An Empirical study on Disruptive Artificial Intelligence in Marketing

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Abstract
The artificial intelligence holds a vital role in helping marketers connect with consumers many companies - and the marketing teams that support them - are rapidly adopting intelligent technology solutions to encourage operational efficiency while improving the customer experience. Through these platforms, marketers are able to gain a more nuanced, comprehensive understanding of their target audiences. In this paper it is shown that what exactly Artificial intelligence stands for in marketing & businesses and how AI can be used in several segments of marketing & business, also a view on Artificial intelligence transformations in the marketing field. AI marketing make up today's leading solutions that are helping to bridge the gap between the expansive amounts of customer data being collected and the actionable next steps that can be applied to future campaigns. The insights gathered through this process can then be used to drive conversions while simultaneously easing the workload for marketing teams. By analyzing its current applications, its potential use cases in the near future, how to implement it and its areas for improvement, we can achieve a high-level understanding of AI's long-term implications in marketing.
Keywords: Artificial Intelligence (AI), Machine Learning (ML), Big data Analysis, Deep Learning (DL), Natural Language Processing (NLP)

I.   Introduction

Industry leaders around the world are using artificial intelligence to enhance their business with marketing technology. Whether it's analysing consumer interests and data, guiding sales decisions and social media campaigns or other applications, artificial intelligence is changing the way we understand marketing in many industries. Let's talk about the latest ways that businesses can utilize these powerful tools to achieve their marketing goals. Technology changes every day. A lot can change over several years, especially in trending Artificial intelligence. The same goes for AI in marketing applications. Understanding the basic ideas behind applications of AI in marketing solutions can generate unique ideas that can break new ground in various industries. AI can help automate projects to make businesses more efficient. According to Accenture, productivity of businesses can be improved by 40% when utilizing AI. This not only can save time and money but can enable your company to focus their efforts on providing quality experiences for customers rather than spending too much time moving things from one spreadsheet to another. AI can also help minimize errors in marketing processes. Artificial intelligence can complete specialized tasks with greater efficiency than humans can so long as supervision and guidance is involved. Often in cases where AI fails to provide the right results, human error was involved in setting up the AI program with appropriate data or it was used in a way that was not intended. Because AI can dramatically speed up the process of marketing campaigns, reduce costs, and improve efficiency, artificial intelligence is much more likely to result in an increased return on investment (ROI). In the current business scenario, the cut-throat competition and technological disruptions have changed the way organizations operate. Globally customer-centric approach focused on customer needs plays a pivotal role in organizational growth. Artificial intelligence (AI) is a widely used emerging technology that helps organizations track real-time data to analyse and respond swiftly to customer requirements. AI offers consumer insight on consumer behaviour essential for customer attraction and customer retention. AI incites the customer's next move and redefines the overall experience. AI tools are useful to deduce customer expectations and navigate the future path. Artificial Intelligence find its applications in different context in today's business scenario. Practitioners and academicians believe that Artificial Intelligence is the future of our society. With the advancement of technology, the world has become a web of interconnected networks. The technology implementation led to investment in Artificial Intelligence (AI) for big data analysis to generate market

intelligence. Artificial Intelligence are not limited to only marketing; rather, it is widely used in other sectors such as medical, e-commerce business, education, law, and manufacturing. AI is continuously getting implemented to benefit many different industries. As the organizations move forward towards Industry 4.0, Artificial Intelligence & other emerging technologies are also evolving parallelly. However, the implementation of AI in all sectors has not been possible due to many constraints, but scientists are working on systems that cater to the theory of mind and self-awareness of the artificially intelligent systems. Nowadays the people interact with some form of AI in daily activities. For example, the user enjoys the automatic e-mail filtering feature. In the smartphone, the user may probably fill out a calendar with Siri, Cortana, or Bixby. The user of the new vehicle gets assisted by a while driving. Artificial Intelligence can automate the business process, learn insights from past data, and generate consumer and market insights through the program-based algorithm. Technologies like Machine Learning (ML), Deep Learning, and Natural Language Processing (NLP) train machines to handle big data for the generation of market intelligence.

II. Objective

➢ It is to find how Artificial Intelligence is connecting to the marketing processes.
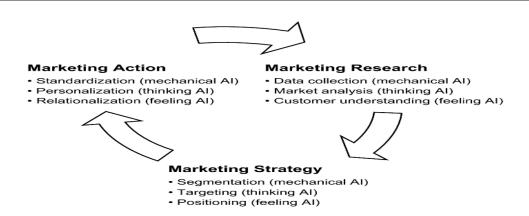➢ The usage and growth of Artificial Intelligence in marketing sector.

What is Artificial Intelligence (AI) Marketing?
AI marketing uses artificial intelligence technologies to make automated decisions based on data collection, data analysis, and additional observations of audience or economic trends that may impact marketing efforts. AI is often used in marketing efforts where speed is essential. AI tools use data and customer profiles to learn how to best communicate with customers, then serve them tailored messages at the right time without intervention from marketing team members, ensuring maximum efficiency. For many of today's marketers, AI is used to augment marketing teams or to perform more tactical tasks that require less human involvement.
AI marketing use cases include:
Data Analysis, Natural Language Processing , Media Buying, Automated Decision Making
Content Generation, Real-Time Personalization, The Waste in Advertising - Stats and Solutions of Misattribution Components of AI in Marketing

Machine Learning
Machine learning is driven by artificial intelligence, and it involves computer algorithms that can analyze information and improve automatically through experience. Devices that leverage machine learning analyze new information in the context of relevant historical data that can inform decisions based on what has or hasn't worked in the past It's the fastest growing form of AI, and is the basis for many of the AI most relevant to marketers.

Supervised Learning
An algorithm that teaches an ML system using a set of training data that is labelled with what the correct output should be. After analyzing the training data, the, ML system generates a predictive function that it uses to estimate what the output would be from a random input.

Unsupervised Learning
This algorithm trains an ML system by giving it a set of training data with no labels. The ML system analyzes the training data and looks for trends, structures, and relationships between each aspect of it, then creates a function it uses to predict what the output would be for random input.

Semi-supervised Learning

A mix of supervised and unsupervised learning, semi-supervised learning typically uses a small set of labeled data for the ML system to cross-reference with a much larger set of unlabeled data. The benefits of this algorithm are that it produces more accurate ML systems and saves time by not requiring all of the data inputs to be labeled.

Reinforcement Learning

This algorithm uses reinforcement signals as a way to reward the ML system for desired behavior or outputs. It operates without a set of training data and instead lets the system experience data on its own where it is left to discover which action and outputs are ideal for optimizing its performance.

Deep Learning

A subcategory of machine learning that allows for an effective way of unsupervised learning through the use of neural networks. These neural networks are modeled after the human brain and utilize a network of interconnected "neurons" or nodes to analyze data in a non-linear way. DL was first created in the mid-1900's but was not thought to be practical at the time. With the rise of computing power, especially the development of graphics processing units (GPU's), deep learning has resurfaced on the forefront of AI innovation.

Big Data and Analytics

The emergence of digital media has brought on an influx of big data, which has provided opportunities for marketers to understand their efforts and accurately attribute value across channels. This has also led to an over saturation of data, as many marketers struggle to determine which data sets are worth collecting.

Training Time and Data Quality

AI tools do not automatically know which actions to take to achieve marketing goals. They require time and training to learn organizational goals, customer preferences, historical trends, understand overall context, and establish expertise. Not only does this require time, it also requires data quality assurances. If the AI tools are not trained with high quality data that is accurate, timely, and representative, the tool will make less than optimal decisions that do not reflect consumer desires, thereby reducing the value of the tool.

AI Platform Solutions & Challenges for AI Marketing

Effective AI-powered solutions provide marketers with a central platform for managing the expansive amounts of data being collected. These platforms have the ability to derive insightful marketing intelligence into your target audience so you can make data-driven decisions about how to best reach them. For example, frameworks such as Bayesian Learning and Forgetting can help marketers gain a clearer understanding of how receptive a customer is to a specific marketing effort. Modern marketing relies on an in-depth understanding of customer needs and preferences, and then the ability to act on that knowledge quickly and effectively. The ability to make real-time, data-driven decisions has brought AI to the forefront for marketing stakeholders. However, marketing teams must be discerning when deciding how to best integrate AI into their campaigns and operations. The development and use of AI tools are still in early stages. Therefore, there are a few challenges to be aware of when implementing AI in marketing.

III. Privacy

Consumers and regulating bodies alike are cracking down on how organizations use their data. Marketing teams need to ensure they are using consumer data ethically and in compliance with standards such as GDPR, or risk heavy penalties and reputation damage. This is a challenge where AI is concerned. Unless the tools are specifically programmed to observe specific legal guidelines, they may overstep in what is considered acceptable in terms of using consumer data for personalization.

Getting Buy-In:

It can be difficult for marketing teams to demonstrate the value of AI investments to business stakeholders. While Key Performance Indicators such as Return on Investment and efficiency are easily quantifiable, showing how AI has improved customer experience or brand reputation is less obvious. With this in mind, marketing teams need to ensure they have the measurement abilities to attribute these qualitative gains to AI investments.

Adapting to a Changing Marketing Landscape:

AI is a newer tool in marketing, definitive best practices have not been established to guide marketing teams' initial deployments. With the emergence of AI comes a disruption in the day-to-day marketing operations. Marketers must evaluate which jobs will be replaced and which jobs will be created? One study suggested that nearly 6 out of every 10 current marketing specialist and analyst jobs will be replaced with marketing technology.

Use of Artificial Intelligence in Marketing

It's important to begin with a thorough plan when leveraging AI in marketing campaigns and operations. This will ensure marketing teams minimize costly challenges and achieve the most value from their AI investment in the least amount of time. Many technologies may do repeated work, but they can't think independently. They lack to think outside their code. On the contrary, Machine learning is a subset of AI that aims to give machines the ability to learn a task without pre-existing code. Here machines are fed with some of the problems and examples through which machines learn for certain tasks. As they go through these problems & examples, machines learn and adapt their strategy to independently execute the activities. For example, an image-recognition machine may be given millions of pictures to analyze. After going through endless permutations, the machine acquires the ability to recognize patterns, shapes, faces, and more.

AI in Strategy and Planning

Artificial intelligence can support marketers in strategy and planning marketing activities by helping in segmentation, targeting, and positioning (STP). Besides STP, AI can help marketers in visioning strategic orientation of firm. Text mining and machine learning algorithms can be applied in sectors like banking and finance, art marketing, retail and tourism for identification of profitable customer segments. A combination of data optimization techniques, machine learning and causal forests can narrow down the targeted customers also.

AI in product management:

Artificial intelligence-based marketing analytics tool can gauge the suitability of product design to the customer needs and resultant customer satisfaction. Topic modeling adds to the system capabilities to service innovation and designs. Preference weight assigned to product attributes during product search help the marketers to understand product recommender system and align marketing strategies for meaningful product management. Deep learning can personalize the point of interest recommendation and helps to explore new places. Artificial intelligence offers capabilities to customize offerings to suit to the customer needs.

AI in pricing management:

Pricing involves factoring of multiple aspects in finalization of price and it is a calculation intensive job. Real time price variation based on fluctuating demand adds to the complexity of pricing task. Artificial intelligence based multiarmed bandit algorithm can dynamically adjust price in real time scenario. In the frequently changing pricing scenario like e-commerce portal, Bayesian inference in machine learning algorithm can quickly adjust the price points to match the competitor's price, best response pricing algorithms encapsulate customer choices, competitor strategies and supply network to optimize dynamic pricing.

AI in place management:

Product access and product availability are essential component of marketing mix for heightened customer satisfaction. Product distribution relies on networked relationship, logistics, inventory management, warehousing and transportation problems, which is largely mechanical and repetitive in nature. Artificial intelligence is the perfect solution in the case of place management by offering robots for packaging, drones for delivery, IoT for order tracking and order refilling. Standardization and mechanization of distribution process adds convenience to both suppliers and customers. Besides utility in distribution management, AI also offers customer engagement opportunities in service context. Service robots programmed with emotional AI codes are handy in surface acting. Embodied robots greet and engage with customers, but human elements need to complement the service environment for customer delight. Automation of service process with AI offers additional opportunity for performance and productivity improvement.

AI in promotion management:

Promotion management entail media planning, media scheduling, advertising campaign management, search engine optimization etc. Promotion tactics are transforming from physical to physical. Digital marketing and social media campaigns made an inroad due to digital transformation across the globe. In the changed technological world, customer decide the content, place, and timing. AI offers personalization and customization of message as per the customer profile and likings. Content analytics can optimize value and message effectiveness. Customer likings and disliking can be tracked in real time with emotive AI algorithms. Ethnography on social media content offers new avenues for marketers to align their marketing strategies as per the customer likings.

Before implementing an AI tool for marketing campaigns, there are a few key factors to consider:

Establish Goals:

As with any marketing program, it is important that clear goals and marketing analytics are established from the outset. Start by identifying areas within campaigns or operations that AI could stand to improve, such as segmentation. Then establish clear KPIs that will help illuminate how successful the AI augmented campaign has been – this is especially important for qualitative goals such as "improve customer experience."

Data Privacy Standards:

At the outset of your AI program, be sure that your AI platform will not cross the line of acceptable data use in the name of personalization. Be sure privacy standards are established and programmed into platforms as needed to maintain compliance and consumer trust.

Data Quantity and Sources:

In order to get started with AI marketing, marketers need to have a vast amount of data at their disposal. This is what will train the AI tool in customer preferences, external trends, and other factors that will impact the success of AI-enabled campaigns. This data can be taken from the organization's own CRM, marketing campaigns, and website data. Additionally, marketers may supplement this with second and third-party data. This can include location data, weather data, and other external factors that may contribute to a purchasing decision.

Acquire Data Science Talent:

Many marketing teams lack employees with the necessary data science and AI expertise, making it difficult to work with vast amounts of data and deliver insights. To get programs off the ground, organizations should work with third party organizations that can assist in the collection and analysis of data to train AI programs and facilitate ongoing maintenance.

Maintain Data Quality:

As machine learning programs consume more data, the program will learn how to make accurate, effective decisions. However, if the data is not standardized and free of errors, the insights will not be useful and can actually cause AI programs to make decisions that hinder marketing programs. Prior to implementing AI marketing, marketing teams must coordinate with data management teams and other lines of business to establish processes for data cleansing and data maintenance.

When doing so, consider the seven essential data dimensions:

Timeliness , Completeness, Consistency, Relevance, Transparency, Accuracy, Representativeness

Selecting an AI Platform:

Selecting the right platform or platforms is a crucial step in getting an AI marketing program off the ground. Marketers should be discerning in identifying the gaps that the platform is trying to fill and select solutions based on capabilities. This will revolve around the goal marketers are trying to achieve – for example, speed and productivity goals will require different functionality than tools used to improve overall customer satisfaction with AI. One thing to keep in mind when selecting a tool is the level of visibility you will need regarding why an AI platform made a certain decision. Depending on the algorithm in use, marketing teams may get a clear report on why a certain decision was made and which data influenced the decision, while algorithms working on a more advanced level with deep learning may not be able to give as definitive reasoning.

Personalized customer experience | Better content & offers | Improved performance metrics | Increased productivity | Higher revenue

4 Practical Ways to Use AI in Marketing

Benefits of Leveraging Artificial Intelligence in Marketing:

There is a myriad of use cases for AI in marketing efforts, and each of these use cases yields different benefits such as risk reduction, increased speed, greater customer satisfaction, increased revenue, and more. Benefits may be quantifiable (number of sales) or not quantifiable (user satisfaction). There are a few overarching benefits that can be applied across AI use cases:

Increased Campaign ROI:

If leveraged correctly, marketers can use AI to transform their entire marketing program by extracting the most valuable insights from their datasets and acting on them in real time. AI platforms can make fast decisions on how to best allocate funds across media channels or analyze the most effective ad placements to more consistently engage customers, getting the most value out of campaigns.

Better Customer Relationships & Real-Time Personalization:

AI can help you deliver personalized messages to customers at appropriate points in the consumer lifecycle. AI can also help marketers identify at risk customers and target them with information that will get them to re-engage with the brand.

Enhanced Marketing Measurement:

Many organizations have trouble keeping pace with all of the data digital campaigns produce, making it difficult to tie success back to specific campaigns. Dashboards that leverage AI allow for a more comprehensive view into what is working so that it can be replicated across channels and budgets allocated accordingly.

Make Decisions Faster:

AI is able to conduct tactical data analysis faster than its human counterparts and use machine learning to come to fast conclusions based on campaign and customer context. This gives team members time to focus on strategic initiatives that can then inform AI-enabled campaigns. With AI, marketers no longer have to wait until the end of a campaign to make decisions, but can use real-time analytics to make better media choices.

7 Examples of Artificial Intelligence in Marketing:

AI is being used in marketing initiatives in a multitude of use cases, across a broad array of industries including financial services, government, entertainment, healthcare, retail, and more. Each use case offers different results, from improvements to campaign performance, to enhanced customer experience, or greater efficiency in marketing operations.

There are numerous ways businesses can take advantage of AI to create a more comprehensive marketing plan. Consider the following:

1. Bidding on Programmatic Media Buys

A problem that marketing teams often encounter is deciding where to place advertisements and messaging. Marketing teams can create informed plans based on user preferences, but these teams are not flexible or agile enough to alter the plan in real time based on the latest consumer information. AI is being used by marketers to mitigate this challenge through programmatic advertising. Programmatic platforms leverage machine learning to bid on ad space relevant to target audiences in real time. The bid is informed by data such as interests, location, purchase history, buyer intent, and more. This enables marketing teams to target the right channels at the correct time, for a competitive price. Programmatic buying exemplifies how machine learning can increase marketing flexibility to meet customers as their needs and interests evolve.

2. Select the Right Message

Across channels, different consumers respond to different messages – some may resonate with an emotional appeal, some humor, others logic. Machine learning and AI can track which messaging consumers have responded to and create a more complete user profile. From there, marketing teams can serve more customized messages to users based on their preferences. For example, Netflix uses machine learning to understand the genres a certain user is interested in. It then customizes the artwork that user sees to match up with these interests. On the Netflix Tech Blog, they explain how they use algorithms to determine which artwork will most entice a viewer to watch a certain title, When AI and machine learning are used, these platforms can gather valuable data on customers that allow marketing teams to increase conversion rates and improve the customer's experience. Marketing teams can then analyze all of this data to create a more nuanced view of the customer, even considering additional factors such as if a user would have watched a title regardless of the image, and how that plays into future messaging.

3. Granular Personalization

A highly granular level of personalization is expected by today's consumers. Marketing messages should be informed by a user's interests, purchase history, location, past brand interactions, and a host of other data points. AI helps marketing teams go beyond standard demographic data to learn about consumer preferences on a granular, individual level. This helps brands create curated experiences based on a customer's unique tastes. For example, Spotify uses AI to create customized playlists based on what a customer has listened to in the past, current hits across genres, and which music is being talked about. It uses these datasets to create customized playlists for users and to create genre playlists based on artists that appear in conversation, in articles, etc. This has helped Spotify to become a top streaming service and emphasize customer experience through personalization. Another trend based on AI-enabled personalization is atomic content. Here, AI learns customer preferences and pulls pieces from a library of content to create a customized email or offer for a client featuring relevant images, videos, or articles.

4. Chatbots and Conversational Experiences

With the development of natural language processing through AI, chatbots are now being used to augment customer service agents. Customers with more basic queries can refer to chatbots which will give immediate, accurate answers. They will be able to leverage past questions and historical data to deliver personalized results. This gives time back to customer service agents to work on complicated requests that need more human involvement.

5. Predictive Marketing Analytics

With so much data coming, marketing teams are having a hard time actually deriving insights from it. AI allows marketing teams to make the most of this data using predictive analytics, which leverages an assortment of machine learning, algorithms, models, and datasets to predict future behavior. This can help marketing teams understand the types of products a consumer will be looking for and when – allowing them to position campaigns more accurately. For example: Amazon uses predictive analytics to suggest products to consumers based on past purchases and behaviors, increasing conversions and customer satisfaction. AI can also be used to help marketing teams more accurately track attribution, allowing teams to see which campaigns contributed most to ROI.

6. Marketing Operations

Another key use case for AI in marketing is to increase efficiency across various processes. AI can help to automate tactical processes such as the sorting of marketing data, answering common customer questions, and conducting security authorizations. This allows marketing teams more time to work on strategic and analytical work.

7. Dynamic Pricing

AI can help make brands more competitive by enabling dynamic pricing. AI platforms can suggest optimal prices for products in real time by evaluating huge quantities of historical and competitive data. This strategy has been especially effective in retail. It allows brands to adjust prices to reflect demand for certain products, boost sales, and edge out the competition.

AI is Growing

While AI is still largely new to the marketing space, it promises to only grow in popularity. There are a few AI trends marketers will see over the next few years and should begin to adapt. Gartner (Information Technology Research & Consultancy Company) has predicted that by 2022, AI will replace about 33% of data analysts in marketing. Tech giants realize the benefits and potential for AI. In 2016, they were already spending on average between $20-$30 billion. 90 percent of this budget was focused on deployment and research. Additionally, in 2020 Gartner predicted that more than 40% of data science tasks will be automated Teams Will Scale Through AI Marketing teams will be put under increased pressure to demonstrate marketing value and ROI to executive stakeholders. Teams will leverage AI solutions to drive these targets and better allocate funds towards successful campaigns and provide the marketing metrics that demonstrate the value of campaigns. Marketing leaders who don't leverage ai will be replaced by those who do, those responsible for marketing insights will no longer be as competitive in this changing marketing landscape. Only 13 percent do not see a use for it in the next three years

➢ In 2022, companies are expected to have an average of 35 AI projects in place.
➢ 20% of businesses say automating tasks such as invoicing and contract validation is the second most crucial use of AI.
➢ 80% of retail executives expect their retail companies to adopt AI-powered intelligent automation by 2027.
➢ Only 7% of companies don't use AI but are looking into it.
➢ 86% of CEOs say AI is mainstream technology in their office in 2021.
➢ 48% of companies use data analysis, machine learning, or AI tools to address data quality issues.
➢ In 2020, 39% of large organizations planned to invest in AI technology.
➢ 75% of executives fear going out of business within five years if they don't scale AI.
➢ Marketing and sales departments prioritize AI technology and machine learning for their success more than any other department (40%).

IV.   Conclusion

The era of AI Marketing is rapidly approaching and carries with it far-reaching implications. As AI quickly becomes more sophisticated and widely adopted in marketing, the ability for marketers to effectively implement and manage AI solutions will become an ever more necessary skill set. Likewise, an individual's understanding of their role in creating and   distributing value in an AI-powered workplace is not only pivotal to their success, but to the success of their company The AI Marketing Era entails fundamental changes to the manner in which marketers interact with customers, the tactics, and tools they use to achieve their goals, the type of skills that are valued in the workplace, and the nature of their day-to-day responsibilities. AI is often used in marketing efforts where speed is essential. AI tools use data and customer profiles to learn how to best communicate with customers, then serve them tailored messages at the right time without intervention from marketing team members, ensuring maximum efficiency. Akin to the magnitude of change brought forth by the advent of computers, artificial intelligence carries the potential to change the nature of marketing drastically. In 2022, companies are expected to have an average of 35 AI projects in place. 51% of eCommerce players have implemented automation technologies across sales, marketing, and customer service teams to ensure a seamless

user experience for customers. This shows that Artificial intelligence is now more accessible for businesses, making it a valuable tool. In the following years, marketers can expect greater AI impact, through more intelligent searches, smarter ads, refined content delivery, relying on bots, continued learning, preventing fraud and data breaches, sentiment analysis, image and voice recognition, sales forecast, language recognition, predictive customer service, customer segmentation, etc. This paper attempts to discover the future relationship between marketers and artificial intelligence machines.

This paper outlines a framework to understand how AI will impact the future of marketing, specifically to outline how AI may influence marketing strategies and customer behaviors. We build on prior work, as well as build from extensive interactions. First, a multidimensional framework for the evolution of AI, noting the importance of dimensions pertaining to intelligence levels, task types. the short to medium term impacts of AI may be more limited than the popular press would suggest. AI will be more effective if it is deployed in ways that augment (rather than replace) human managers.

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