients. AI alone cannot solve our problems, but the judicious application of AI can.

Marketers who improve strategies to match customer habits can build stronger customer relationships. That is a competitive edge in the age of personalization. Eularis.com works with our pharma clients to create a potent mix of business strategies with bespoke algorithms that include all our data (CRM, CMS, social media) in one platform and offer the information we need to develop a successful marketing campaign. Marketers aim to cut expenses and boost revenue. AI market segmentation can optimize our marketing channels.

CONCLUSION

Big data, machine learning, and ideal solutions are revolutionizing corporate technology. Businesses change to be more responsive, productive, and competitive. Technology always creates new marketing chances. Artificial intelligence will change how people interact with information, technology, businesses, and services, just as television, the Internet, and mobile phones have changed mass advertising and reach. AI helps advertisers personalize and be relevant. Search engines, Facebook, YouTube, and Google, run billions of people daily, and

digital ad platforms expand communication. Determined and AI-enabled customization will let organizations create real-time customized ads. Artificial Intelligence is used in all sales and marketing activities due to its outstanding potential. Due to its growing use in several fields, sales, and marketing professionals should learn about AI. AI is not a replacement for sales and marketing professionals; it is a tool to make their jobs more accessible and productive. This study aimed to cover AI's usage and effects in sales and marketing, but many topics still needed to be included. For those interested in how AI is transforming sales and marketing, this paper gives a summary. AI is the future. AI does not replace people in commercial processes. AI simplifies many tedious and costly procedures, saving businesses money and time. AI-powered tools provide fast, accurate solutions. It helps companies plan quickly and easily. Digital marketing is ripe for AI. It links businesses to customers. It enhances a company's consumer knowledge. This allows companies to create customer-focused products and services.

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