Artificial Intelligence In Marketing

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Abstract

Artificial intelligence (AI) is a burgeoning technology, industry, and field of study. While interest levels regarding its applications in marketing have not yet translated into widespread adoption, AI holds tremendous potential for vastly altering how marketing is done. As such, AI in marketing is a crucial topic to research. 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.

AI offers an improvement to current marketing tactics, as well as entirely new ways of creating and distributing value to customers. For example, programmatic advertising and social media marketing can allow for a more comprehensive view of customer behavior, predictive analytics, and deeper insights through integration with AI. New marketing tools like biometrics, voice, and conversational user interfaces offer novel ways to add value for brands and consumers alike. These innovations all carry similar characteristics of hyper-personalization, efficient spending, scalable experiences, and deep insights.

There are important issues that need to be addressed before AI is extensively implemented, including the potential for it to be used maliciously, its effects on job displacement, and the technology itself. The recent progression of AI in marketing is indicative that it will be adopted by a majority of companies soon. The long-term implications of vast implementation are crucial to consider, as an AI-powered industry entails fundamental changes to the skill-sets required to thrive, the way marketers and brands work, and consumer expectations.

Introduction

Artificial Intelligence (AI) is a category of technologies and field of study that has been around for decades yet has only recently been feasible to implement. Despite its relative infancy in the market, applications of AI already boast impressive efficacy across industries, particularly in marketing. Recent advancements in AI technology and growing numbers of use cases demonstrating its effectiveness have garnered excitement amongst marketers. This excitement has not fully translated into a universal understanding of how the technology works, its practical implementation, and the long-term implications it carries.

As AI quickly becomes more sophisticated and widely adopted in marketing, the ability for marketers to effectively implement and manage it will become an ever more important skill. Likewise, individuals' understanding of their role in creating and distributing value in an AI-powered workplace is pivotal to the success of their career, the companies they work for, and the consumers with whom they interact. It thus stands that AI may soon insinuate sweeping change to the nature of marketing itself.

The "AI Marketing Era," as it may appropriately be labeled, entails fundamental changes to the manner in which marketers interact with customers, the tactics, and tools they use to achieve their goals, the skills they regard highly in the workplace, and the nature of their day-to-day responsibilities. 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. It is for this reason that the topic of artificial intelligence in marketing requires in-depth research and analysis to prepare for changes to come.

The increasingly sophisticated advancements in AI technology paired with a disconnect between heightened levels of excitement among marketers and high-level implementation makes the topic of AI Marketing evermore crucial to research. As such, my thesis holds that despite issues at macro and micro levels in need of being addressed before its widespread adoption, artificial intelligence offers net-positive benefits to marketers, consumers, and society as a whole through its ability to improve the creation, optimization, and distribution of value.

Scope and Methodology

This paper analyzes the impact of artificial intelligence on marketing at micro and macro levels. Given the wide-ranging topic of AI and its many different applications, I have limited the scope of this paper to only its impact on marketing. The topic of AI in marketing itself may be vast enough to justify narrowing the scope of research down further into specific applications and use cases. However, my intentions for this paper were to address the issue in a manner that provides a natural entry point for marketers to begin learning about AI in their field, while providing enough detail for each application and use case to offer novel insights.

AI in marketing is complex and quickly evolving. As such, my research faces limitations of the potential for promptly becoming outdated. Further, the vast array of potential applications of AI in marketing has limited me to only being able to focus on the topics I have found most relevant to the daily practice of marketers. AI applied to search (e.g., Google ranking algorithms, personalization of search results, etc.) is one topic that was intentionally left out due to time constraints in being able to research, synthesize, and provide a useful perspective of the subject. These limitations mean this paper is by no means an exhaustive analysis of AI in marketing.

The excitement surrounding AI in marketing presents a limitation relating to my research methodology. Advanced AI is still a new technology in marketing. As such, there is a lack of extensive peer-reviewed research on the topic. Many sources used to obtain data on issues such as perceptions and reporting of AI (e.g., its effectiveness in various scenarios, consumer perceptions it, etc.) may not have been collected in an entirely accurate manner. Similarly, biases stemming from the heightened enthusiasm about AI and opinions of it being a fix-all solution for all marketing problems may have potentially skewed research findings.

Nonetheless, there is still a great deal of highly credible research sources available from recent years (2017 and 2018). A primary goal of my research methodology was to piece together an objective, nuanced understanding of AI in marketing. It may be easy to categorize AI marketing as unanimously beneficial based on the many case studies and white papers showcasing its positive effects. However, doing so limits the ability to see other potential long-term effects that may come as a result, and increases the likelihood of overspending on premature AI implementation and rushing into widespread AI adoption without a proactive plan to minimize its adverse effects.

I have found it helpful to view the topic of AI in marketing with the understandings that 1.) AI is not a fix-all for every marketing problem, 2.) advanced iterations and increased adoption of AI can carry adverse implications and unintended consequences, and 3.) despite extreme levels of hype, the impact of AI in marketing is proving to be highly significant.

My research methods for attempting to achieve a holistic perspective on AI Marketing was multifaceted but primarily focused on secondary research sources. Peer reviewed papers, large-scale studies from research firms, and reports from credible institutions provide empirical

data. Presentations and academic lectures regarding AI offer a variety of different perspectives and a glimpse into current events at the forefront of the industry. Textbook literature and journal publishings provide an understanding of the technical aspects of the technology itself. Other research sources such as white papers, case studies, and blog posts from companies in the AI industry offer case-by-case data regarding the efficacy of specific AI Marketing applications and varying viewpoints from marketers who already have experience applying AI in marketing.

In the sections that follow, I will start with an overview of AI: what it is, how it works, and the need-to-know terminology for marketers. Next, an overview of the current state of AI as used in marketing today is presented: its current use cases, what is working, and what isn't working. Then, I will cover areas in need of improvement and pressing issues of the near future. Finally, I will close with a handful of frameworks and insights for marketers and companies to best prepare for and begin implementation of AI.

Backstory

The idea of humanmade beings with an artificially created intelligence has struck a chord in the human imagination since Hephaestus's depiction of artificial beings in Greek mythology. Evidently, the idea of humanmade intelligence is innately fascinating to the human mind. In a way, this makes sense given we are all members of a species whose evolutionary success relied heavily on our ability to use tools intelligently to survive. At some level, it makes sense for us to desire finding a way to create advanced intelligence as a tool to advance our species. While this idea falls into alignment with general artificial intelligence (GAI) as I will soon describe, the application of AI applied to specific topics (i.e., narrow AI) accomplishes a similar idea. Much

like how the industrial revolution represented a historic moment for human productivity, indications of an “AI Revolution” seem to be a natural progression for humanity.

Dartmouth math professor John McCarthy originally coined the term "artificial intelligence" in 1955. In subsequent years, a wide variety of early promises and claims about AI had been made overstating the technology’s capabilities at the time. One example comes from economist Herbert Simon, who predicted AI would be able to beat a human at the game of chess within ten years from 1957. This seemingly simple task took an additional 40 years past Simon’s claim to accomplish. Years of unfulfilled promises had put the development of AI on hold as people treated it as a fringe technology.

These early claims stemmed from a lack of advanced computing technology. AI was practically useless and regarded as a fringe technology for decades since the advanced implementation of it was nearly impossible. However, recent advancements in computing technology have allowed AI to resurface into the burgeoning industry it is today. Specifically, rapid innovation in graphics processing units (GPUs), lowered costs for computing technologies, increased access to massive amounts of data, and a heightened level of interest amongst companies and investors across many industries have led to galvanization of AI’s potential.

However, the current state of AI is a separate subject in comparison to the GAI depicted in science fiction movies. The idea of having an artificially created intelligent being or software that can interact with the world akin to how humans do is far from reality as of 2018. AI in marketing today is unanimously narrow AI. As such, the form of AI covered in this paper is this narrow AI that often operates behind the scenes. Narrow AI implies applications that are incredibly efficient and effective at performing tasks within one domain of knowledge. There are

plenty of examples of this in our daily lives, from voice recognition capabilities behind Siri to recommended products on Amazon and many more.

Examples of narrow AI are now integrated so seamlessly into our lives that many fail to register the presence of them. This misconception is evident in the fact only 29% of respondents of a recent study on consumer awareness of AI reported having used the technology before (PR Newswire, 2017). With many examples of AI operating in the background of the majority of modern technology (e.g., smartphones, computers, TVs, etc.), there is apparently a disconnect between what people think AI is and how it is applied in day-to-day life.

Despite this disconnect, an astonishing 98% of marketing leaders say they expect to see benefits from using AI (Demandbase, 2016). Marketers' interest in AI is pronounced, which makes the task of achieving a well-rounded understanding of what the technology has to offer evermore critical before marketers are forced to play catch-up. Only 28% out of the 98 % mentioned above of excited marketing leaders feel confident using AI. Perhaps even worse, only 10% of them are currently using the technology to its full extent. Work must be done to close the gap between hype and implementation of AI to actualize its benefits day-to-day and prepare for a vastly changed marketing landscape.

Consumer Perceptions

Currently, consumers have positive-leaning, yet mixed emotions about AI. The majority of general consumers think that AI will make society better. According to a global independent survey conducted by Arm and Northstar in 2017, 61% of consumers believe that AI will make society better or much better, while 22% believe it will make society worse or much worse indicating positive-leaning perceptions. However, AI is a polarizing topic. Of that same set of

global respondents, consumers reported feeling optimistic (33%), excited (30%) and enthusiastic (20%), while slightly less reported feeling concerned (27%), unsure (25%), and confused (9%). Despite responding positively about the impact of AI in society, people hold a somewhat evenly mixed set of positive and negative emotions.

Other studies on consumer perceptions of AI reflect this same mixed, yet positive-leaning attitude. PwC (2017) reported that 63% of people agree AI will help solve complex problems that plague modern societies, and 59% of people agree AI will help people live more fulfilling lives. Further, 46% of people believe AI will harm people by taking away jobs, and 23% think AI will have serious, negative implications. Feelings of AI are polarized, but slightly more positive than negative.

Moreover, 63% of consumers globally don't realize they're already using AI technologies (Hubspot, 2017). This lack of awareness of AI offers marketers an opportunity to stabilize consumer perceptions of AI away from its current polarized nature and towards positive feelings of trust and excitement. AI's status as an immature technology allows the companies who are utilizing to proactively position the technology in a positive light, with the goal of helping consumers understand the benefits of the technology transparently.

Additionally, seeing that 98% of marketers reported feeling optimistic of AI (Demandbase, 2016) versus just 33% of global consumers feeling optimistic, firms implementing AI should be aware of how their customer base may perceive it to structure marketing efforts accordingly. For B2C companies, taking a more cautious positioning aimed at building trust and educating consumers about AI technology may be the best route. For B2B companies in the

marketing industry, positioning your firm as an innovator and showing real-world applications of AI can work to build excitement and positive sentiment for your company.

Defining Artificial Intelligence

Put simply by Demis Hassabis, founder, and CEO of Google's AI company DeepMind, artificial intelligence is the "science of making machines smart" (Ahmed, 2015). As broad of a definition as this may be, it is well fitting because AI is an umbrella term for a wide variety of manifestations. Within the umbrella of AI includes subcategories, such as machine learning and deep learning, that produce real-world applications of AI, such as voice recognition, image recognition, virtual assistants, and search suggestions. As previously mentioned, these are all forms of narrow AI. The idea of general artificial intelligence or even super-artificial intelligence (SAI) are ideas that are far from becoming available for marketers to utilize. For all intensive purposes, the term "AI" used in this paper is synonymous with narrow AI. To facilitate an intelligent discussion about the subject of AI, we can study definitions of some of the essential terms that go into the technology.

Artificial Intelligence (AI)

Artificial Intelligence is defined as computerized systems that intake data to perform tasks of intelligent beings in a way that maximizes its chances of success. There are a wide variety of different kinds of AI, so the term could be considered "a portfolio of technologies" as described by Guruduth Banavar, overseer of IBM's research on AI (Kaput, 2016). These AI technologies serve different purposes and are being developed at different rates, but they are all focused on mimicking human intelligence in computers to make their operations "smart." AI is divided into two main categories:

Artificial General Intelligence (AGI)

Also known as Strong AI, AGI can theoretically perform any tasks that an intelligent being could perform. This category of AI is commonly depicted in science fiction and can be thought of as AI that can perform a wide variety of tasks and act like humans. Given the complexity of human nature and how little we truly know about how our minds work, there have not been any successful attempts at creating true AGI. For all intensive purposes, AGI will not be discussed much for the remainder of this paper given its current state of development does not hold any practical implications for marketers.

Narrow AI

Also known as Weak AI, Narrow AI is effective at performing specific tasks. It focuses on becoming advanced at one domain of cognitive abilities, such as image recognition, predictive analysis, driving cars, and segmenting groups of customers. This is the most common form of AI and is seen in our day-to-day lives as spam mail bots and recommendation systems on many websites, such as Amazon's recommended product suggestions and Netflix's personalized movie/TV show recommendations.

Machine Learning (ML)

Machine learning is a subset of AI that uses computer programs to learn and improve upon themselves and process large amounts of data. Machine learning is the aspect of AI that allows for it to learn without being explicitly coded to do so. It's the fastest growing form of AI and is the basis for many of the AI most relevant to marketers. In most cases, a set of training data is used to teach a the ML system how to identify the correct output for a random given

input, then continually improves upon itself over time as more data points are processed. There are many different algorithms used to teach ML systems. Below are the three most common:

Supervised Learning An algorithm that teaches an ML system using a set of training data that is labeled 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. It can then modify this predictive function by comparing the output to the correct result. As Andrew Ng states in his 2017 Stanford MSx Future Forum presentation, supervised learning is the main driving force behind what lets AI provide hundreds of billions of dollars in economic value, meaning it is currently the most widely used (Ng, 2017).

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. Unsupervised learning is the “dark matter” of AI, as put by Facebook’s Director of AI Research Yann LeCun. Unsupervised learning is the form of ML that gives AI “common sense," it is what would allow for General AI, and is how humans interact with the world (LeCun, 2016).

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 actions and outputs are ideal for optimizing its performance.

Deep Learning (DL)

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. The necessity of having a way to analyze the nearly unfathomable amounts of data generated through technology every day has made the superior performance of deep learning one of the most popular applications of AI.

Artificial Neural Networks A hierarchical system used by deep learning to process large amounts of data in a non-linear way. Artificial Neural Networks (also known as neural networks) are modeled similarly to the human brain. They have layers of interconnected nodes that data passes through, and each of these nodes learns and stores memory. The memory of these nodes can be either fixed (meaning the importance weight of a specific node would not change over time) or adaptive (meaning the weight of a particular node can change over time.)

Neural networks are built with a specific purpose, and there is currently no form of "general" neural networks. They learn by being fed a significant amount of training data. Then, are given a small amount of validation data to prevent overfitting (a problem that occurs when

the algorithm only produces accurate results using training set it was taught with but faces issues when used in the real world). Finally, a set of testing data is used to ensure the network is accurately trained. Neural Networks are designed in two different ways:

Feedforward In a feedforward network, input travels only in one direction. These are typically used for pattern recognition. A convolutional neural network (CNN) is a commonly used feedforward network for image recognition.

Feedback Also called a recurrent neural network (RNN), these allow for more complexity compared to CNN's, as data can travel forward and backward and the network is always changing.

Long Short-Term Memory (LSTM) LSTM networks are unique forms of RNNs that are capable of retaining data over long periods of time. In doing this, LSTM networks can bypass issues faced by traditional neural networks, letting them operate more efficiently for some tasks.

Natural Language Processing (NLP)

A subfield of AI focused on the understanding of human language. NLP often uses machine learning algorithms and allows voice applications like Siri and Alexa the ability to interpret human voice into data. It is this category of AI that will enable computers to understand the hierarchical structure of language and how components of a sentence relate to each other (Jurafsky & Martin, 2014). NLP lets computers understand the complexities of human language that influence a sentence's meaning, which is a tricky problem in computer science. The advent of NLP has led to a wide range of practical applications, such as chatbots, converting speech to text, correcting grammar, the ability to identify the sentiment of a string of text, and much more (Kiser, 2016).

Speech Recognition Also known as voice recognition, speech recognition allows computers to decode the content of human voice input. This is a technology commonly seen in applications such as call routing or the ability to ask Siri a question on a smartphone.

Natural Language Understanding (NLU)

NLU is a subset of NLP that gives computers the ability to understand the meaning and context of text or speech inputs. Whereas NLP focuses on turning human language inputs into data that machines can work with, NLU offers more profound comprehension of what the inputs mean. This ability is a crucial factor in creating technologies that allow users to interact directly with computers in a meaningful way.

Natural Language Generation (NLG) The ability to generate human language output from data inputs. NLG allows computers to communicate data in a way that humans can understand by creating language outputs, as the name describes. As Gartner Research illustrates, "whereas NLP is focused on deriving analytic insights from textual data, NLG is used to synthesize textual content by combining analytic output with contextualized narratives" (Gartner, 2016). NLG is the side of chatbots that allows them to respond to messages naturally, or the ability for Siri to respond to you coherently.

Signal Processing

Signal processing is a technology that "models and analyzes data representations of physical events" (IEEE Signal Processing Society, 2017). This technology operates at the foundation of most digital applications used throughout our daily lives. From smartphones and computers to cameras and televisions, most digital technologies utilize signal processing to perform their functionalities. As such, multiple applications of AI can be categorized within the

broad definition of signal processing. Signal processing is a distinct field of study and technology; however, it often overlaps with AI.

Image Processing Image processing allows computers to process and edit digital images, often for the use of another application (e.g., an image may need to be processed to perform edge detection so that the computer can understand its subject matter). Processing can occur in two ways: analog or digital processing. Analog image processing involves interacting with two dimensional (e.g., a flat image) analog signals and a typical example is a television using an antenna system. This form of image processing is much less relevant in the digital age (especially concerning AI) compared to digital image processing. As its name suggests, digital image processing operates using finite digital data of an image, such as pixels. For the context of this paper, "image processing" will refer to digital image processing given its relevance to AI.

Object Detection and Image Recognition These two terms are closely related, yet differ slightly on technical levels. Definitions may vary, but object detection involves identifying a specific subject of interest within an image. For example, if we want to know where a cat is located within an image of a pet store, the computer would retrieve an output of a bounding box surrounding the cat with its location. Similarly, image recognition encompasses the ability of computers to identify, categorize, and label subject matters in an image. Image recognition may retrieve an output with bounding boxes and labels surrounding not only the cat but also many other prominent subjects. Both of these applications have seen dramatic improvements in performance through AI, particularly deep learning.

Computer Vision

The ability for computers to "see" imagery through mathematical representations of three-dimensional shape and appearance (Szeliski, 2011). Whereas image recognition gives computers the ability to identify subject matter in an image, computer vision allows it to comprehend meaning and context similar to humans. Being able to understand the meaning of an image is a task that comes naturally to most people at a young age. However, recreating this ability in computers represents a considerably more difficult task than merely processing an image, yet it is an integral component in creating AI that yields practical benefits to marketers.

AI In Marketing Today

At of the time of writing this paper in 2018, there is more excitement surrounding AI in marketing than high-level implementation. However, this discrepancy is beginning to diminish. Marketers who reported having interest in implementing AI soon (98%) are only now taking steps to make it happen. Only 20% of them have implemented one or more AI solutions at scale as a core part of their business in 2017 (Bughin, McCarthy and Chui, 2017). This disconnect between excitement and implementation serves as an indicator that it is not too late for marketers to implement AI, contrary to how the swell of buzz around the topic may lead some to believe they are already behind. Nonetheless, applications of AI in marketing are rapidly developing in addition to the wide variety of state of the art software and services currently available for brands to implement. It stands that 2018 and the upcoming 24-48 months may be a tipping point in the penetration of AI in marketing.

Marketing currently represents the 4th largest use case of AI concerning resources spent, and the 6th largest industry adopter of AI technology, with around 2.55% of the total industry

having invested in it (Naimat, 2016). Despite the presence of AI technology in marketing for decades, a myriad of factors has contributed to the rise in interest and feasibility in recent years. Some of these include increased computing capabilities to process AI algorithms at scale cheaper than ever before, Big Data and the data management advancements that came with it, a peaking interest in the field, and an increasingly large pool of highly talented professionals eager to advance the industry. The recent excitement around AI has resulted in $27 billion in venture funding going toward AI startups (3X more in 2017 compared to 2016) (Venture Scanner, 2018).

With AI technology being more feasible to implement than ever before, we are beginning to see its potential for marketing unfold in a variety of formats. The number of firms implementing robust AI systems still has shown to be limited, but many firms of various sizes are implementing smaller scale solutions that require less involvement to set up and manage. To visualize the varying degrees in which companies can apply AI, I made a scale that is based around a critical determining factor: level of involvement. Involvement refers to elements within a firm such as capital required to develop and maintain their AI systems, the degree to which AI plays a critical role in their core business offerings or day-to-day operations, and the complexity of their AI applications. As shown below, firms that implement low involvement AI solutions benefit from lower barriers to entry (e.g., fewer resources required), but may not be able to actualize the full potential that more robust, high involvement AI solutions have to offer. Contrastingly, firms implementing high involvement AI solutions can see a wide range of benefits at the core of their business, yet at the cost of much higher resource requirements (e.g., financial costs, time investment, expertise required, etc.).

Levels of AI Implementation

There are a myriad of degrees in which companies can apply AI, and there are already a wide variety of AI solutions to aid various marketing objectives. Determining which solution is best requires an in-depth analysis of the company, of which I will later provide a framework for determining. For now, the spectrum below provides an overview of the characteristics at various points between low and high involvement.

Low Involvement

Low involvement AI consists of third-party solutions that do not require large amounts of resources (money, time, expertise, etc.) to implement and manage. Low involvement AI provides the benefit of lower barriers to entry at the cost of less powerful technology. They can be subscription software available for a small monthly fee, free applications, or other readily accessible solutions. An essential trait of low involvement AI is that it does not act as a core value proposition or competitive advantage for the company. These are small-scale, single-use applications that often subtly use AI in their backend programming.

Examples

- Search functionalities from the user's perspective (using Google, Google Image Search, internal website searches as a part of day-to-day tasks)
- Creative applications (Adobe Creative Cloud programs like Photoshop and After Effects, EyeEm, mobile apps for editing pictures)
- Built-in functionalities of other products or services (Photo tagging on Facebook, Siri in iPhones)

Low-Medium Involvement

The low-medium involvement range of AI are automated systems made to handle lower-level, task-oriented tasks. Use cases of low-medium involvement AI reduce human participation in labor and time intensive tasks but require manual oversight and input from the user to operate.

Examples

- Entry-level usage of programmatic advertising
- Basic retargeting ads
- Newsletter automation and simple personalization (Mailchimp)
- Low-level marketing automation (Kit for Shopify)

Medium Involvement

Medium involvement AI applications make use of moderately robust technological capabilities in specific areas of the business. Rather than playing an integral role in the company's high-level strategy, these forms of AI offer more narrow-focused applications characterized by interactivity from the customer with the brand.

Examples

- Customized chatbots (for customer service, eCommerce, or personal assistant use cases)
- Custom voice assistant applications (through Amazon Alexa, Google Home, etc.)
- AI-generated music for localizing marketing campaigns
- Experiential marketing (one-off marketing campaigns or tactics that stage interactive experiences using AI, such as Walt Disney Co. using language processing to trigger an audio soundtrack as a parent reads a story to their child (Chow, 2017))

- Real-time personalized UI/UX (such as using Wordsmith to contextualize the content and layout of a brand's homepage to match the local market characteristics of a specific user)
- Creative augmentation, creative intelligence (Adobe Sensei)

Medium-High Involvement

Medium-high involvement AI branches into systems that play an integral role in the firm's marketing efforts. This category of AI implementation is characterized by usage across multiple areas of marketing efforts as opposed to single-use applications (e.g., systems to handle the entire customer relationship management process versus only handling email personalization). For large firms, this stage may be characterized by regional/location specific usage of AI, rather than company-wide usage.

Examples

- Customer relationship management (Salesforce Einstein that utilizes predictive analysis, intelligent recommendations, image recognition, sentiment analysis and task automation)
- Advanced programmatic advertising and digital marketing (Albert AI that uses in-depth behavioral customer segmentation, highly targeted automated media buying, high-level customer personalization, profound insights into consumer behavior, and cross-channel execution of marketing efforts)
- Omnichannel integrated systems to distribute creative assets (Adobe Experience Cloud)

High Involvement

High involvement AI implementation encompasses the most advanced, integral technology available to businesses. These may be highly customized, in-house AI systems

explicitly built for the company used throughout crucial decisions and operations. High involvement AI implies the technology is part of the core value proposition of the company and has a direct impact on its performance. These are robust systems that are at the cutting edge of the technology's capabilities and highly intertwined with how the company operates.

Examples

- Custom AI systems built by the company (such as the creators of AI applications themselves like Google or Facebook)
- Company-wide, cross-department usage of third party AI systems for critical operations (full-scale implementation of applications such as IBM Watson as a core feature of the company's service offerings or operating procedures)
- Pervasive AI (cognitive environments that act as integrated brand experiences using smart technology in different settings (IBM, n.d.), omnichannel CRM's that can track and segment customers using sentiment analysis online, facial recognition in a retail environment, etc.)

Progress with High Involvement AI To further elaborate on this spectrum, we can measure the current progress of high involvement AI solutions using a scale showing its maturity in Appendix A proposed by Aman Naimat (2016). At Level 1, companies are experimenting with AI in the form of lab projects with no significant tie to their daily operations. This level represents the beginning stages where the company is gauging which AI solutions would be a proper fit for their marketing objectives before investing heavily into full-scale implementation. Moving up to Level 2 we can see companies building applications. Level 2 is where the process of implementation takes place as companies invest considerable resources into developing their

AI. Level 3 represents companies that have AI fully implemented into their operations, and use it as strategic direction for their business. While the study that Naimat conducted in conjunction with this maturity scale was not exclusive to adoption in the marketing industry, he found that the vast majority (62%) of companies were in the beginning stages of high involvement AI implementation at Level 1, and only 5% of companies found themselves at Level 3.

Companies that efficiently implement AI Marketing can tap into a wealth of potential. AI represents a groundbreaking shift in the way brands approach marketing and how marketers perform their jobs. The benefits of this technology can be seen even in low involvement implementation within a company and can become more pronounced with advanced, high involvement implementation. In addition to the widespread benefits available to marketers, AI can directly add value to the lives of consumers. By facilitating delightful experiences, increasing exposure to highly relevant content, and creating frictionless interactions with brands, AI can improve the way businesses, and consumers interact with each other. If the issues relating to widespread AI adoption are adequately addressed, the same benefits that businesses and consumers experience can be stratified to society as a whole. The following is a synopsis of the benefits of AI to brands and consumers, which will be discussed in greater detail throughout the paper.

Hyper-Personalization AI allows for brands to connect with and delight their customers on an individualized level at scale. By being able to track and analyze new sources of data entirely, marketers can achieve comprehensive views of their customers to fuel their marketing efforts. This allows brands to deliver highly personalized, omnichannel marketing efforts that are much more likely to resonate. Hyper-Personalization using AI facilitates a level of intimacy

between brands and consumers that has never before been possible, leading the way for enjoyable and individually-relevant experiences that align closely with Generation Z and Millennial consumers (Vision Critical, 2016).

Efficient Spending The combination of automating time-intensive tasks, comprehensive understandings of target audiences, and deep insights into marketing performance means marketers can see lowered costs in many of their activities. The ability to get their message in front of the right customers in the right way at scale means marketers no longer need to spend money marketing to customers that don't contribute to their bottom line. Less employee time spent on repetitive or menial tasks allows for greater focus on value-adding activities as well. This means that customers may be able to enjoy higher value from the brands they interact and shop with at no extra cost to them, as well as the potential to be reached by new brands that may be a good fit for them.

Deeper Insights AI offers brands improved visibility of their customers. This means that customer segmentation can be made more effective through deep insights into consumer behavior at macro and micro levels, and campaigns can be tracked and analyzed faster and more intelligently to inform marketers' strategic decisions. Companies can tap into data from sources that were previously unavailable to them to achieve a highly comprehensive understanding of their customers. For consumers, this entails increased relevancy of the marketing messages they are exposed to and highly contextualized and personalized experiences with brands. Profound insights can set the foundation for brands facilitating long-lasting, meaningful relationships with their customers by reducing their frustrations and allowing for 1:1 experiences to take place.

Frictionless Accessibility AI enables brands to automate many customer-facing activities that previously required human labor to execute, such as customer service representatives or sales associates. Brands can see lowered costs in hiring, training, and managing employees, while simultaneously enabling customers to access companies in a myriad of self-service channels (such as chatbots, voice-powered applications, personal assistants, and more). Customers having the ability to access a brand at their convenience means interacting with brands will increasingly become a hassle-free experience. As AI can fill customer-facing roles with incredible efficiency and efficacy, customers and employees can have access to companies at their convenience.

Scalable Experiences Marketers of the future will have an arsenal of tools available to create experiences, communicate meaningful stories, generate value for their customers at scale. Being able to reach customers in highly personalized ways means customers can be entertained, enlightened, and empowered through 1:1 marketing. Highly interactive experiences using AI (such as biometrics, facial recognition, emotion analysis, etc.) allow for more meaningful interactions between brands and consumers. With brands being able to individualize marketing efforts at scale, customers can enjoy content tailored to their interests, aspirations, and needs.

1:1 Marketing

The topic of AI in marketing is wide-ranging. However, a logical entry point into its discussion starts with the idea of making marketing relevant to consumers through personalization. While there are many ways to personalize marketing, the idea behind 1:1 marketing hones in on a goal that many marketers aim to achieve. 1:1 marketing involves the personalization of marketing efforts to a level of granularity equivalent to communicating

directly to a specific individual. AI now offers a way to achieve this at scale by using customer data to create and deliver marketing messages catered directly to individual needs, desires, quirks, and interests.

However, previous iterations of 1:1 marketing could more accurately be described merely as personalization. While not quite reaching the point of marketing to a specific individual, rule-based personalization efforts have been able to pull from the overarching logic behind 1:1 marketing with great success. An example is personalizing an email with a customer's name. Personalization is useful for brands and preferred by customers, making it a cornerstone concept for integration with AI.

A study conducted by Boston Consulting Group revealed that personalization efforts can boost revenues by 6% to 10%, and is expected to shift $800 billion in revenue towards the 15% of companies able to successfully implement it over the next five years (Abraham et al., 2017). The power of tailoring marketing efforts around individual consumers builds economic value. Despite 96% of marketing executives claiming how personalized marketing helps create better customer relationships (Evergage Inc., Researchscape International, 2017), marketers are facing issues implementing it. As with the topic of AI Marketing, marketers understand the importance of personalization but lack the knowledge and ability to apply it effectively.

The benefits for brands who implement personalized marketing effectively extends to their customers as well. Customers favor personalized marketing, as evident by 42% higher conversion rates from personalized calls to action (CTAs), 40% higher average order values, and 600% higher overall conversion rates (Kibo, 2017). The reason for this is multifaceted. One contributing factor is that people are more likely to pay attention to a marketing message if it is

explicitly addressed to them. This occurs due to a function of the human brain called the reticular activating system (RAS) (Stevens and Hening, 2007). The RAS acts as a filter for our minds to know which data inputs to pay attention to and which are inconsequential. A typical example used to illustrate this idea is the Cocktail Party Effect, or the ability to focus on one particular, relevant stimulus while simultaneously filtering out many other stimuli. While the Cocktail Party Effect pertains to auditory stimuli, the idea behind it applies to consumers' proclivity for paying more attention to personalized content over generic content.

The relevancy of this innate human quality is paramount to marketers, and will increasingly be so in the AI Marketing Era. AI in marketing enables a host of capabilities that improve the ability of marketers' to first understand their customers in a comprehensive, individual level, then create and distribute content that is personalized and relevant to them at the right time and place. For example, a pizza company using image recognition technology could foreseeably automatically place an ad with a coupon code across multiple channels when a person posts about wanting pizza on their social media account. The brand can earn the business of customers at the exact right moment, and customers can save money on their purchase of the pizza that they wanted. As customers interact with the brand further, a relationship can be formed over time that generates revenue for the brand and provides timely value to customers.

AI offers personalization at scale to meet individual consumer's needs and wants across every touch point of their consumer journey. AI services like IBM Watson allow for delivering real-time, personalized content and data-driven customer insights automatically, making 1:1 marketing a feasible endeavor. While there are robust AI services already on the market to achieve 1:1 marketing, adoption of these technologies are only at 13%, compared to 67%

adoption of rule-based personalized marketing (Evergage Inc., Researchscape International, 2017). This gap between AI-powered personalization services and their less dynamic counterpart (i.e., rule-based personalization requiring marketers to hardcode many if-then statements) represents one of the issues that marketers are facing amidst growing consumer preference and bottom-line business performance for personalization. Additionally, 33% of marketers report they have no way of even accomplishing such personalization (Sukhraj, 2017).

Case Study: OYO One of many examples of the power of personalization can be seen in the following case study created by Blueshift (2016) to showcase its work for its client OYO, India's most extensive hotel network. OYO utilized a programmatic CRM system from Blueshift to become a leader in highly personalized marketing. Previously, it was only able to use 30% of its offline and online data in its marketing efforts, which both resulted and stemmed from not being able to track and understand its customers on a deeply personal level. While still successful, OYO was looking to increase bookings and communicate the highly customized quality of service its business through its online marketing efforts. OYO turned to AI service provider Blueshift to make this happen.

Blueshift used its AI systems to efficiently analyze all of OYO's online and offline data sources. This allowed it to segment OYO's customer base to achieve a data-driven understanding of how they behaved online, giving it a complete, real-time view of its customers. Armed with relevant insights, Blueshift helped OYO develop a Personalization Studio that allowed marketers to "create different types of targeted recommendations for different segments." By anonymously tracking customer information across all marketing platforms and utilizing programmatic ad

buys, it was able to place highly personalized recommendations where OYO's customers were most likely to see and engage with them.

In just three months, these AI-driven 1:1 marketing efforts led to a 5x increase in room bookings - a massive lift given OYO's status as an industry-leading company. Triggered campaigns, price-drop alerts, booking recommendations, and destination recommendations based on geolocation tracking made OYO customers' experiences more personalized to their specific behaviors. OYO is one example of many companies that have already been able to use intelligent, personalized marketing to see direct benefits to their bottom line. Soon, marketers can expect to see this strategy implemented by OYO become much more commonplace, and at an even greater magnitude as the level of personalization capable becomes more contextualized. This shift towards 1:1 marketing efforts is a frequent theme of the AI Marketing landscape.

Problems with 1:1 Marketing The idea of 1:1 marketing has enchanted marketers for years, but has been an incredibly difficult endeavor to implement at scale. Achieving a comprehensive view of customers, then simultaneously creating, optimizing, and analyzing highly personalized content for them across multiple channels has been nearly impossible to achieve. An influential factor that has enabled marketing personalization yet contributes to the difficulty of achieving 1:1 marketing is the usage of cookies.

Cookie-based marketing has been the dominant strategy for achieving personalization in the digital era. In brief, a "cookie" is a packet of information sent to a user's browsing device by a website that she is visiting. Cookies were first introduced as temporary mechanisms for state management (i.e., a short-term way to remember the preferences and history of a user on a specific website) to improve the performance and experience of a website visitor. Cookies

quickly became adopted for marketing purposes once their efficacy became evident. The inherent nature of cookies being able to track information about an individual consumer's online behavior (e.g., purchasing a product) and browsing history (e.g., visiting a brand's website) has allowed for better-informed customer segmenting and increasingly personalized ad content. To this day, the primary use case of cookies in marketing is for retargeting advertisements (i.e., advertisements that are personalized to varying degrees based on a user's interactions with a specific brand's website that are then displayed on other websites they visit later).

The efficacy of targeted ads using cookies is superior to non-targeted advertising (e.g., television ads, newspaper ads, or generic online banner ads) (Arslan & Telang, 2015), as will be discussed more in-depth later. It is this reason that cookie-based marketing tactics have remained widely used. However, the degree to which cookies are used to personalize the content of an advertisement is a crucial factor. Research done by Lambrecht and Tucker (2013) demonstrated that targeted ads based only on a user's browsing history (i.e., visiting a website) performed better than ads that were personalized further based on the user's online behavior (i.e., products she viewed, content she interacted with, a newsletter she signed up for, etc.). This factor, along with an increasingly vast majority of consumers reporting concerns for their privacy resulting in governmental policy changes (Lancefield, Ambler, Rauber, & Patel, 2011), sheds light on a core issue of cookie-based marketing.

Consumers enjoy when businesses use their data to customize and improve their experience (Interactive Advertising Bureau, 2014). However, there is a threshold between creating a better user experience through personalization and invasion of privacy. A recent study revealed that over 90% of people reported feeling that advertisements have become more

intrusive in the past 2 or 3 years (24 7.ai, 2018). Further, ad blocker usage has been steadily increasing year over year (Statistica, 2017), and customers report that they trust organic search engine results far more than banner advertisements ([24]7.ai, 2018). As such, the status quo of cookie-based, low-level personalization has left a bad taste in the many internet users.

This feeling of cookie-based marketing infringing on the invasion of privacy has led to positive efforts to improve transparency online. One example is The EU Cookie Law, which requires websites to obtain consent from their users to allow for usage of cookies. Legislation such as the EU Cookie Law represents a step forward toward ensuring consumer privacy online. Marketing at the expense of consumer privacy is ineffective from both a business and moral perspective. Overstepping boundaries when implementing personalization leads to lessened ad performance and distrust from consumers. As such, it may be possible that the technology behind cookies themselves may not be suitable for the changing demands of both consumers and marketers alike.

Using cookies to achieve true 1:1 marketing is tricky. A cookie is generated for a single website and does not typically transfer across devices. The result of this is a fragmented view of the customer from marketers' perspectives since they are limited to a small amount of information (i.e., the interactions the customer has with a brand's website on one channel between periods where the cookie is active). This is amplified by the lack of omnichannel synergy from the inability for cookies to transfer across browsing devices. Cookies alone seemingly do not provide a level of understanding about individual customers required to achieve 1:1 marketing.

Trends that are being made possible through AI may make 1:1 marketing more feasible without solely relying on cookies, however. Through smarter data intake and management using AI and first-party data, marketers can achieve insights into their customers that reveal a much more comprehensive view of their behavior, interest, needs and wants. These profound insights can then be paired with AI-powered omnichannel strategies that allow marketers to reach customers where, when, and how they would like to with advertisements that are contextualized in a way that cookies could not achieve. Further, the AI Marketing landscape is still malleable enough to accomplish 1:1 marketing in a way that does not infringe on consumer privacy like cookies have.

Applications of AI like NLU, image recognition, sentiment analysis or biometrics offer abundant opportunities for data intake that not only provide smarter insights but can allow for 1:1 marketing in a way that is less invasive than tracking using cookies. By being able to harness the data generated by many touch points such as social media, customer-employee interactions, omnichannel behavior and more, marketers can get a better understanding of their customers.

One of the main issues with AI-powered personalization is the potential for it becoming more invasive than cookies. These new forms of data intake for 1:1 marketing will need to be implemented in ways that are both highly transparent to customers, provides them with the option to opt-out, and are unobtrusive. If AI-powered 1:1 marketing can give the full potential of its value to customers, it may not be as invasive as cookie-based marketing. Regardless, preemptive measures will need to be put in place to ensure transparency and privacy are a top priority. The value 1:1 marketing is only as much as customers are happy and willing to participate, so implementing AI in ways that are unobtrusive while adding value is paramount.

Marketers will need to exert equal effort into using AI to generate value for their business as they do use AI to synergize their efforts with their customers' preferences.

Programmatic Advertising

Programmatic advertising (programmatic) is defined as automated digital media buying using machines. Traditionally, media buying has been a labor-intensive process involving coordination of pricing, placement, and many other details in advertising agreements that have created inefficiencies for marketers. Now, programmatic has changed the dynamic of digital media altogether. By automating processes with insights fueled by customer data, marketers can deliver highly targeted and personalized advertisements at scale. Programmatic began as a solution for companies to automatically sell off remaining ad inventory, and has since blossomed into a massive industry that is on track to facilitate 4 out of 5 digital ad buys equivalent to $45.72 billion by 2019 (eMarketer, 2017).

Programmatic has used varying degrees of AI throughout its existence. 75.7% of mobile advertising spend and 71.8% of online advertising spend happen on platforms that utilize artificial intelligence or machine learning (Barker, 2017). However, further integration of AI in programmatic can help improve overall performance. At the moment, AI in programmatic is used for customer segmentation (e.g., through pattern recognition, behavioral analysis, etc.) and facilitating the automation of certain aspects within programmatic itself (e.g., real-time, automated ad buys, automated personalization of ad content, etc.). More advanced capabilities of AI that allow for customer conversion prediction or campaign optimization of creative assets are beginning to see adoption as well. Marketers may soon benefit from AI in programmatic related

to more advanced customer segmentation, improved levels of transparency, reduced ad fraud, and interactive ad units as well.

Improved efficiency and robust targeting and segmentation summarize the gist of programmatic's value to marketers. While not perfect by any means, programmatic has proved valuable overall. 87% of marketers see greater returns using programmatic advertising (Watts, 2016), and 30% can increase the target audience reach on average (Blaustein, 2017). For example, Google was able to reach 30% more people 3X more frequently at a 30% lower effective cost-per-thousand impressions (CPM) than its previous year, on top of a 50% boost in brand awareness (Starr, 2015).

Transparency, Distrust, and Fraud

Marketers are reporting many issues with programmatic despite industry spending in the billions of dollars. An overwhelming number of marketers (92%) stated how performance reporting is a primary issue they face with programmatic (Metamarkets, 2017), and many more have named lack of reliable performance measurement, ad fraud, and brand safety as significant concerns (Gregoriadis and Nutley, 2018). A primary factor playing into these issues is that brands are experiencing rampant fraud. Publisher Hearst reported that 50% of money spent on programmatic media "goes somewhere other than into their coffers." When Matt O'Grady, CEO of Nielsen Catalina Solutions, was asked the question of what percentage of programmatic impressions are viewed by humans, he confirmed research findings in stating that he "would say over 50 percent" (Lynch, 2017).

Further integration of AI in programmatic offers solutions to many of the issues marketers face. For one, AI allows for improved pattern recognition, insights into the sentiment

and context of a website's content, and predictive analysis that can guide advertisers into making smarter partnership decisions. These capabilities are crucial in fighting issues relating to brand safety and ad fraud.

Similarly, AI-powered ad placement optimization is evermore vital because the setting of an ad placement plays a crucial role in determining performance. A study by Inskin Media (2014) revealed that ads viewed on sites judged as being irrelevant or unrelated to the customer's journey were 11X more likely to discourage them from following through with a purchase. Similarly, ads placed on relevant, trusted sites were 40% more likely to encourage them making a purchase. It is evident that the context in which an ad is viewed drastically impacts customer perception and behavior.

Inskin Media's findings are congruent with the widespread concern amongst marketers regarding brand safety (i.e., the issue of ads appearing next to content or on sites with controversial messages or brand images that can negatively impact how people perceive the advertiser). Brand safety is a legitimate issue both quantitatively and qualitatively. People are far less likely to follow through with a purchase if an ad is placed on an untrustworthy site, and extreme scenarios can severely harm the advertiser's brand image. Major companies like JPMorgan Chase, Proctor and Gamble, AT&T, and Verizon have all reduced their digital ad spending considerably due to this very issue.

AI's deep analytical capabilities can prevent such events from happening. By determining which partners would be a solid fit, blacklist-worthy sites versus trustworthy sites, and optimal ad vendors, advertisers can use programmatic intelligently. The same logic is extended to the issue of programmatic ad performance reporting. NLU and NLP can be used to translate and

summarize key performance indicators (KPIs) that are most relevant to marketers. Paired with improved brand safety and better insights into which partners to work with, marketers can be sure their performance reports are accurate.

Omnichannel

Brands of today are required to deliver cohesive experiences across the many different channels that their customers use. Rather than treating their marketing efforts as independent campaigns, brands must offer consistent, relevant messaging across every channel. Customers use an average of 2.8 points of contact before making a purchase (iAdvize, 2016), so a brand's ability to optimize the frequency, positioning, and contextualization of their marketing efforts across all channels is evermore critical. This idea is appropriately named omnichannel, defined by Forrester Research as "the practice of sequencing digital advertising across channels so that it is connected, relevant, and consistent with the customer's stage in his or her life cycle." (Joyce, 2016). Paired with AI, programmatic advertising offers an efficient way to accomplish omnichannel synergy.

Properly executing an omnichannel strategy has proven difficult for marketers for many reasons. As the number of channels used by consumers on a daily basis continues to increase with the introduction of voice assistants like Amazon Alexa, chatbots, conversational user interfaces and more, providing relevant marketing messages in a 1:1 manner becomes evermore tricky yet necessary.

Part of the issue is that programmatic ads need to be synchronized to where a customer is in the sales funnel. At the foundation of optimizing for omnichannel synergy is improving how data is tracked, organized, and implemented into programmatic campaigns. Many advertisers use

as many as ten channels when tracking attribution of their campaigns (AdRoll, 2017), which is an amount of data that requires considerable effort to manage. Even more complicated is the increasing need for using real-time data to fuel programmatic decisions. Marketing messages can become irrelevant in a short time span while a customer is interacting with a brand. As a customer moves from researching about their options for a particular product to intending to shop with a brand, their determination of what a "relevant" marketing message is will change. Thus, being able to cater marketing messages in real-time can significantly improve ad performance. People are 4X more likely to purchase a product after exposure to an ad during their research phase (Inskin Media, 2017).

Fortunately, customers typically are happy to allow brands to use some of their data to provide more relevant experiences. 74% of customers report being frustrated when a brand's website content has nothing to do with them (Kibo, 2017), and 86% knowingly cite "personalization" as an influencing factor in their decision to make a purchase (Infosys, 2013). While many customers become frustrated when personalization turns into an invasion of privacy, the majority of them see net-positive benefits from personalization using data.

Thus, effective data management is the crux of stellar programmatic performance, and AI offers a solution to improve it. Machine learning applications designed to organize and integrate data in real-time can enhance programmatic performance at scale. Systems can be created to track customer behavior omnichannel while combining historical and real-time data to inform programmatic decisions, automatically.

It is up to marketers themselves to facilitate execution of AI-powered data management systems. While machine learning systems can deliver powerful automation, they require large

amounts of data. Marketers must prepare for such data requirements by ensuring they can digitize and track enough information across all of their channels. As a study by Monetate (2017) regarding marketing personalization discovered, very few firms are correctly integrating data from all of their channels online and offline. Out of the firms seeing positive returns from implementing personalization strategies, 83% of them have dedicated budgets for such activities (Kibo, 2017), so brands of the AI Marketing Era must be willing to invest into the process.

Retargeting

Retargeting ads are a form of digital advertising closely linked with programmatic and machine learning. Retargeting ads are high performing, often better or the same as search (91%), email (91%), and other display ads (92%). They are a form of automated ad buys that trigger based on tracked information about a user (such as past viewing history, recently purchased products, and other behaviors) primarily through third-party data (e.g., browser cookies) and first-party data (e.g., previous purchases with a brand). Retargeting ads typically utilize personalization to make for more relevant messaging to customers, resulting in a higher average click-through rate (0.7%) compared to traditional online ads (0.07%) (Abramovich, 2012).

Retargeting ads are versatile in many ways, particularly in being able to target customers better than traditional forms of advertising. The ability to target at a granular level has been reported by 61% of marketers as the number one benefit of programmatic retargeting ads (Gregoriadis and Nutely, 2018), as their data-based nature allows for performance-focused customer segmentation.

By targeting customers based on their history with a brand's website (including pages visited, visit frequency, products viewed, purchase history, etc.), activity with previous

marketing efforts, search engine query history, or geographical location, marketers can make highly detailed segments. Different audience segmentation techniques yield different results and retargeting budgets should be portioned in correlation to the value of each segment. For example, a potential customer who has abandoned their online shopping cart holds much more value to an eCommerce store than an average website visitor who viewed a couple of pages then left (Apsalar, 2014).

While retargeting ads have proven successful, the necessity for further integration with AI is evident in consumer frustration them. Consumers enjoy personalization, but retargeting ads are frequently a core factor in insinuate feelings of distrust and annoyance. The issues of cookie-based marketing are highly relevant here. Factors such as ad frequency, the timing of ad exposure during customer journey, and the degree of ad personalization are all variables capable of not only creating negative emotions within consumers but also severely diminished ad performance.

Specifically, a study by Inskin Media (2017) showed 53% of consumers reported how exposure to a retargeting ad a couple of times can be helpful but quickly becomes annoying. The point at which ad frequency tips into the “annoyance” category seems to be around three ads, as approximately 23% of respondents felt annoyed at this level of frequency compared to 7% reporting feeling the ad was helpful. The numbers get increasingly worse as ad frequency rises, with 35% of respondents feeling annoyed and 3% feeling helped after 4-5 ad exposures, and 32% feeling downright angry after 10+ exposures.

AI can optimize retargeting ad frequency. Machine learning algorithms can accommodate for the ideal number of exposures to an ad that customers receive to provide more of what

retargeting ads are good for while avoiding levels of annoyance. Given that 55% of customers are discouraged from purchasing repeated exposure to a retargeting ad (Inskin Media, 2017), AI-powered optimization can serve as a pivotal tool in boosting return on investment (ROI).

As previously discussed, the timing of ad exposure is highly influential. Retargeting ads are not a "one-size-fits-all" tactic. The messaging, creative content and timing of them must correlate to various stages in the customer journey. This aspect of synchronicity with customer journey progression is crucial to achieving the relevancy that customers desire from ads, as with non-retargeting programmatic ads. Failing to do so can result in customers being 15% less likely to follow through with a purchase. Similarly, customers exposed to an irrelevant ad after making a purchase are 4x less likely to return to the company (Inskin Media, 2017).

Fortunately, retargeting ads have proven to be effective for many marketing objectives throughout the customer journey. For B2C companies, brand awareness (69%), social engagement (64%), and driving sales (60%) have been top performing objectives with retargeting. B2B companies reported similar findings with brand awareness (71%), customer retention (59%), and social engagement (58%) benefiting most from retargeting ads. Both B2C and B2B reported lead nurturing (27% and 29% respectively) and product cross-sell/up-sell (33% and 32% respectively) and the marketing objectives they have seen the lowest improvement with from retargeting ads (AdRoll, 2015).

Further, the timing in which brands try to re-engage customers through retargeting is a crucial factor for success. Customers are 10x less likely to complete a purchase if the brand waits longer than an hour to re-engage with them (Arsenault, 2015). Thus, real-time data, omnichannel data integration is a crucial improvement to programmatic using AI.

Organizational Structure

Effectively implementing AI in programmatic advertising requires transparency and integration of the analytics, insights, and data that different employees or departments may have within a company. As a study from Accenture reports (2017), the primary challenge firms face when using customer data for better audience targeting is the existence of internal organization silos. AI will not provide value to a company if it is used within a silo, so organizing the internal structure of a company to harbor a cross-functional, data-focused environment is necessary. What this means is that systems must be in place to facilitate the ease of sharing data throughout an organization to achieve a complete picture of its customers. Now more than ever, firms will need unity in their strategic direction and messaging to pair with real-time customer data. If they are unable to do so, AI may hurt their brand, as 69% of customers named consistency across channels as a factor that affects their loyalty to a brand (Infosys, 2013).

Brands must encourage complete transparency and accessibility to data for employees to promote a cross-functional, data-focused environment. Every employee relevant to a campaign should have equal ability to access data across the company to inform cohesive segmentation and overall insights. Beyond this prerequisite of a unified vision of their customer through shared data across the entire organization, firms need systems and processes in place to harvest and analyze their marketing performance.

Case Study: Harley Davidson NY Harley Davidson of New York is a typical example of how programmatic infused with lower involvement AI can be implemented quickly to offer direct benefits to a company's bottom line. This mini-case study was detailed on the Harvard Business Review (Power, 2017). Asaf Jacobi's Harley Davidson in New York had been pulling

in a meager two sales per week, and something needed to change. After talking with Or Shani, CEO of an AI firm, Adgorithms, Jacobi tried out its AI-driven marketing platform, Albert. In just one weekend, he sold fifteen bikes - nearly double his all-time summer weekend record of eight. He then went from bringing in one qualified lead per day to 40 per day. By just the third month of using Albert, the number of qualified leads increased 2930% - enough to be forced to open a new call center and hire six new employees just to keep up.

How exactly did Albert drastically increase business in just three months? It began by scrubbing through the customer data from Jacobi's customer relationship management (CRM) system. It looked for shared characteristics of previous valuable customers, as well as potential customers who have exhibited purchase intent (people who were in the top 25% of time spent on the website, people who placed a product in their shopping cart online, etc.).

Using the patterns it discovered, Albert created micro-segments of lookalike users that were then used to test thousands of aspects of the campaign to optimize it. Albert was given creative assets from Harley Davidson, which allowed it to A/B test thousands of variables at once. Once the headline, visuals, and all other aspects of the campaign were finely tuned, the campaign was scaled across all digital platforms automatically. All of the painstaking work that would have taken a human marketer great lengths of time to finish, Albert was able to automate. The result was a 183% increase in user transactions and a 25% increase in overall ROI.

Image Recognition and Computer Vision

Image recognition and computer vision offer marketers a wide range of potential uses. From a technical standpoint, these technologies utilize AI in the form of convolutional neural networks (CNNs) that allow for computers to analyze image data more efficiently than regular

neural networks by clumping groups of pixels together to increase efficiency (Keenan, 2017). Recent improvements in image recognition have allowed the technology to be an incredibly useful tool for marketers to implement, especially given consumer's preference for visuals in digital marketing efforts (Wurmser, 2017). From 2010 to 2015, the success rate of image recognition in the IMAGENET competition for machine learning algorithms increased from 72% to 96% respectively. Similarly, the success rate of "difficult-to-detect" images in the KITTI vision benchmark jumped drastically from 39% to 87% in just a five-month time span of July to December 2015 (Agrawal et al., 2016).

While image recognition technology has been on the market for years now in the form of facial recognition on Facebook and the image search function on Google, we only are now seeing the full extent of marketing-based applications that the technology offers. Image recognition and computer vision can vastly improve how marketers understand, track, and interact with and understand consumers at scale in a way that works congruently to their lives.

Social Media

The impact that social media has on marketing best practices is undeniable given there are currently 3.01 billion active users on social media (Sikandar, 2017). Social media boasts a clear-cut, well-documented track record for boosting firm's marketing initiatives throughout the sales funnel. Thus, social media is a critical component of every marketer's toolkit that will need to be integrated with AI. Every day, billions of images are shared on social media - and this presents a challenge for marketers (Meeker, 2016).

Before image recognition and computer vision, being able to quantify and analyze the full extent of brand performance on social media was difficult. An example is if someone posted a

picture of a brand and captioned it with something unrelated to the image's content (such as a picture of their morning cup of Starbucks Coffee captioned about how busy their Monday has been). There was almost no way for a marketer to find the post and measure it in unison with their other social media marketing efforts. For years, people may have been sharing their opinions about brands, offering insights into how they use a brand's products or services in their day-to-day life and other deep insights without there being a way for marketers to track and measure at effectively. Over 80% of all images are posted without any context or hashtag (Metaeyes, 2017).

Furthermore, marketing in the digital age is a dynamic relationship between the marketer and consumer. The billions of people who use social media possess the powerful ability to co-create and interact with brands through viral content, user-generated content (UGC), influencers, and facilitating word-of-mouth (WOM). Marketers' ability to understand and analyze the impact of these organic interactions can be crucial to their overall performance, and the ability to do so can be enhanced using AI.

Being able to understand the sentiment, candid consumer behavior, and track attribution accurately on social media has been limited to somewhat surface-level analytics. Marketers can measure the effectiveness of their social campaigns through tracking engagement rates, impression counts, link clicks and more, but these metrics may be limited to basic ways of analyzing customer behavior and understanding sentiment accurately. Traditional social media metrics are limited to tracking specific behaviors that do not always provide clear insights and may exclude people who do not like participating in those behaviors (e.g., a person who does not like sharing posts from companies on their social media account).

Where image recognition and computer vision can significantly impact social media marketing is in offering a way to track and analyze behaviors that provide informed insights to marketers. Consumers reveal incredibly valuable information about themselves through the photos they post, share, and engage with. There previously had been no way for marketers to tap into this potential at scale. By using image recognition and computer vision applications, marketers can identify which brands consumers are posting about, how they use those brands in their daily lives, the role brands play in candid interactions, and much more. Many companies and solutions are becoming available for marketers to make this robust capability a reality. For example, image recognition for marketers on Facebook gives the ability to see when a brand's logo or other relevant feature are shown in an image automatically (Shah, 2016).

Segmentation and Targeting

Image recognition and computer vision allow companies to achieve a deeper understanding of their customers, and segment accordingly. As discussed in the previous section, the pictures that an individual shares or shares reveal valuable insights into what makes them tick. That information can then be used to segment customers to be targeted with personalized advertisements. By analyzing customer behavior in an organic format, marketers can create increasingly accurate customer segments that have a much higher chance of a marketing message resonating with them. Some companies are already implementing this into their marketing efforts. For example, Coca-Cola's Gold Peak iced tea brand utilized image recognition technology to scrub through Facebook and Instagram, then find people who are drinking iced tea and exhibit happy emotions. These indicators in their pictures served as self-assigned customer segments that Gold Peak then used to target ads. Once users left their social media platform, they

were targeted with ads for Gold Peak on mobile and desktop websites (Dua, 2017). The performance of this tactic was clear-cut as the brand was able to see a click-through rate of over 2%, which represented a 3-4x increase over its previous ad performance.

This is just one example of how image recognition and computer vision can be used to segment and target customers intelligently. A slightly different example is Ripple, a pea milk beverage company. Ripple partnered with a third-party AI solution company to track healthy lifestyle, organic living related images, then segmented customers based on who viewed images in those categories. It then placed a simple banner with a one-line explanation of what their company is and a call to action on top of an image that fit the same "healthy lifestyle, organic living" category. Ripple was able to see an engagement rate upwards of 6%, 2x higher than its industry standard of 3% (Dua, 2017).

Image recognition and computer vision technologies offer entirely new ways for marketers to segment and target customers. With Pinterest using image recognition to suggest related content to its users (Peterson, 2017) and AI solution companies offering ways to scrub major social media platforms for insights into their user's images, it is now becoming incredibly valuable and feasible to implement this form of AI. Marketers can expect to see an increase of image-based segmentation soon.

Facial Recognition

Facial recognition is used to power a variety of everyday applications, such as photo tagging on Facebook, facial identification on smartphones, and Snapchat facial filters. It has been around for years and is now seeing a boom of 13.9% compounded annual growth rate, placing its estimated market value of the facial recognition market at $7.76 billion by 2022

(MarketsandMarkets, 2017). The huge expectations surrounding facial recognition are due to the immense value it offers. For marketers specifically, facial recognition technology opens opportunities for seamless, omnichannel customer engagement and intelligent marketing efforts never before possible.

Interactive Marketing Through Biometrics

Use cases of facial recognition in marketing today can be seen in interactive campaigns. Interactive marketing using facial recognition operates by reading biometrics of the participant, allowing the brand to capture data on their sentiment and mood while offering a fun experience. One shining example of this is Expedia's *Discover Your Aloha* campaign. Expedia's campaign works through having the customer turn on their webcam, then allowing them to be immersed in a tropical paradise as they are led through the beautiful scenery of Hawaii. Where facial recognition technology comes into play is by analyzing which part of the experience elicited the most positive reaction out of the visitor. Once visitors left the site, they were targeted with a coupon for the area in Hawaii that they responded most positively to (Duran, 2016). This clever use of facial recognition allows Expedia not only to create an interactive, experiential marketing campaign to delight its customers, but it then was able to add even more value by offering highly personalized discounts to let visitors see their favorite part of Hawaii in real life.

Another example is through Coca-Cola's "Coke-Moji Happiness Experiment" (2015). This campaign was remarkably simple, as it consisted solely of setting up an interactive digital billboard in a subway in Stockholm. As subway riders approached the billboard, it would mimic their facial expressions, effectively creating a live "emoji" reflective of their emotions. While

there was no call to action tied to this campaign, it serves as an example of the increasing number of ways brands can interact with their customers on a personal level through AI.

Facial recognition technology makes experiential marketing efforts much more interactive, and hold the incredible potential for facilitating meaningful experiences with customers. Brands of the AI Marketing Era can stage highly personalized experiences with their customers in real-time to delight them and form long-lasting relationships. Furthermore, immersive experiences through digital channels may no longer be limited to haptic systems, such as having users click through an interactive game. Riveting experiences can be provided to limitless numbers of users digitally, as Expedia's *Discover Your Aloha* campaign illustrated. As the technology continues to advance, such experiences can become increasingly more personalized, relevant, and be captivating at scale.

Analytics

Additionally, a whole new category of marketing metrics may be utilized someday. The ability for computers to read and understand customers' facial expressions lays the groundwork for being able to analyze marketing efforts infinitely more intelligently. As customers work their way through a brand's website or app, the sentiment they express could be turned into quantifiable data that marketers can use to gauge the points where key mood changes occur. Locations along a customer's experience with a brand that evokes a change in mood indicate positive or negative critical junctions that can then be optimized further. That information could then be used to guide a myriad of marketing efforts like personalization from changes in facial expression, improving the quality of user interface at critical points in the customer journey, or optimizing campaigns for emotion levels along the customer journey.

Having this level of deep, accurate understanding of how customers interact with a brand's marketing efforts offers a quality of data analytics that simply cannot be achieved through less comprehensive digital marketing metrics. However, implementing such forms of new analytics would undoubtedly be a complex task that would also require ways of differentiating the facial recognition data that is only related to a brand's marketing efforts and expressed permission from customers to allow brands to capture this form of data.

Creativity

As a whole, marketing is a field that requires both analytical and creative thinking. This innate quality is a core reason why marketers stand to benefit from the benefits that AI offers. As a report from Rocket Science states, "people will see an increase in the amount of time they have for tasks around critical thinking and creativity" (Rocketspace et al., 2016) as routine and repetitive tasks are automated though AI. As a result, marketers can expect to see an increased level of importance placed on creativity in their day-to-day work as more time is allowed for higher-level, human-focused activities. With this, soft skill sets such as creativity and empathy will increasingly serve as sources of competitive differentiation. Brands that can delight their customers with immersive experiences, meaningful stories, and human-centered design will increasingly become market leaders in the AI Marketing Era.

AI affects creativity in marketing by 1.) providing deeper insights to improve creative decisions and form creative strategy around, 2.) allowing for creativity to become a crucial differentiating factor for companies by facilitating meaningful, impactful, and personalized experiences, 3.) optimizing the effectiveness of creative assets by delivering them to the right

customers in the right way at the right time, and 4.) automating repetitive aspects of producing creative work.

Andrew Ng discussed in his 2017 Stanford MSx Future Forum how AI cannot create novel inventions and complex pieces of art, and will likely not possess such capabilities for many years into the foreseeable future. The fact is, humans still do not understand how our minds work in totality, which prevents creativity from being a task that can be recreated artificially yet.

Despite AI not yet having the capability to create novel works without human intervention, it has shown glimmers of being creative in the past. An example of this can be seen in the infamous showdown between Google's DeepMind project AlphaGo and renowned Go player Lee Sedol in 2016. The game of Go is an ancient board game characterized by simple rules, allowing players a degree of freedom in how they compete with each other. The goal of the game is simple: to use your pieces to surround a larger portion of the board then your competitor. This free-form nature of the game, paired with the fact that there are roughly 600 billion potential moves that would take 80 months just to train the AI system with at best (Lee et al., 2016) means that Go is not a game that can be won purely by computational force. An aspect of human intuition or creativity is needed.

In fact, this intuition factor was coded into the algorithm itself using a Monte-Carlo Tree Search (MCTS). The MCTS allowed AlphaGo to lookahead with each move and narrow down which options have the highest probability of success (Silver et al., 2017). While a code function may not fit the romanticized idea of artificial intuition and creativity we have envisioned, it served as a key factor in allowing AlphaGo to beat Lee Sidol without needing to compute billions of potential move calculations. The 4-1 victory of AlphaGo over Lee Sidol represented a

monumental moment in AI history that came a decade earlier than leading experts in AI expected (Knight, 2016). For reference on how quickly these developments are occurring, Google out-performed themselves in 2017 in creating AlphaZero, a software that beat AlphaGo after learning to play three different games entirely unsupervised in just 24 hours (Chiu et al., 2018).

Further advancement in AI as applied to NLP, NLG, and image recognition offers improvement to the role that creativity plays in marketing. There are a wide variety of applications of AI for creative endeavors, some of which are already established on the market and others that are nearing entrance. By pairing such applications with the capability for automation of rote work, the AI Marketing Era will likely favor the most creative-driven brands. Creativity represents one of the primary differentiating factors for brands as AI can free up more time for employees once burdened by labor-intensive tasks.

AI can augment creativity for marketers. The romanticized view of creativity being a gift reserved only for special artists who never run out of inspiration is not factual. The reality is that creative endeavors are filled with repetitive tasks to execute properly, as well as a taxing mental burden that can lead to burnout or creative fatigue. AI will not be automating creative job roles soon, but it does offer solutions to many of the pain points related to creativity in marketing.

Personalized Narratives

One example of an application of AI for creativity is in personalized narratives, or the ability for AI to generate copy and descriptive-style reports without human intervention. While this application is not yet perfected, multiple companies offer services that involve AI-powered content writing. One popular option is Wordsmith from Automated Insights. Wordsmith uses NLG to automatically generate narratives based on sets of input data, allowing marketers to

create highly personalized content at scale and reduce time spent on repetitive writing tasks while still adhering to their brand's voice.

A shining example of Wordsmith in action is how Yahoo! Sports used it to generate individualized narratives for 70 million of its users automatically. By taking a variety of input data from its Fantasy Football leagues such as draft reports, match previews, and match recaps, millions of customers received highly personalized reports about their team's performance. The result was swathes of delighted Yahoo! Sports users, and "over 100 years of incremental audience engagement" when taking into account the average number of unique viewers per week and the average time spent on Yahoo! (Automated Insights, 2017).

Beyond increased engagement and delighted customers, Yahoo! was able to use Wordsmith to personalize advertisements, resulting in increased monetization. For example, Yahoo! displayed advertisements in partnership with Toyota on its site that featured the logo of the team that boasted the best performance in a given Fantasy Sport league. By being able to automate personalization, Yahoo! was able to earn more from their ad spots compared to standard ads.

Personalized narratives conceivably could be implanted in a wide variety of use cases. The ability to automate writing documents that adhere to a brand's voice could be used to send weekly progress and performance reports, marketing campaign reports loaded with data analysis, market research analysis, and much more. By reducing time spent on labor-intensive and menial tasks, marketers are left to focus more of their efforts on value-adding activities.

Localization

Artificial intelligence can be used as a tool for improving the often-times laborious task of editing and optimizing marketing campaigns to fit local market needs. Localizing a marketing campaign has primarily been used by large brands running multinational campaigns that want to adhere to the norms and customs in a given geographical location. However, both large and small brands alike stand to benefit from localizing their marketing efforts using AI.

Rather than manually localizing campaigns, AI can automate editing of specified variables, such as making a call to action more relevant to a geographical area (e.g., instructing customers to shop a new product release at their specific local mall), changing ad copy to match cultural norms (e.g., catering for individualism in Western cultures by using "yourself" versus catering for collectivism in Eastern cultures by using "your family"), and altering the appearance of the ad content (e.g., generating props or artifacts in a scene of a video to appeal to different target audiences within a campaign). By pairing AI software solutions for creative production such as Adobe Sensei, solutions for campaign optimization and A/B testing such as IBM Watson and Salesforce Einstein, and variety of other solutions that allow for automated video editing or video analysis, marketers can accomplish localization with tools that are already on the market.

Audio Generation

Another aspect of a firm's marketing efforts that stands to benefit from AI-augmented creativity is audio generation. Audio generation includes the ability to create music from a set of songs used as training data, which can then be optimized and edited based on key characteristics (such as tempo, mood, complexity, etc.). For marketers, this capability can make developing marketing campaigns significantly easier and more efficient. Rather than being limited to a

handful of stock audio tracks to use as background for a video campaign, an AI-generated audio track can be created that matches the specific needs of the campaign. Beyond that, AI-generated audio may introduce a number of new ways to optimize campaigns, such as A/B testing not only the copy of an advertisement, but the tempo, mood, and complexity of the background music down to granular details. Music has profound effects on human emotions, so being able to optimize it using AI may hold tremendous value.

Some AI applications already exist that are capable of accomplishing audio generation. One example of is WaveNet, a project of Google's DeepMind that can learn from a training set of songs then automatically generate new music (van den Oord, Dieleman, & Zen, 2016). IBM's Watson Beat allows for the mood of an inputted song to be altered by tweaking its internal data (Shi, 2016). Paired with capabilities for campaign optimization using AI, marketers may soon be able to appeal to the nuanced needs of multiple target audiences with one campaign asset (e.g. YouTube video advertisement or still image with ad copy on Facebook) through automated editing of key attributes.

While AI may be far from being able to generate a discography of chart-topping music consistently, marketers can use AI-generated music to optimize advertisements by featuring music that is tailored to different target audiences. This same theme of personalization through AI-generated creative content can be applied to the copy, imagery, and overall storyline used in an advertisement. By pairing a comprehensive understanding of a customer with AI-powered creative tools, marketers can optimize their campaigns to meet the needs of local markets across the globe.

Image Curation

AI can automate the process of curating images to use in marketing materials and campaigns. Image curation can be used to search intelligently for stock imagery that meets the marketer's criteria by determining whether or not a given image is a good fit for a particular use, then curating collections of images that match the brand's style. Examples of this currently on the market include EyeEm, a company that utilizes machine learning algorithms to automate the process of curating images, and Everypixel, a service that allows for intelligent stock image searches and automated insights into how well an image fits its intended purpose.

Augmentation

AI offers benefits to the creative workflow and facilitating greater productivity in the execution of creative projects. Creative departments can realize the capabilities of AI to automate repetitive tasks involved in producing creative deliverables, thereby reducing the potential for mental fatigue and increasing the productivity of creative employees. A shining example of this is Adobe's Sensei project, an AI-powered division within the company that works behind the scenes of many of its services offerings, such as its popular Creative Suite. AI gives creatives the ability to alter images without distortion in Adobe Photoshop, search intelligently for stock images using aesthetic characteristics such as depth of field and saturation levels, and transition between video clips undetectably in Adobe Premiere. Such tasks would be much more labor and time intensive without intelligent computing applications.

By automating tedious tasks that would take even experienced designers considerable amounts of time to accomplish, we can see how AI can be used to augment the creative process. Less time completing tedious or repetitive work allows for more time to focus on value-adding

activities. There is no competitive advantage inherent in being able to alter an image in Photoshop or transition between two video clips in Premiere. Thus, a technology that automates these kinds of time-consuming tasks offers tremendous value to firms by allowing them to focus their creative efforts in a way that *does* give them a competitive advantage. This reduction in time spent on non-value adding creative activities means truly creative thinking will be of utmost importance in the AI Marketing Era.

The first wave of marketers that are able to implement AI into their creative efforts successfully may realize the first-mover advantage via added productivity. However, creativity augmented by AI will quickly become the industry standard as more and more firms can reduce their creative department's inefficiencies and invest more time into differentiating themselves through stellar creative content. Thus, we can expect to see that the firms that can delight customers with the immersive creative work, interactive content, and personalized marketing materials will rise to the top.

Data Synergy

The structure of creative departments has remained a hierarchical relationship between creative directors, art directors, copywriters and designers for years. Despite drastic transformations in marketing with innovations in digital and mobile, the same structure has remained mostly unchanged. In the era of AI Marketing, the role creative departments play in organizations will be required to change. Cross-functional departments and company-wide transparency of information can allow firms to thrive in an AI-powered marketplace.

Creative departments can no longer be independent silos within a company. By enabling silos within a company, the brand will not be able to actualize the full potential of what AI

offers, such as the ability to predict future consumer behavior to actionable levels of accuracy and the ability to deliver the right creative assets to the right people at the right time. Creative departments must interact fluidly with other business units to facilitate a thorough flow of information and strategic decisions backed by data. Restructuring of the prevailing hierarchical model of creative departments is a necessity to accomplish such dynamic workflow to set employees up for success.

Case Study: Gap One example of this is how Gap used big data to learn more about their customer's behavior and optimize their creative accordingly. In January of 2017, Art Peck, the chief executive officer of Gap, Inc., decided to alter the role of creative director to remedy lagging sales within his company. What Peck hoped for was to restructure Gap in a way that fused creative decisions with the informed insights that big data offers. Creative directors traditionally lead apparel brands. As a major fashion brand executive claimed, "the creative director is God." However, Peck realized that by putting the brand's entire creative strategy in the hands of one person's subjective viewpoint created issues in a slow-growth market being dominated by fast fashion. This old model of following a hierarchy under the creative director was not working with how consumers behaved in 2017.

Gap noticed the omnichannel environment that consumers were living in and recognized that it needed to alter its strategy to personalize content and accommodate for how consumers behave. For example, despite rising trends in shopping for apparel online and through mobile, Gap found that 80% of its customers were still coming into its stores to try clothes on before making a purchase. An omnichannel environment, paired with rising successes of fast fashion brands such as H&M and Zara, meant that Gap needed to shift its focus towards basing its

decisions on consumer preferences generated through predictive analysis. It did so initially by introducing personalized email campaigns, retargeting campaigns, and increasing efforts to track consumer history across channels to offer an omnichannel experience.

Product recommendations are a powerful way to boost revenue. The data trends behind them also allow companies to create new products tailored specifically to their customer base. Netflix is an excellent example of this, as it not only utilizes an archetypical recommendation system to create personalized user experiences, but it also creates unique content, such as movies and TV shows, using consumer data. This model of basing creative decisions off of Big Data trends is what Gap was looking to follow in place of the hierarchical structure that creative directors once commanded (Israeli and Avery, 2017).

Thus, further integration of data with creativity is a necessity for the AI Marketing Era. Through the machine learning algorithms used to power a host of features in the Adobe Experience Cloud, creative departments can analyze customer behavior in real-time, then create personalized content backed by timely insights (Adobe Sensei, 2018). The Adobe Experience Cloud serves as an example of how marketers will have a holistic view of how their customers interact with their efforts in the AI Marketing Era. Putting that power in the hands of creative departments can result in more resources for developing creative content and activities that generate real value for the company. These innovations mean that creative departments no longer need to play a guessing game of whether their decisions are effective or not. They have timely, relevant data available at their fingertips, as well as predictive modeling capabilities that allow them to create content with the confidence that it will perform how they intended.

Chatbots

Chatbots are text-based conversational applications that let a human user talk with a bot that replies automatically to them. They see widespread interest with 95% of executives stating their usage of chatbots will increase in the near future, yet a study conducted by SAP revealed that only 9% of Fortune 500 companies are implementing chatbots (SAP Hybris, 2018). With practical applications in customer service, eCommerce, and more, chatbots are rightly deserving of their peaked interest. Currently, there are two main forms of chatbots. The first are rule-based chatbots that can only respond to specific commands. If the user does not input the correct command, the chatbot is not able to understand the prompt. The second form of chatbots are AI-powered. AI-powered chatbots utilize machine learning, NLP, NLU, and NLG to enable human-like conversations. This form of chatbot learns from past conversations with a user and can assess important information to store for reference in future conversations. AI-powered chatbots are the form of chatbots that I will be looking at in-depth, as they are becoming the standard for business usage (Pratt, 2017).

AI-powered chatbots utilize NLP, NLG, and NLU to understand what a user is saying, then respond like a human. The user types a message to the chatbot, and then it uses predictive analytics and a wide range of algorithms to "generate information proactively" (Nguyen, 2017). The advancement of AI technology to the point where chatbots can respond in a human-like manner and provide relevant, timely information gives customers the ability to interact with brands at all hours of the day.

This form of AI has gained traction considerably in recent years. What once was a technology used primarily for recreational purposes, such as on AOL's now-deceased instant

messaging software AIM, is now widely used in business and accepted by consumers. With more than 30,000 different forms of chatbots available on just Facebook alone and 63% of consumers saying they are willing to communicate with a chatbot from a brand or business (Eaton-Cardone, 2017), this is a unique form of AI that marketers can utilize across many different use-cases. Zendesk reports that adoption of chatbots has increased from 30% in 2009 to 52% in 2013, and customers state having the highest satisfaction rate (73%) using them over other forms of customer service technology like telephone or email (Zendesk, 2016). Looking towards the future, Deloitte Digital cites a prediction from Forrester Research that chatbots will save businesses $8 billion per year by 2022 with consumer adoption at a rate where people converse with chatbots more than their spouses (Robinson, Gray, Cowley, & Tan 2017).

Having an intelligent technology capable of communicating with customers in a human-like manner opens many opportunities for marketers. Chatbots can be utilized to engage customers as soon as they land on a company's website, influence decisions at strategic points throughout the customer journey, and add value and satisfaction to the overall experience. Currently, the core use cases of chatbots in marketing are customer service, eCommerce, and personal assistants.

Customer Service

Chatbots for customer service deal with automating customer service inquiries and are already a widely adopted use case of the technology. They provide substantial value by way of improving customer experiences while simultaneously reducing costs for the company. On the surface, the benefits of this are clear-cut in that having a chatbot to handle commonly asked customer service inquiries minimizes the need for employee labor on these repetitive tasks.

Research has shown that customer service is a critical factor in the satisfaction that customers have with a brand and whether or not they return to do business with them. One study found that 89% of customers would not return to a company if they had a bad experience (BrandGarage, 2018). While having excellent customer service cannot entirely compensate for an inferior product offering or poor service design, having it as a backbone can dramatically improve the customer experience.

There are numerous benefits for how customer service chatbots can improve experiences and garner higher customer loyalty, satisfaction, and retention. For one, chatbots are available for customers to access 24/7. If a customer is struck with panic upon arriving home from work to realize she ordered the wrong gift for her upcoming cousin's birthday party, she can start a conversation with the brand's chatbot customer service agent to get her issue resolved. Rather than needing to fit in the task of contacting customer service during business hours when she is at work, she can handle it at their convenience - a considerable improvement towards brands offering customer-centric experiences.

From the brand's perspective, this leads to happier customers. A customer who can quickly submit a customer service inquiry or complaint is much more likely to hold positive reverence for the brand. Additionally, making customer service more accessible to access by having chatbots available 24/7 means customers who may previously not have issued a complaint or reached out for help can do so easier now. Perhaps the best part of this is the fact they can handle large numbers of inquiries for no increase in cost. Whereas human customer service agents are limited to a finite capacity of working hours, of which they would cost increasingly more for every new inquiry they handle, chatbots offer a scalable solution for

customer-centric customer service. Specifically, Oracle has estimated that chatbots could save companies $174 billion in customer service spending (Oracle, 2017).

Additionally, chatbots seem to be aligned with customer desires. Aspect Software (2016) found that two-thirds of consumers felt good when they did not have to interact with a human customer service agent, and half of the consumers stated they prefer to conduct customer service interactions through messaging. Among students, 90% reported that they preferred to handle customer service inquiries through messaging apps (SAP Hybris, 2017).

The efficacy of customer service chatbots has led to widespread usage across industries. Brands such as Bank of America, Uber, Allstate, Capital One, and many more use this form of chatbot. However, chatbot quality has not yet been perfected. There are still a significant number of people (48%) that state they would rather talk to a live assistant than use a chatbot, and slightly less (33%) mention they are worried they would make a mistake using a chatbot (Drift et al., 2018). Furthermore, chatbot functionality, design, and usability are areas in need of improvement for them to produce consistently positive results to match their lofty level of interest from marketers (J Arnold & Associates, 2018). It is clear that chatbots have not reached their full potential yet, and much more work is needed to achieve adequate conversational UI/UX (i.e., user interfaces and customer experiences guided by conversation rather than scrolling and clicking through a website).

eCommerce

Chatbots can be used for eCommerce to lower the amount of friction involved in shopping with a company. eCommerce chatbots can be designed to make placing orders easier

for customers, guiding them through their shopping by offering smart product recommendations and answering questions they may have.

Like customer service chatbots, having a way to access a brand 24/7 offers tremendous value to customers and brands alike. Harvard Business Review (2013) found that responding to leads within five minutes dramatically increases the odds of them successfully being converted. As such, humans are physically unable to follow up with every lead within five minutes. The automated nature of chatbots can significantly increase the number of leads that become paying customers by immediately providing assistance to them.

Furthermore, purchases can be made directly through eCommerce chatbots as well. As of 2017, a reported 37% of consumers are willing to make purchases through chatbots with average order values averaging around $55 per purchase in the U.S (Eaton-Cardone, 2017). Other studies have returned similar results with 47% of consumers being willing to purchase using a chatbot (An, 2017). These reports are promising, as chatbots will likely continue to improve in upcoming years alongside advancements to its underlying AI technology that make them easier to use and more human-like.

Personal Assistants

Personal assistant chatbots are used to handle administrative tasks such as scheduling meetings, setting reminders, retrieving information to answer questions, or pulling information from the internet into a summary. These kinds of chatbots have a variety of different use cases and can be used internally within a company to manage employees, client-facing to schedule meetings with clients in a business-to-business setting, or consumer-facing as an individual personal assistant.

The areas where personal assistant chatbots can add value to a business are similar to customer service and eCommerce chatbots. By having automated, 24/7 access to a company, employees can have their questions answered anytime they may need. For example, a service provider like Spoke offers the chatbot form of a human resource employee that can quickly retrieve useful company information for employees whenever they need.

For client-facing usage, personal assistant chatbots can cut down on administrative tasks that can often take up valuable employee time. Conversational-style project management chatbots can allow marketers to invoice clients, schedule meetings with them, conduct interviews for new hires, and keep in contact with clients to ensure stellar client experiences.

However, personal assistant chatbots may not be an ideal solution for many use cases. Many of the tasks that could be automated using a chatbot are at a level of complexity that would make trying to accomplish them through typing back and forth with a chatbot a frustrating experience. For example, a task that a chatbot used for project management may encounter in a client-facing situation could require getting in contact with multiple people from different companies. Having the employee make a few calls would be considerably easier than using the chatbot. Chatbots in their current state are best used for simple tasks, while complex jobs with multiple moving parts are still better to be handled by humans.

The efficacy of personal assistant chatbots has not been demonstrated. In January of 2018, Facebook announced the discontinuation of its chatbot project, M. Evidently, the 2,000 people that had a chance to test it in beta found little use for it in their day-to-day lives. With that said, personal assistant chatbots could benefit from being integrated with voice capabilities that would allow them to avoid substitution with already-popular voice assistants like Siri.

Chatbot Management

As of 2016, 61% of consumers think chatbots are here to stay (Aspect Software, 2016). We can expect chatbots to continue improving alongside rising quality levels in NLP algorithms and AI technology. As chatbots improve, they can handle more complex tasks in a way that mimics human nature. Given the increasing rate of adoption of chatbots, marketers will need to focus on how they can best manage the technology to retain control of the brand experience and ensure they see the full benefit of what chatbots have to offer.

Controlling the Brand Experience VentureBeat reported that 75% of customers "want to know when they are talking to a chatbot" (Eaton-Cardone, 2017). Thus, it is critical for marketers to be transparent in their usage of chatbots, whether they are for customer service or eCommerce. Beyond the simple fact that consumers wish to be informed when they are communicating with a bot, it is important for them to know this if an error occurs with the bot. For example, Microsoft's chatbot "Tay" was evidently trained with low quality, biased data, as it was delivering racist Tweets just one day after being launched (Gadiyar, 2017). Microsoft's intention to create a chatbot with a teenager's personality resulted in a horrible brand image.

As chatbots and conversational interfaces become more prevalent in business, they will become a very distinct touch point of a brand. The more a customer interacts with a brand's chatbot, the more it starts to represent the brand itself. Thus, it becomes increasingly important to train and manage chatbots in a way that is congruent with the brand itself. Improving NLP and machine learning algorithms will soon allow for chatbots to communicate using the brand's personality and voice, allowing for delightful and personalized customer experiences at scale. Companies will need to focus on training their chatbots with data from a variety of company

information sources to ensure the bots are communicating accurate information and are doing so in a way that is congruent to the brand's voice.

Context and Handoff Customers become frustrated when they feel they are restarting their conversation when they are transferred from a chatbot to a live agent. A resounding 80% of users reported that they expect their entire communication history with a brand to be immediately available to chatbots or live agents (Aspect Software, 2016). Thus, it is vital for brands to ensure systems are in place to handle seamless handoffs from bot to humans. Doing so will allow for better customer experiences through increased contextualization and personalization, lowered customer frustration, and reduced costs for the company due to greater operational efficiency and scalability through being able to handle more customer requests at marginal cost.

Beyond contextualization and efficient handoff from chatbot to live agent, customers demand the ability to contact a live agent at any point during the conversation (Aspect Software, 2016). AI technology is still in a state of relative infancy. Consumers are still skeptical of how effective chatbots are at handling complex tasks and private information.

Personalized UI and UX

The ability for AI to personalize customer experiences at scale can be applied to the user interface (UI) and user experience (UX) design. By integrating AI into how customers interact with brands online, businesses can be able to optimize their websites in real time and adapt to individual consumer behaviors. As such, personalized UI and UX are applications of AI with tremendous potential.

Companies like Netflix, Google, Facebook, and Amazon all utilize intelligent product recommendations and real-time personalization based on user behavior to make for more relevant experiences. A specific example of this is seen with personal-care brand Nivea. Using Alibaba's robust personalization capabilities, Nivea has been able to tailor its customer experience around previous behavior. By introducing first-time visitors to low priced offerings to promote engagement with the brand and exposing fans to high-value baskets of items to increase average order size, Nivea has been able to grow its conversion rates by 70% and increase transactions by 150% (Abraham et al., 2017).

Marketers can realize a tremendous benefit from this application of AI by providing more relevant experiences for their customers. Through services like Optimizely and Convert, marketers can develop highly customized online experiences that change in real-time based on the customer's behavior. Doing so provides them with the content that is most relevant to their needs. If a customer had previously viewed a pair of shoes on a website, the next time she visits she will be greeted with content related to footwear or the specific product she was viewing. Rather than being exposed to marketing messages that are irrelevant, the customer will see content specifically designed for her needs. The benefit of real-time personalized UI/UX is tremendous for brands as well, as they can keep their customer's attention longer and see increased conversions. Such was the case with Ustream, a client of Optimizely (n.d.) who experienced a 12% jump in clicks on its homepage after optimizing using only 12,000 visitors.

Personalized UI/UX means more than just personalized customer experiences as well. AI-powered optimization can be accomplished using relatively small sets of real-world test data. If a brand is looking to roll out a new product, it can test a multitude of different factors in their

marketing communication to see which perform best in the real world, then optimize its efforts accordingly. Aspects like the banner designs of an eCommerce site, color schemes, button positioning, page layout, and more can all be optimized using this form of AI-powered A/B testing. Rather than playing a guessing game of whether its choices will perform well or if the results from a focus group will translate into market performance, brands can test immense numbers of different combinations to find which delivers the best results.

Voice

AI applied to voice applications is already in the hands of millions of consumers, yet still holds tremendous untapped potential. From frictionless shopping to the changing dynamics of search engines that personal assistants such as Siri and Alexa cause, voice is increasingly becoming a prominent tool for marketers to integrate into their efforts. AI-powered voice technology is already in use by 500 million people as of 2016 (Hull et al., 2017), and is projected to make up 50% of all searches online by 2020 (Olson, 2016). As of 2016, voice search has been adopted by 55% of teens and 41% of adults as well (Iwasiuk, 2017). While currently a niche topic for marketers to implement practically as a focal point of their IMC efforts, voice holds tremendous potential for allowing brands to interact with consumers in a way that is more natural to how humans behave and communicate.

Searches conducted by voice are different than by typing. A study conducted by Search Engine Watch revealed that searches conducted using voice are over twice as long than text searches on average (Tabeling, 2014). Evidently, searching by voice allows consumers to be more candid rather than focusing on refining searches down to a few keywords to meet the requirements upheld by text search engines. We may see the way consumers search for

information become more candid, which holds implications for how brands tailor their content online to be crawled by search engines.

Consumers may wish to utilize voice to retrieve particular information, thus hoping for both the convenience of not needing to type long sentences with the expectation of accurate, relevant results. A study by Google Research (2010) offered insights into how voice search is likely going to be used in the years to come. This study mentioned that voice searches tend to be "on-the-go" searches for topics related to local businesses and information needed on the go and was not used for sensitive information such as adult topics or medical information. Brands may benefit from keeping confidential information on strictly text-based interfaces while allowing customers to search for more general information using voice.

Personal Assistants

Personal assistants are currently the central area of focus when discussing applications of voice AI. Siri by Apple, Amazon Alexa, Google Home, and Microsoft Cortana are all examples of personal assistants that are widely available on the market. Given their widespread adoption, personal assistants represent a crucial tool for marketers to leverage when considering adding voice to their marketing communications mix. Millions of people are already using them, yet marketing has yet to tap into the potential of this new channel.

Advertisements

Currently, advertising within personal voice assistants has been a topic left untouched. With Gummi Hafsteinsson, Google Assistant product lead, stating how they "haven't shared details on advertising within the Assistant up to this point" in mid-2017 (Heine, 2017), marketing is at the forefront of a massive advancement in advertising capabilities. Paid search and ad buys

represent a market size projected to be worth $16B by 2021 (Pestanes and Gautier, 2017). Considering advertising within voice assistants has not yet surfaced as a viable, it is difficult to say how much that valuation does not take into account the potential for paid search and ad buys for voice searches.

Only a handful of companies have attempted to crudely integrate voice ads into their marketing efforts, such as Burger King changing the Wikipedia definition of a "Whopper Burger" to become ad copy that is delivered when someone asks a virtual assistant the question "what is a Whopper burger?" (Kastrenakes, 2017). This attempt to manipulate voice assistants only scratches the surface of what may be possible in the very near future.

Voice advertisements may become a crucial component in marketers' overall strategies. In 2017, search was the largest component of digital advertising at 46%, worth around $90.7 billion worldwide (Ironpaper, 2017). If the prediction that 50% of all searches will be conducted using voice by 2020 comes to fruition, advertising through voice may someday earn a similar valuation. It may take time for business advertising through voice to be implemented at scale and for consumer adoption of voice searching to become as prevalent as text search. However, even pessimistic estimations of voice search adoption should make it a promising endeavor for marketers to pursue.

Impact on SEO

The rise of voice AI through personal assistants has begun to shift how consumers search for information online. In 2013, Google announced the launch of Google Hummingbird, an advancement that allowed their search engines to focus on the implied meaning of a search query in addition to the keywords provided. This milestone has been regarded by SEO experts as one

of the most significant search update since 2001 and has since been the standard that consumers expect when they search for information online. Powered by NLP, Google Hummingbird facilitates human-focused experiences online by bringing a sense of empathy into technology.

To improve upon Hummingbird, Google introduced AI-powered RankBrain in 2015. These improvements to the algorithms behind Google's search functionalities have provided the infrastructure to allow for voice searches to happen. With that said, marketers face an entirely new dynamic to how they optimize for search as we enter the AI Marketing Era. Adoption of voice search has been steadily increasing, which means marketers should place optimizing their content for how users search by voice as a top priority.

A brand that is optimized for voice search is one that formats its web content for long-tail keywords (i.e., keywords that include 3 or more words to target niche searches rather than generic keywords) and direct queries. Users do not use voice search in the same way they do text. Voice searches are typically made with an informal tone and ask specific questions, so long-tail keywords can allow brands to see a boost in their search rankings.

Voice search gives marketers a new outlet to boost their search rankings by way of facilitating better user experiences as well. Google places user experience as a key determinant in a site's ranking on search engine result pages (SERPs). Fortunately, voice search can make finding relevant information considerably easier for customers if marketers take the necessary steps to optimize their web presence accordingly. SEO practices have aligned with this emphasis on user experience in recent years, so brands that have already laid the groundwork will have a head start over brands with clunky, frustrating websites. Investing time into optimizing digital presence will become ever more critical for brands in this latter category.

Brands should focus on organizing their web content from the perspective of their customer. Applying empathy to user experience design will help optimize for voice search by 1.) clarifying the business's value proposition to avoid confusion about what it provides, 2.) simplifying the brand's marketing messages to clearly articulate its value proposition, 3.) anticipating direct query-style questions, and format content accordingly (having answers to any and all questions asking who, what, where, when, and why easily accessible on the site), 4.) providing any relevant details about product and service offerings on an FAQ page, and 5.) strategically producing marketing materials optimized with long-tail keywords to boost search rankings for nuanced, specific voice search queries.

Commerce

One shining contribution of voice in AI Marketing is its ability to reduce the friction for consumers to make a purchase. Proponents of voice-activated AI like marketing entrepreneur Gary Vaynerchuck (2017) paint a picture of how frictionless voice AI allows commerce to become. By speaking "Hey Alexa…" followed by the order details, customers can shop as quickly as they would have a conversation with their friend. No more manually scrolling through a website to find all of the products one needs, no more abandoned carts, and certainly no more driving to a local store to physically locate the products then stand in line to check out. As idealistic as this may sound, this capability is already on the market. Voice-activated assistants such as Amazon Alexa and Google Home are already programmed with skills that allow users to place orders as frictionlessly as one could imagine.

As of 2017, 35% of people using voice assistants use them to make purchases. This same group of people expects to spend 18% of their total expenditures using voice assistants three

years from now, in comparison to 37% of their spending through websites and apps (Buvat et al., 2018). Furthermore, 73% of people who currently use voice assistants have purchased with it (Invoca, 2017). Seeing that voice-activated shopping is already being adopted, its relevance to marketers will soon become increasingly important.

The implications of voice-activated shopping may prove incredibly disruptive to marketing within the next five years (2023). The ability for AI to make shopping frictionless could pave the way for an entirely new landscape akin to the rise of online shopping. The ability for a marketer to get their brand to be the first result that voice assistants suggest will become a cut-throat competition in such an environment. By taking away the emphasis of scrolling on one's mobile device or computer screen and replacing it with a hands-free interface, customers are more likely to follow through with whichever product is the first to be suggested by their voice assistant. The voice command of "buy more toothpaste" could drive business to whichever brand is the top result at an exponentially higher rate than brands that are only a couple spots lower. Keeping in mind the rise in the omnichannel personalization of experiences, customers will likely retrieve different search results based on many different data points. Customers who prefer organic brands will likely be shown different search results than customers who prefer low-cost brands. Nonetheless, as Google changed the dynamic of finding brands through text-based search queries to favor brands on the first page of search results, voice-powered searches may disproportionately favor brands positioned as the first or second result.

The efficacy of reducing friction for customers to place orders is exemplified through Amazon Prime. As of 2016, Amazon Prime members spent twice as much with Amazon compared to non-Prime members (Pate, 2017). Citing benefits such as low prices and fast and

free shipping as leading factors on eCommerce purchase decisions (Riter, 2017), consumers demonstratively spend more with companies that make purchasing from them as frictionless as possible. Thus, voice-activated commerce opens a door of opportunity for brands.

Using Amazon as an example again, its voice assistant Amazon Echo has already helped it gain a larger wallet share from its customers. Echo users typically make 6% more purchases and spend 10% more than the average Amazon customer (Accenture, 2017). By making purchases as frictionless as possible, brands can earn loyalty and a larger share of wallet. This results in a positive spiral effect as customers begin to increase both the frequency and amount in which they spend with their brand of choice. As such, voice-activated commerce holds the potential for a massive change in dynamic for how consumers shop.

Phone

In addition to voice assistants, phone calls have increasingly been used as a consumer touch point in recent years. A study conducted by Invoca (2017) revealed that as voice assistants have increased in popularity, phone calls to businesses have increased by 24% as well. Additionally, Invoca's projections show that 52% of communication with companies will be through voice over the next two years, whether it is through voice assistants or phone calls. It is evident that voice assistants have already altered how consumers wish to interact with businesses, shifting the status quo away from typing and towards speaking. It thus stands that customer interactions via phone are important for businesses to track, analyze, and optimize for into their marketing efforts.

Research has shown that customers resort to phone communication when they don't feel comfortable using a voice assistant. In such instances, phone calls are preferred 24% more over

voice assistants when making a complicated purchase, 18% more when sharing private information, 15% more when making a purchase of $500 or more, and 12% more when making a purchase that requires customization. While these forms of phone conversations currently need human involvement, we may see them become automated through AI as it becomes increasingly human-like in cadence and ability to understand conversations on a deep level.

Furthermore, the data produced by phone conversations may see even more relevance to marketers in the AI Marketing Era. Invoca's research (2017) has shown how phone calls are typically a preferred method of interacting with a brand after a customer has done preliminary research and is ready to buy. These customers are highly qualified leads that are much more likely to follow through with a purchase, and represent a market size of $1 trillion. With that said, the ability to understand and interpret the data generated by these phone calls can be of tremendous value to marketers. Advancements in NLP technology allow this form of analysis to happen at scale, as seen in the service offering of companies like TalkIQ. Being able to conduct an in-depth analysis better than ever before means marketers can reap newfound benefits in the familiar format of phone conversations.

Pitfalls of AI and Areas of Improvement

An objective analysis about AI in marketing cannot be had without examining its negative aspects. Given its state of relative infancy, AI has many unsolved issues that will need to be thoroughly addressed before mainstream adoption. Of these issues, AI for malicious purposes, its effects on job displacement, its impact on wealth distribution, and flaws in its underlying technology are some of the most urgent concerns.

Malicious AI

The potential for AI to be used for malign purposes is arguably the most catastrophic risk. Intelligent computing systems carry the potential for a myriad of malicious uses, of which I will touch on the risks most relevant to marketing as a full discussion about the topic would require an entire paper of its own. Where we face issues with malicious AI is in many of the same areas it provides benefits. By being able to process and analyze data in real-time, AI can fool unsuspecting victims and gain access to highly sensitive information. In the same way, customers can be delighted with highly personalized marketing messages in the form of a newsletter, for example, a person using AI in a malevolent manner could trick a customer into entering their financial information through a fraudulent system.

This idea of "phishing" is not new and currently affects customers around the globe. As AI continues to become more advanced, however, we may see phishing strategies become increasingly complex and harmful to brands and consumers alike. For example, a scammer that obtains data on customers' past shopping histories with a brand could easily create personalized phishing schemes that are incredibly convincing and lead to larger numbers of people forfeiting their financial information.

Similarly, AI increases the susceptibility of brands getting hacked and having private data stolen. Advanced intelligent computing systems give scammers greater power to steal private information from companies, which places even greater importance for brands to bolster their cybersecurity efforts to retain the trust of their customers. If a scammer can hack into a company's database multiple times, customers may quickly become apprehensive to continue

doing business with them no matter how loyal they have been over their lifetime shopping with the brand.

Furthermore, the threat of impersonation is one with incredibly destructive consequences if executed properly. Advancements in image recognition, facial recognition, speech recognition, and many more facets of AI have allowed for hyper-realistic fabrications of people, videos, and sound bites that never actually happened. In just four years, the ability for AI to fabric photorealistic images of people has gotten remarkably advanced (see Appendix B.)

Paired with the capability for AI to create realistic sound and video clips, there is a grave danger of a malevolent individual being able to fabricate stories and accusations about people or brands with great accuracy. Brands may face PR issues with customers falsifying events using fake pictures, audio, or video created by AI. The damage that could be done by such actions could be horrific.

Likewise, the issue of fabricating fake social media accounts to inflate perceptions, scam individuals, or sway public opinion could have far-reaching effects, some of which we have already witnessed during the 2016 Presidential Election. Russia admitted to creating 50,000 fake social media accounts that were used to post automated content regarding the election that featured a resounding positive sentiment towards candidate Donald Trump (Swaine, 2018). While the exact effect that this had on Donald Trump winning the 2016 Presidential Election is uncertain, the mere act of a major world nation implementing such a strategy is an urgent alarm to take preemptive measures of prevention.

The factor of using fake social media accounts to inflate one's follower count has been in play for years. While the idea of a business purchasing counterfeit followers on social media may

seem harmless, the deceit such an act entails should not be taken lightly in the era of AI Marketing. AI will more than likely be indistinguishable from a human online by around 2025-2030. This will make it even more difficult to delineate what is real and what is fabricated. Following this chain of thought, brands could easily use fake social media profiles to spread positive word of mouth or dilute the visibility of real, negative posts by having fake profiles post positive things about a brand. At its best, this would be incredibly deceitful. At its worst, this could be used to trick people into purchasing from a brand that is not marketing what it is selling in an accurate manner.

Malicious use of AI is a difficult problem to approach. We cannot expect to fix the whole problem by enacting preventative legislation, as malicious actors are already likely to disregard authority and laws. Nonetheless, legislation that enforces strict punishments for malicious use of AI is certainly one part of the solution. Another part may be creating systems that are capable of detecting fraudulent AI activity. An iteration of this idea that uses highly encrypted security measures to create a permanent record of activity on social media platforms would make it considerably easier to both prevent fraudulent activity in the first place and also locate its source (as is the idea behind blockchain technology). By developing advanced tools that can identify the source of a fabricated activity as well as implementing strict legislative measures to prevent malicious use of AI, we may be able to avoid its negative impact on marketing.

Job Displacement

Even when AI is used for its intended purposes in marketing, the issue of job displacement is still a critical component to address before the technology's widespread adoption. Fortunately, marketing is an industry that is ripe to see benefits from AI as many of its

use cases involve augmenting work to free up more time for value-adding activities. However, there are still many aspects of marketing that may undergo automation and job displacement.

In December of 2016, the White House released a report analyzing the role AI and automation play in the economy. The report included the staggering statistics that “83% of the jobs where people make less than $20 per hour will be subject to automation or replacement," and “between 9% and 47% of jobs are in danger of being made irrelevant due to technological change, with the worst threats falling among the less educated” (Furman et al., 2016). While these statistics refer to the U.S. economy as a whole (including many manufacturing jobs that have already seen mass automation), their implications still bleed into marketing. Jobs within marketing such as market research analysts, media buyers (as has already happened with programmatic), and telemarketers stand to face automation from AI given their repetitive nature.

However, marketing is both creative and analytical, so human intervention will still be required to both operate AI systems and lead the strategy and direction for everything that AI operates on. In a way, automation of menial tasks places greater emphasis on jobs that highlight human qualities such as creativity, strategic thinking, and empathy, which could result in increased job satisfaction. Jobs that utilize these “soft-skills” of humans will stand to benefit from being able to augment the repetitive aspects of their jobs to give them more time for what they perform great. Marketing managers, developers, designers, executives and many more jobs will all be able to use AI for its vast array of potential uses and actualize tangible benefits without fear of job displacement anytime soon.

Given the vast potential benefits that AI brings to marketing, I believe reframing the conversation around AI and job displacement is necessary. Job displacement from AI in the

economy as a whole is undoubtedly a severe issue in need of being addressed, and AI may displace marketers with repetitive, labor-intensive job roles. However, the number of jobs that AI creates may outnumber the amount that it displaces. People will need to be hired to manage various aspects of the AI systems. Economic gains from the increase in productivity can facilitate business growth and increase hiring as a result. Quantitatively, 83% of firms who have implemented AI at scale have reported the creation of new jobs as result of AI implementation, and 63% said that no jobs were destroyed in their firm from AI (Stancombe et al., 2017).

Nonetheless, additional issues involving the full-scale implementation of AI in marketing could surface if left untouched. AI is a sophisticated technology and field of study. While this allows for incredible capabilities to drive business performance, it also may act as a barrier in preventing front-line employees from being able to manage the systems that may replace their job. The jobs that AI is likely to automate are often entry-level ones where employees are less likely to have high-level experience and knowledge regarding computer science or data analytics. As such, the jobs created through AI may be inaccessible to anyone without advanced schooling and experience with computers on a technical level.

Given that executives, managers, and many employees with roles involving high-level strategy will likely not see their jobs be automated, the issue of AI in marketing may be less about job displacement and more about job accessibility. If AI is implemented at scale throughout the marketing industry and continues to see successful results, a dangerous situation could occur involving the automation of entry-level marketing jobs with only advanced, highly-technical replacement positions available. This issue requires proactive measures to be taken.

The workplace of the AI Marketing Era will likely require a different skill set compared to today. AI being able to accomplish tasks that are repetitive and data-driven means the ability for humans to be adept with rote skills will become a less valuable skill. Humans cannot outperform AI with tasks relating to complex calculations and massive computations. Thus, the qualities of human employees that add value to the workplace in the AI Marketing Era should be innately human. Skill sets that are rooted in emotions are part of the human marketers' core value proposition. Creativity, empathy, and the ability to feel emotion are all qualities that can allow marketers to not only prevent their job from being automated but to thrive in an environment where the power of AI can be harnessed to augment tasks and free up more time for higher level, value-adding activities.

Teaching marketers skills relating to creativity, empathy, and other emotions can start by facilitating lifelong learning. Knowledge is more accessible than ever before through countless resources on the internet. By instilling values of proactivity and lifelong learning, marketers can bolster their knowledge base and improve their cognitive frameworks to thrive in the AI Marketing Era.

Underlying Technology

A roadblock for AI (in particular, machine learning) is the fundamental nature of how it operates. Currently, a massive amount of data is needed to create a reliably accurate AI system, even to be effective at basic tasks. This prerequisite presents a barrier to firms of all sizes, particularly small businesses. While low involvement AI can still be implemented in these firms, the full potential of AI can only be harnessed by firms with the resources to train more robust systems. Granted this could be counted off as a benefit for larger companies for having grown

their businesses effectively, but this uneven distribution of technology may create stark competitive barriers for smaller companies.

Beyond its impact on preventing a fair competitive landscape, AI's over-reliance on data represents a fundamental inefficiency in the technology. Many discussions regarding advancements in AI that have been made public over the past few years may lead some people to doubt whether the technology is even remotely "intelligent" in comparison to humans. For example, you wouldn't have to show a child 10,000 images of a dog for them to learn it's a dog. Humans have adopted heuristics that allow us to take mental shortcuts and process information much faster. For AI to deliver on its promise of replicating human intelligence, it will need to adopt similar shortcuts for learning. Improvements to the technology need to be made that allow AI to learn with less data before it is a practical solution for marketers.

Developments have been underway for years to improve this flaw of AI. The Bayesian program learning framework (BPL), developed by Brenden M. Lake, Ruslan Salakhutdinov, and Joshua B. Tenenbaum (2015), allow for an AI system to replicate human-like behavior after being exposed to just *one* dataset. While not yet perfected, the BPL framework is an exponential improvement over the massive data requirements of deep learning algorithms.

Gary Marcus is also working to improve the efficiency deep learning algorithms with his company Geometric Intelligence. His XProp software was able to recognize numbers at an error rate of 0.2% after being exposed to just 150 examples, as opposed to the 700 examples needed for a deep learning algorithm to accomplish the same task (Simonite, 2016). Despite its performance in recognizing handwritten numbers with an error rate of 0.2% not even being an

improvement on current deep learning algorithms, Marcus' software puts AI technology a step closer to being less reliant on massive amounts of data to be effective.

More recently, an increasing number of AI developers have recognized the inefficiency of how much data is needed to power AI and machine learning. As Charles Bergan, vice president of engineering at Qualcomm, said at an MIT Technology Review conference in January of 2018, teaching algorithms using "one-shot learning" would represent a massive shift in the direction of AI. Traditional AI developments have taken a white-knuckling approach by trying to make stronger computers. One-shot learning would shift the focus to creating more efficient algorithms (Sun, 2018). On this same note, work is being done to reduce the size of neural networks without reducing accuracy.

Efforts to improve AI algorithms tackle critical issues that the technology faces. For AI to be a useful tool for marketers, it will need to interact seamlessly with the rest of an organization to provide value. Firms will be fighting an uphill battle to actualize a positive ROI on an AI system that costs an astronomical amount to implement. For AI to be a practical solution to automating menial tasks, it will need to become more efficient in how it learns. These forms of "lean" AI systems should serve as a benchmark for progression of AI technology. AI systems that can learn using minimal amounts of data, then adjust on the fly using minimal amounts of potentially low quality, unstructured data would represent an advancement in the technology that could greatly improve its efficacy for marketers in firms of all sizes.

Where Marketers Should Go

AI holds incredible potential for shifting the entire landscape of marketing. Even in its state of relative infancy, AI applied to marketing has already proven to be incredibly useful for

delivering an impactful ROI. This fact alone means it deserves focus from marketers *now* regardless of how urgent their plans to begin implementing AI are. By being proactive, marketers can be ahead of the curve before customers undergo changes in their expectations from how brands market. This section will serve as a starting point for individuals and companies to gauge how they should approach AI implementation. This section is divided into two perspectives: the individual and the company. I start with the perspective of the individual, as AI will transform the manner in which marketers do their job and addressing how to best prepare for this change is critical to the success of company-wide AI implementation.

The Individual's Perspective

Historically, technological innovations have had a defining effect on humanity. Our tendency to organize periods of history based on prominent technological innovations that occurred (such as the agricultural revolution, the industrial revolution, and so on) is illustrative of their impact. These innovations often shift the way we operate as a collective society, as historical examples illustrate.

The Industrial Revolution in America serves as an archetypal example of how the effects of technological innovation can permeate throughout many aspects of society. The period of the late 1800's to early 1900's brought about widespread change via innovations in machinery that allowed for more work to be done. It was during this period that America shifted from a majority of citizens being employed in low yield occupations (e.g., agriculture or craftsmanship) into an industrial model focused on transmuting raw materials into sellable goods. The machinery that facilitated such transmutation of materials fueled this fundamental change in the American economy, which had far-reaching effects beyond economic output.

Factories that had spawned from widespread adoption of mechanical machinery were designed to be as efficient and productive as possible. The increased output from these factories created the need for management - a concept that was unnecessary before the Industrial Revolution. As companies scaled during this time, standardization of processes, workplace organization, labor allocation, and quality control become areas of focus as knowledge about what business practices yielded best results spread. By all means, these innovations were positive events overall. However, the mindset they insinuated of viewing employees as tools to execute tasks was proven to be an ineffective way of tapping into every employee's full potential. Management styles such as Donald McGregor's "Theory Y" moved management forward towards valuing engagement of employees to generate value (McGrath, 2017).

Evidently, many think that we find ourselves in a time requiring new models for viewing the role that employees play in companies. This shift in perspective of the workplace is further true for marketing. The workplace of the AI Marketing Era will need to be designed to empower human traits rooted in emotions. Empathy, creativity, and strategic thinking are the traits that AI Marketing workplaces will need to manage. AI makes the idea of employees being used merely to execute tasks evermore irrelevant. The current workplace values put in place during the Industrial Revolution (many of which are still around today) are outdated given our current technological capabilities. Thus, the traits that marketers must have to thrive in an AI Marketing workplace involve being able to empathize with other humans to provide them with more value, building meaningful connections with them, and offer relevant solutions for their lives.

Creative thinking skills will increasingly become sources of differentiation among marketing employees, and building such skills offers a way to thrive professionally alongside AI.

This encompasses many ideas, such as discovering new ways to use technology to engage with customers, improving creative assets for campaigns, the high-level strategy to lead brand direction, assessing ways technology can be integrated into a brand to bolster its positioning in the market and many more. Creativity applied to marketing in a holistic sense offers opportunities for significant value creation.

The Brand's Perspective

In the current state of AI, companies will need to approach implementation strategically. Some firms should pursue implementing high involvement AI as soon as possible to capture and sustain a competitive advantage in their market. Other firms should learn about the technology and test the efficacy of lower involvement AI before investing in robust technology soon. Many firms may expect to implement a handful of low involvement AI solutions with no full-scale implementation until barriers to entry have reduced significantly years from now.

There is no "one size fits all" solution for AI implementation at the moment. Similarly, companies can make the mistake of assuming AI will solve all of their issues when the technology can only accomplish as much as its operators direct it. In the future we may see dashboards or software-as-a-service (SaaS) solutions offering robust AI software that meets any company's AI needs in a similar way Wordpress provides web hosting and development for firms of all sizes. Until then, the choice to implement AI is bespoke, and firms must know what they want out of it before even considering full-scale implementation.

The first step towards implementing AI within a company is to assess its current state objectively. Upper-level management will need to take into consideration a multitude of factors to gauge 1.) their state of readiness to implement any of the AI Marketing solutions currently

available, and consequently 2.) what level of involvement AI should play within their company using the scale of low to high involvement as a reference.

Readiness Framework

Resource Availability

Budget for implementation

- Understand the firm's financial situation. How large of a budget is available to implement AI? Consider costs for sourcing the AI through creating bespoke systems or paying a third-party service provider, as well as the cost of managing it day-to-day and if something goes wrong. If the costs would place a considerable burden on the firm's financial state, consider: 1.) waiting until either more funds are available before implementing higher involvement AI, 2.) waiting until AI technology lowers in price, or 3.) using low involvement solutions applied to smaller tasks (such as licensing a rudimentary chatbot to handle basic customer service requests instead of a robust, omnichannel personal assistant chatbot that gives customers highly personalized experiences).

Labor

- Are there employees in the firm that are qualified to manage the AI day-to-day, or will AI experts need to be hired? Depending on the level of involvement AI plays in the firm's core operations, many people may need to be brought on to manage and implement the AI systems properly. Low involvement solutions may not require hiring any new employees, but would still require reallocating employee responsibilities. Additionally, hiring expert-level AI talent is currently a difficult task.

AI experts will be costly to hire and should be brought in only when the company has a clear vision of how AI will be implemented in its operations. The supply of data scientists is estimated to be far less than required for firms implementing AI by 2024 (Henke et al., 2016).

Availability of data

- Does the firm have ample amounts of digitized, quality data available already? Understand how AI is expected to play into the firm's goals, then make sure a sufficient amount of data is available that pertains to those goals. If small or no amounts of data are available, the firm will be limited to utilizing low involvement AI solutions rather than creating customized, bespoke systems.

Marketing Objectives

Day-to-day operations and immediate goals

- What are the firm's daily marketing activities? What are its short-term marketing goals? Map out how these activities interplay with each other using a service blueprint to identify all potential roles AI in which could be integrated.

Pain points and areas in need of improvement

- What are some daily activities causing issues for the firm? Are employees commonly working on tasks that prevent them from utilizing the full extent of their skill set? What portion of the firm's workload consists of lower-level, repetitive tasks? Analyze systems and procedures using the 80/20 analysis to determine which 20% of activities take 80% of the time, and which 20% of operations cause 80% of the frustration.

Which core set of activities would alleviate operational pain points if improved upon, and how drastic of an effect would addressing these pain points have?

Long-term strategic goals

- Where is the firm heading, and how do its marketing efforts support that trajectory? Clarify long-term objectives to see how AI can be used to help achieve them. Consider how vital a role AI should play in the firm's long-term marketing strategy in light of macroeconomic trends 5-10 years from now.

Value creating activities

- Internally, what are the core activities that allow the firm to create value for its customers? Externally, how do customers perceive the brand? Are there any differentiating product or service offerings that would enable the firm to command premium pricing? Analyze the activities and offerings using the 80/20 analyses to determine which 20% of product/service offerings generate 80% of profits and which 20% of internal activities/operations create 80% of the firm's value. Doing so will give a better understanding of how AI can play a role in improving upon the firm's main sources of value.

Marketing mix allocation

- How much of a role should AI play throughout marketing operations? Are bespoke programs needed, or would low involvement AI serve as a suitable entry point until more robust systems are required?

Implementation

The factors above can help determine the degree to which a firm may want to implement AI if they even should yet. The decision of whether a firm decides to implement AI now, in the distant future, or never is a highly strategic one that can have a dramatic impact on their success. Thus, marketers will need to think proactively to understand the risks and opportunities associated with their decision. As co-founder of Wired Kevin Kelly states (2017), "every company these days is basically in the data business, and they're going to need AI to civilize and digest big data and make sense out of it—big data without AI is a big headache." The introduction of digital marketing created an abundance of consumer data. For firms where data plays a crucial role in the success of their revenue-generating activities, AI is an inevitable next step to actualize their potential. However, blindly adopting AI will yield poor results if no goals, plans, or systems are in place to ensure success. Firms seeking high involvement AI solutions will need to customize their systems to meet their needs, and having a clear end-goal will allow this to happen.

Requirements

The level of involvement at which a company decides to implement AI correlates to the totality of resources needed to begin. Given the lower resource requirements and characteristic of lessened importance to the company's core operations seen in low involvement AI, there are many solutions available for marketers to implement right away. Low involvement AI typically uses subscription-based or one-time fee pricing models, making it easy to accommodate for cost-wise. Furthermore, low involvement AI is less complicated than high involvement AI. Firms can test AI implementation with lower involvement solutions before fully committing to

expensive systems. By using low involvement AI, firms can understand how they may need to reorganize their company structure to accommodate for AI and its cross-department data synergy requirements, how AI will play into their day-to-day operations, and how they will need to train or hire employees *before* investing in expensive systems.

Introducing full-scale implementation AI into a company is a costly procedure. For reference, we can look to the process that machine learning software provider Azati Software (2017) describes as a typical project sequence. Keep in mind; these costs only account for the development and installment aspects of AI implementation - firms can expect many more costs to arise. The process of implementing AI within a company is innately bespoke, and expenses will differ significantly between companies. A discovery phase is conducted to determine feasibility and establish business objectives. This initial step requires the company to have all of its data and processes prepared ahead of time, but is conducted free of charge by the software provider. From there, a prototype is developed for around $25,000 to establish proof of concept. After the prototype is complete, a minimum viable product (MVP) is created from around $35,000-100,000 depending on the project size and complexity. Finally, the final product is produced at a price that is entirely dependent on the project's exact specifications but is likely to be higher than the cost of the MVP with prices ranging between $100,000-300,000 typically.

Beyond the upfront costs estimated by Azati, additional fees can incur if specifications are not met, as commonly seen with data issues. The quality of data provided by the company is pivotal to the performance of the end product. Without quality data, the company runs the risk of inaccurately training their AI or being forced to purchase third-party data at the risk of it not providing information relevant to their marketing goals.

Many factors play into the cost a company may face to implement high involvement AI into their company. A sophisticated chatbot may cost between $40,000-100,000 through a machine learning software provider like Azati, but a much different price structure may incur if the firm decides to source AI programmers themselves to build bespoke solutions using APIs and other AI resources available. For example, APIs for access to applications like Google Cloud Video Analysis are priced using a tiered structure where they are free for the first 1,000 minutes, then priced at $0.10/minute after that. Companies may consider working with programmers to integrate various APIs into one bespoke AI solution rather than outsourcing the job to a software company like Azati or opting to customize a popular AI solution like IBM's Watson.

Quality Data AI becomes increasingly accurate when it is trained with high quantities of diversified, quality data. Thus, access to large amounts of quality data acts as a barrier to entry for AI implementation. However, with an estimation of 12,800 petabytes of data that will be produced by consumer web and email used in 2018 (Statista, 2017), there is no shortage of the data needed to implement AI systems. Firms can purchase data from external sources. However, the data used to train a firm's AI should align with the end-goal that it is looking to achieve.

Having data that is relevant to a marketer's performance objectives is a prerequisite for successful AI implementation. Lack of adequate data outlines a core problem that brands are beginning to face. A study conducted by ITSMA and Vision Edge Marketing (2014) showed that 74% of marketers could not measure or report how their efforts affected their businesses. The inability to quantify and digitize marketing efforts is a pinnacle issue a marketer will face when looking to implement AI.

Whether pre-collected or real-time data is required to train and run an AI system, a lack of access to or inability to manage data is a barrier to entry for marketers when it comes to AI implementation. As a result, only large firms with full access to relevant data can implement robust AI systems and see the technology's full potential. However, we may see this change if advancements to the technology's underlying algorithms occur or costs decrease so smaller firms have a better chance of success. Additionally, many open source applications available that allow the user to only pay for what they use. Google has many of these, such as its Video Analysis application that the user pays for based on how many minutes of video he needs to be analyzed. AI with pricing models like this can further lower the barrier to entry for smaller firms.

Another critical issue is that AI needs *quality* data. Gartner research states that the average cost of inadequate quality data on a company is $9.7 million per year (Moore, 2017). Seeing that Gartner published that finding in January of 2017, one can extrapolate on the increasingly costly effects poor quality data may have as reliance on AI for core operative activities increases. Likewise, Ovum Research (2014) estimates that lousy data quality costs firms 30% of the revenue. Again, these are statistics in a pre-AI Marketing landscape. The real issue we can expect to see is the compounding adverse effects of inadequate data in training AI systems and the execution of AI applications real-time.

Quality data entails data that fits the purpose to which it is needed. It's clean, accurate, relevant, consistent, and unbiased. An AI system's performance is contingent on the data used to program it. The data used to train an AI system dictates the output it produces in real-world settings. Teaching AI with poor quality data jeopardizes the accuracy and relevancy of its output. Whether it's a customer service chatbot being trained to talk with customers in a way that

replicates the brand's voice, or an image recognition software trained to scrub social media to spot certain celebrities using a brand's product, using poor quality data could have catastrophic effects on the brand's image.

Amongst others, a primary factor for creating inadequate AI data is that much of it is biased in various ways to reflect both conscious and unconscious human tendencies. Since data merely captures the instance of an event that occurs online, it may be skewed from the person creating it exhibiting cognitive biases or heuristics. When AI is trained using biased data, it reflects those biases. Just one of many examples of the issues that data bias can cause is seen when RocketSpace (et al., 2016) stated that a "key risk assessment algorithm used by the U.S. criminal justice system was found to be biased against black people in 2016". Such biases not only make the AI useless and potentially harmful to marketers, but also can tremendously negatively impact customers.

To fix this, marketers need to be proactive in preparing for the usage of AI throughout their operations. Mariya Yao from TOPBOTS offers a solution in saying, "companies need to prioritize diverse teams so that many eyes are watching for detrimental biases from various perspectives to lower the risk of them being learned by AI" (Rocketspace et al., 2016). For marketers to actualize the benefit of AI's ability to lessen human errors, organizational systems will need to be put in place to prevent biased data.

Beyond biased data, marketers must prepare for the data-hungry requirement of AI within their operations currently. They must make sure they are capturing data that is digitized and trackable across all platforms and throughout their entire customer journey. An increased emphasis on harboring "data-centered" organizations will be required. Even if a firm does not

expect to implement AI within the next few years, having plenty of quality data on hand and systems in place to ensure continuous data capturing will give it a distinct competitive advantage over firms that fail to do so.

Organizational Structure

Successful implementation can only occur if the company is invested in integrating AI throughout its operations. High involvement AI solutions are not plug-and-play, they require considerable effort to allow their full potential to be actualized day-to-day. As such, the structuring of organizations to accommodate the data-focused culture needed to fuel AI success is ranked as the number one issue firms face in implementation (Henke et al., 2016). For brands with little experience integrating data into their daily and high-level strategies, organizational restructuring may be necessary.

Further, most firms will be required to adjust their structure to accommodate for just how data-intensive AI systems are. The data used to train AI can quickly become outdated. Put by Caleb Fenton (2017), senior security researcher at cybersecurity company SentinelOne, “even if you had a good test set, real-world circumstances are always changing, and you need to know if your AI-powered service vendor responds quickly to those changes." In this dynamic landscape, firms should operate with a startup mindset by focusing on implementing lightweight systems and structuring their organization to manage the real-time nature of AI.

Competitive companies need the ability to pivot quickly and allow for business units to interact fluidly and allow for a “free flow of information and feedback” (Lindzon, 2017). The requirement for being dynamic implies an organizational design to let data move uninhibited throughout the company. Complete transparency is required for employees to understand their

role in the system. A business unit explicitly devoted to AI is necessary to ensure the company can successfully implement the technology day-to-day. AI units and teams within an organization should focus on the following five areas for success.

Planning for Change AI is a rapidly evolving technology. Thousands of AI service and software providers are already in operation, with a steadily rising industry growth rate. AI units within a company need to be adaptable to the many changes that may occur. From new service providers introduced to the market and new technology advancements to changing regulations relating to AI and consumer behavior trends, having systems in place to accommodate rapid change will set companies up for success.

Transparency Transparency is a critical factor in implementing AI in an organization. A 2017 white paper from Albert illustrates how marketers may be reluctant to apply new technology out of a lack of understanding about how it works. Instead, a lack of transparency can result in any benefits that come from the AI being, "negated by marketers' inability to understand what led to those decisions." (Albert, 2017). Without being able to see what is going on behind the scenes of the AI, employees will feel uncomfortable using it and may actively seek out ways to prevent it from offering benefits out of fear. Thus, the AI unit or team within an organization must be transparent and open about their findings, as well as be willing to educate other employees on exactly what AI is. Fears and doubts about the AI, mainly relating to job loss, may negatively impact how well it is adopted throughout the company.

Testing Assumptions A company's AI unit or team must be able to test and optimize their AI systems to meet the specific needs of their company. The AI team within an organization needs to ensure the data it is using is clean and unbiased to prevent any catastrophic

failures that may result from implementing a large-scale project using inaccurate AI. The AI team must also be sure that its systems are fine-tuned to accomplish the desired goals of the company. By testing assumptions, the company can optimize their results and actualize benefits from AI

Cross-department Support One of the most critical roles of the AI unit is to help other groups in the company with applying AI to their specific needs. The output of an AI system is based on the strategy set in motion by its operators. Thus, focusing on clarity of company goals, unifying marketing objectives, and improving high-level marketing strategy are crucial components to how companies can successfully implement AI. Without actionable plans guiding AI systems, companies will waste considerable resources executing tasks that ultimately do not contribute to their bottom lines.

Furthermore, an AI unit must be ready to aid others in taking action on insights and using AI as a tool to execute their department-specific needs. If humans are unable to act upon the capabilities of AI, no value is created. Employees must learn how to use AI for their tasks in the same way they may have needed to learn computers when they were first introduced.

Examples of these internal structures are surfacing as more companies have begun to move from only talking about their plans to implement AI in their business, and into executing their plans. Whether a firm is implementing AI in a low or high involvement manner, structuring its internal operations will allow it to actualize the many benefits of the technology. Additionally, firms should plan proactively for iterations in AI technology to occur. The AI industry is rapidly growing, and early adopters may overcommit resources in outdated technology.

Human Factors AI is most useful as a *tool* for marketers. Human intervention is still needed to carry out day-to-day marketing efforts. Human effort is required to plan the higher-level strategy behind which AI is used to carry out. Human effort is necessary to interpret the insights delivered by the AI system to determine the next step for the organization. Human effort is needed to design creative around the ideas provided from AI. Thus, there is room for cognitive errors to get in the way of the AI's effectiveness.

Humans (and consequently, the companies they operate) are inherently emotional beings. As logical as we may perceive ourselves, this emotional side of our human design causes us to fall victim to a myriad of cognitive biases that have a direct impact on our decisions. Many of these cognitive biases and heuristics have had evolutionary value in the past (Marshall et al., 2013). However, biases and heuristics in the modern age can hinder the effectiveness of marketing efforts beyond creating bad quality data. An area this is particularly true is with market research, which can subsequently impact every decision made using that research (MacKenzie and Podsakoff, 2012). Biases in humans translate into biased data, which can be detrimental to the performance of an AI system. Thus, systems must be in place to prevent the creation and usage of biased data in training AI. Examples of ways to combat data bias include assembling diverse teams to manage AI systems, track, and capture quality data.

Long-Term Implications

It is evident that artificial intelligence will shift the dynamic of marketing for years to come. Marketers have already experienced a wide range of benefits with applications of AI currently in use, as well as seen important areas for improvement where AI has underperformed and potentially done damage to marketing efforts. From here, a combination of the rapid

adoption of low involvement AI solutions currently and overwhelming reporting of intentions to implement AI soon are positive indicators that we can expect to see a vast majority of brands using AI to varying degrees for their marketing efforts. With that said, this section analyzes the long-term implications that widespread adoption of AI Marketing entails.

Since AI is a burgeoning industry and technology, it is essential to understand the timeframe of when widespread, practical usage of it is expected. The diffusion of innovation for high involvement AI Marketing solutions as of 2018 is currently still near the stage of being used solely by innovators. I believe that heightened interests and plans to apply AI in the next 1-2 years (2019-2020) will likely push this innovation diffusion into the early adopter stage as more firms begin to put AI closer to the core of their operations. As the efficacy of various AI solutions is proven, and adoption becomes less risky to implement, I believe we can expect to see a tipping point in the next 4-7 years (2022-2025) pushing high involvement AI adoption into the "early majority" category. Widespread adoption of AI will become feasible to implement for firms of different sizes as the technology becomes more advanced, and its associated costs begin to lower. I believe we can expect adoption by the late majority in 10-15 years from now (2028-2033), and adoption from the laggards 15-20 years from now (2033-2038), if ever (World Economic Forum and Accenture, 2016).

While we may see small firms and niche agencies that avoid adoption in the future, the magnitude of innovation brought about by AI may make competing without it by around the year 2030 akin to competing without any facet of digital marketing in 2018. Further, competing without AI will become either a strategic decision that a firm will need to implement consciously (e.g. not using any AI for the sake of not using AI as a means to invoke nostalgia), or from lack

of necessity in their local market (e.g. an internal marketing department in a small town). The argument could be made that AI would still be too expensive for many smaller companies to implement, even around the year 2030. However, the level of advancement in AI technology will more than likely lower the cost to implement it significantly enough to make it accessible to even small companies.

For low involvement AI Marketing, such as basic chatbots, entry-level usage of programmatic advertising, and Adobe Creative Suite tools, we can see a much different diffusion of innovation curve. Many competitive firms are already using low involvement AI solutions as part of their integrated marketing efforts, which puts my estimation of their adoption being near the early majority phase of innovation diffusion as of 2018. While many brands have not yet integrated these forms of AI efficiently into their day-to-day operations, their rapid adoption in marketing means we can see the late majority of firms implement this form of AI within the next 2-5 years (2020-2023), and laggards within ten years (2028).

These projections point to the implication that AI will become an integral facet of marketing sooner rather than later. Consequently, we will see fundamental changes in how brands and consumers interact on a macro level. Of the many applications and categories of AI discussed in this paper thus far, the benefits of hyper-personalization at scale, the increased ability for omnichannel marketing, and the heightened insights into customer behavior will be the core sources of innovation to marketing. These value propositions will fluctuate marketing best practices in many ways.

Changing Consumer Expectations

A study conducted by the World Economic Forum in collaboration with Accenture (2016) illustrates the changing market landscape that we are approaching. There are currently an estimated 2 billion millennials (defined by this research as those born between 1980 and 2000), which have already become a highly influential demographic in the world economy. Many millennials and members of the generations born after them, Generation Z, are considered digital natives - they are born at a time where technology plays an integral role in daily lives so adopting new technology comes naturally to them. While not every member of these generations are digital natives, a significant portion of them (of which already command $1.3 Trillion in annual spending (Eventbrite, 2014)) were brought up in a fundamentally different way than any generation of humans before, and have different expectations how brands market to them.

AI allows firms to accommodate for changes in consumer expectations. Automation of labor and time-intensive tasks allow for freeing up resources to focus marketing efforts on the higher level strategic decisions that create impactful messages. Real-time optimization can reduce costs and enable firms to hone in on the marketing activities that deliver optimal results. From the consumer perspective, marketing efficiency means they have easier access to offerings that meet their needs, whether that be penny-pinching or a search for life's purpose. Conversational applications give consumers direct access to brands whenever they want. This allows them to take control of their experiences at their convenience and interact with brands in a way much more natural to human nature. Frictionless shopping experiences give consumers what they want, whenever they want it in a hassle-free manner.

Brand Purpose

In having the extensive technological ability for brands to meet the demands of changing consumer expectations, the level of expected marketing quality (i.e., the relevance of ads, the quality of creative content, the level of personalization, etc.) will inevitably rise. Thus, firms will need to focus their efforts on activities that deliver more value to the individual lives of consumers. Rather than making "satisfaction guaranteed" promises and competing on low-level differentiating factors such as price and shipping, brands will need to realign their efforts to delight customers more than ever before. Brands can position themselves for long-term, sustained success by assuming these low-level differentiating factors are the baseline expectation of customers. Instead, the brands that come out victorious in the era of AI Marketing will be the ones who can use AI as a tool to deliver impactful creative, communicate meaningful stories, and make people's lives easier.

AI Marketing should serve as a tipping point for brands to adjust their higher-level marketing strategy. In being able to automate repetitive, labor-intensive tasks, brands can expect to have more time and resources on hand once they overcome any adjustment period that may occur when implementing AI. Thus, we can expect to see a change in the role of brands themselves in the lives of consumers.

Rather than the traditional role of businesses to sell goods or services, AI Marketing opens the floodgates towards a model of offering access to experiences. The idea of the experience economy is rooted in the work of Joseph Pine and James Gilmore (1999). This idea illustrates the progression of increasing economic value, heightened differentiation, and ability to command premium pricing as a brand moves from the lowest point of extracting commodities, past making goods and delivering services, and towards staging experiences.

The experience economy model can be applied to marketing in the AI era in conjunction with the concepts offered in Simon Sinek's book *Start With Why* (2013). While maybe not intentional, Sinek provides a framework that is ever more important for the era of AI Marketing. In essence, he proposes that all marketing efforts of a brand stem from an overarching purpose, the brand's "why." This brand purpose then gets applied to their processes (the "how"), and results in the end-product (the "what"). Starting with "why" means basing every decision a brand makes from the perspective of one overarching purpose or reason the brand exists. In doing so, brands can create sustained value and see their efforts genuinely resonate with their customers.

In the context of the near future of marketing, AI offers significant improvements to the "how" and "what" factors of Sinek's framework. AI will soon be able to automate many of these lower-level tasks in an incredibly efficient manner. Thus, for a brand to center their marketing efforts in communicating "what" they are selling and "how" they do business is a clear path to mediocrity. AI Marketing places immense importance on marketers' ability to articulate and communicate their "why"; their brand's overarching purpose that serves as fuel for the lower-level aspects that AI can then execute. This "why" element of a brand should be seen as a way to make the brand more human and relate to the common pain points or aspirations of communities. Developing and articulating a brand's reason for being through marketing can increase the likelihood of people resonating with the brand. As such, shifting the focus to these high-level, "why" elements of a brand can allow marketers to achieve differentiation and create long-lasting brands in the era of AI Marketing.

In totality, marketers will need to realign their efforts to focus more on clearly formulating and articulating their mission, story, and reason for being. Lower-level tasks that

formerly would consist of the bulk of a marketer's workload are now ripe for automation. This means more time will become available to focus on the aspects higher-level tasks that create impactful experiences and ultimately, build value for the customer. Less busy-work means more value-added activities. These are the factors that make for the era of AI Marketing being an inevitability, which is favorable for marketers and consumers alike.

Humanizing Technology

Marketers can expect to see a trend in favor of "humanized" technology. Consumers and marketers alike will come to desire the AI they interact with on a daily basis to be designed in a way that works well for them. By developing customer touch points from a human-centered, empathetic viewpoint, marketers can increasingly use AI in creative ways to alleviate pain points and generate value for customers. A trend towards humanized technology means implementing AI Marketing in a way that integrates seamlessly into our daily lives and adopts a customer-centered mindset.

This logic can be extended out to many of the pain points that customers may experience when interacting with AI in its current form. Humanized technology should be unobtrusive. Customers should not feel an invasion of privacy or annoyance from a brand's marketing efforts that use AI. As a result, brands that effectively humanize their AI Marketing can win loyalty from customers and see the full potential of what the technology can offer. Over time, unobtrusive technology should become the status quo. Much like how computers have gone from their early iteration of massive machines with complex interfaces to powerful pocket-size devices, AI should develop into a technology working its magic in the background to facilitate great experiences and deliver results.

Likewise, AI represents a natural progression of the continued democratization of creativity. The democratization of creativity is the idea that technology allows for creative abilities to be distributed to more people than before, and that the time required to achieve advanced skill levels in creative domains can be reduced through technology. Through software to allow for the production of work like the Adobe Creative Suite, applications to facilitate content distribution like Instagram, and educational resources on the internet like Coursera, people can express ideas at higher rates than ever before. AI can extend this idea even further.

Many services and tools already exist to facilitate production, distribution, and expressiveness of creativity. As more robust offerings are introduced to the market, AI can increase the capability that every marketer and brand has to become more creative. This democratization of creativity allows technology to work seamlessly in our daily lives. AI can slowly diminish the traditional roadblocks of inability to produce or distribute creative work at a high-level, letting humans focus more on the creativity that goes into a project and less on the cumbersome tasks involved with executing ideas. Currently-available offerings like intelligent image curation, augmentation tools for creative production, omnichannel marketing platforms, interactive experiences using biometrics or speech recognition, and much more are all the starting point for further democratization of creativity through AI.

Thus, humanized technology places the onus on humans for actualizing its potential. Advanced AI that is easily accessible to marketers is not useful if they do not know how to use it as a tool to galvanize their ideas. Similarly, the quality of ideas that marketers use AI to automate or argument with can become the critical differentiating factor of the era of AI Marketing. AI is currently nowhere close to being able to replicate the creative abilities of humans. It is up to us to

provide it the direction and ideas to create the impactful experiences and deliver the fantastic results of which it is capable. Emphasizing the development of creative thinking skills, metacognition, and improving the ability for creating frameworks to engage with the world can allow marketers to hone in on their innately human qualities that will deliver value using AI.

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.

Despite the serious issues that need to be solved before widespread adoption, artificial intelligence offers immense benefits to marketers, consumers, and society at large by facilitating marketers' ability to create and distribute value at scale to the right people at the right time in the right way. This ability can be realized through a mix of improved emotional capabilities within employees like empathy and creativity, and a constant focus on quality data-driven cultures within organizations. As AI automates repetitive tasks, marketers can increasingly align their efforts towards value-generating activities that improve the lives of consumers, allow for higher workplace satisfaction, and empower creative thinking for societal benefit at-large.

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. 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.

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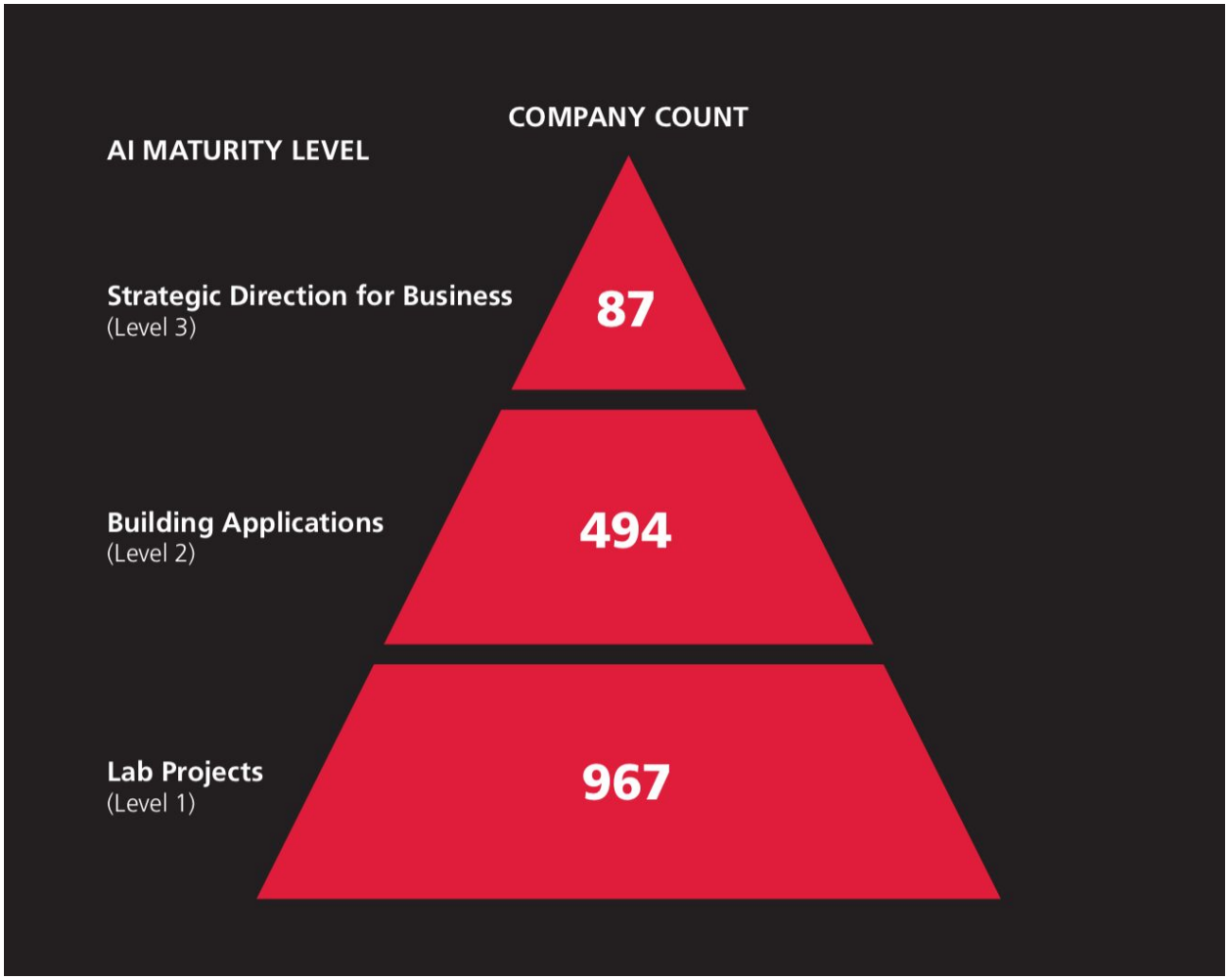
Appendices

Appendix A



The Progress of High-level AI implementation in 2016 (Naimat, 2016)

Appendix B

The Progression of Photorealistic Images Fabricated using AI (Brundage et al., 2018)