

A Qualitative Examination of the Influence of AI on Social Media Companies

Braden Monroe

NO Affiliation

ABSTRACT

Artificial Intelligence is a defining technological development of the Fourth Industrial Revolution. With its groundbreaking efficiency, limitless application, and ease of use, it heralds an upheaval of established business strategies. In this paper, I qualitatively examine the established understanding of how AI implementation affects business in the social media marketing industry, and identify some of the gaps in previous scholarly articles. I have used secondary data analysis to explore the current state of AI implementation in business, to contribute to a greater understanding of how AI implementation will shape this industry. Applications in theory, practice, and policy for this research are also given, along with suggestions for future research as well as practical application in the social media marketing industry.

Introduction & Literature Review

Artificial Intelligence is a technological innovation driving development in virtually every industry around the world. It promises new capabilities, better connectivity, and smarter decisions in the face of countless industries, like the business climate, and pushes us to "the great inflection point of history" (Davenport, Guha, Frewal, and Bressgott, 2020, p. 25). There are many scholarly articles from over the last decade that investigate the impact of artificial intelligence on particularly the marketing industry (e.g. Soni, Sharma, Singh and Kapoor, 2020; Davenport et. al, 2020; Verma, Sharma, Deb, and Maitra, 2021). Moving forward, the general consensus seems to be as such: AI is superior in absolute critical thinking, but people are still superior when it comes to knowing when to apply critical thinking. The most supported opinion moving into the fourth industrial revolution, regardless of age of business, is for marketing companies to employ both human workers with AI tools to give customers the best experience (Davenport et. al 2020).

Soni et. al (2020), Davenport et. al (2020), and Verma et. al (2021) all observe that AI either has the potential to change the world, or is already changing the world. This research analyzes, through a variety of lenses, how such growth could happen, brings up concerns about AI, and proposes steps for future research and practice. Soni et. al (2020), in their paper, take a snapshot of the AI industry between 2017 and 2018, comparing two lists of top 100 AI startups, one from 2017 and one from 2018. They inspect the various realms that AI would affect, then compare the distributions of AI startups in industries, investment, and location. Each list is further categorized into various industries, and aspects like funding and location are examined as well. Each of these areas have a short description, numerous real-world applications, and various deep learning algorithm types that are used to develop these areas. In their data, between 2017 and 2018, we see an approximate decrease of 6% in business and marketing-related industries, but this change was probably not made by a decline in interest in this industry, rather a comparative increase in the other industries around the world. We also see a 1.85 billion dollar increase in AI investment from 2017 to 2018. Geographically, we see almost 75% of startups are based in the US, with runner-ups being in China, Israel, and Canada, in 2017. In 2018, the same 75% distribution is kept within the US, but China's number of startups almost doubles as Israel and Canada stay approximately the same. They speculate that AI is destined to impact hyper-automation and hyper-connectivity,

which is "the dawn of the Fourth Industrial Revolution or Industry 4.0." (Soni et. al, 2020). They also give examples of realms that are most likely to be improved by AI, naming these "broad areas" of deep learning to be: computer vision, text analysis, speech recognition, and game playing.

Verma et. al (2021), in contrast, look into both how AI has affected business operations, and examine prior research regarding the subject. They observe that AI is already being implemented in various sectors, such as medical, e-commerce business, education, law, and manufacturing. Their work reviews over 1500 papers from 2014 to 2019 that explore marketing and artificial intelligence. In their search, they also include terms related to artificial intelligence, such as machine learning, deep learning, and natural language processing (NLP). After examining 1523 articles and 57 reviews, the team creates an intellectual structure, draws up statistics, and explains the most common topics. For this intellectual structure, five clusters are established. The first focuses on the trust that influences both the selling and distribution within manufacturing and service organizations, and argues that relationships and trust should continue to be built between buyer and supplier, regardless of industry and any possible competitive advantages. The second talks about how markets are becoming customer-centric and starting to emphasize non-monetary values, such as skills, knowledge, and interactions. The third describes how businesses can get competitive advantage by getting more long-term value to customers using structural equation models. The fourth talks about the benefits of data science in various fields, from finance to marketing to management. The fifth and final talks about how online websites create sentiments around businesses and affect competitive advantage in the market.

Extant work also highlights the possible drawbacks of AI - Verma et. al (2021) note that AI may not be implemented in all industries for logistical reasons, but that AI continues to grow and develop every day. AI may not fit every industry, and even companies within the same industry may have varying accesses to AI implementation. This is referred to as the AI Divide, where certain countries and companies in the world are accelerating their growth with AI while countless other countries and companies fall behind due to a lack of access to the same growth. The AI Divide has not yet been solved, but worsens every day. Also, at the end of their paper, Davenport et. al (2020) brings up other possible issues from this AI development and implementation: data privacy, bias, and ethics. Proper data is vital to the survival and growth of AI. The best data is from the people themselves, the consumers that AI is designed to help. However, in order to create the best AI models to help the people, it must study every single aspect of these people's lives, public or private. Most people are uncomfortable with this idea. AI users, then, are at conflict; they must decide how much data they can use without invading the privacy of their users, how to gather this data in the most ethical way, and whether the missing data, if they choose not to study the complete lives of their constituents, will create a biased model. In short, what information can a company use that creates the best imitation of a real person without breaking any ethical boundaries? This question is a major drawback of the technology for companies looking to implement AI.

Finally, prior research also looks into how AI will affect marketing strategies and customer behaviors. Researchers (e.g. Davenport et al., 2020; Verma et al., 2021) suggest that AI will affect business models, customer behavior, sales, and customer services, using existing industries as examples of these changes. For instance, the transportation industry will see a decrease in automobile insurance and breathalyzers due to the greater safety of AI-controlled transportation, whereas car security systems are expected to see increased demands. This would also lead to urban expansion, where AI driving can reach higher speeds safely and reduce commute times. In addition, AI could speed up customer service and help salespeople become more successful with real-time analysis and advice. In a third example, AI is expected to affect retail businesses, where AI-recommended items are shipped to customers, which are then charged based on what they keep and what they return. All of these technologies rely on various facets of AI - machine learning, natural language processing, neural networks, and more. Davenport et. al group these services, compile them based on digital versus physical services, and even provide real-world examples of these technologies to showcase the current state of AI. They

provide a similar table that captures possible expansions for each service from their current state of AI. All of these services then have their marketing viability examined.

Moving forward, emotional and semantic knowledge may be part of the driving forces moving forward (Verma et al., 2021). As such, technologies that are psychologically driven, brain-inspired, or otherwise attempt to mimic the human brain are the best investments to make. By combining psychology and engineering, AI might be able to predict and resolve the needs of customers with unprecedented speeds. In addition, AI that can "read" social media is expected to be a defining factor of competitive advantage moving forward. The AI that best reads linguistic patterns will improve marketing viability between buyers and suppliers and help companies get the best view of the market at any given point.

The majority of existing research, however, does not take a temporal or longitudinal view of AI implementation. That is, we know little about how AI implementation can influence the performance of an enterprise over time, or over different stages such as founding (e.g. for a start-up), scale-up, growth or expansion, or diversification (e.g. for an established or mature organization). Previous research largely also studies businesses that have already been established, so our understanding of the impact of AI on startups also needs to be extended. I attempt to address these gaps, by carrying out a qualitative evaluation of AI implementation across industries and timelines in this study.

Methodology

Although AI is undoubtedly shaping every profession in the world, it would be beyond the scope of this research program to conduct experiments for each of several industries, analyze each individual trend, then compare each industry to the next and draw our final conclusions. As such, I wanted to choose an industry that could exemplify the disparity from AI implementations in different stages of business. For this reason, I chose to qualitatively study the implications of AI on the different stages of the social media marketing industry. Social media marketing is not only a relatively new industry of its own, promising the existence of both established companies and abundant startups, it is an industry more obviously affected by AI than, for example, the bookkeeping industry.

For my research project, the original design was to conduct first-hand interviews with industry professionals, then analyze the data to find the best first and second order codes to identify themes and patterns of interest, and finally, to summarize and apply these codes to previous research to fill the holes previously identified. With this in mind, on LinkedIn, I searched for startup CEOs in the social media marketing industry, then viewed the top results. I also selected individuals who represented companies that were of various ages, specifically so I could investigate the impact of AI on the different stages of the venture life cycle. I selected two dozen of these CEOs, then reached out to ask about how AI has shaped their business's development. I waited roughly two weeks after attempting to connect to these individuals, but received no responses. Due to the project's scope and restrictive timeline, I then chose to use my back-up data source, and identified secondary data articles (e.g. blogs, interviews, websites) that covered information relevant to the project.

Thirteen articles specifically chosen that focused on the impact of AI on the social media industry served as the purposive sample - i.e. the data sources selected based on project requirements. The contents of each article was read and coded en-vivo. Each representative quote was recorded, sorted, then added to a large data table (*see Appendix-1*). After first-order codes were arrived at, the quotes were re-distributed in accordance to their theme. This repeated when second-order codes were found. Iterative coding (Corbin & Strauss, 1990; Eisenhardt & Graebner, 2007) resulted in codes that I structured as a data table. My data analysis lent itself to observing emerging findings and broader, theoretically-relevant themes.

Analysis & Findings

Table 1. Secondary Data Analysis Chart

| Representative Quotes | First Order Code | Second Order Codes |
|--|---|-------------------------------|
| <i>Advancements in Artificial Intelligence offer companies better ways to do that. AI can help build more effective marketing strategies, improve the customer journey, and change the way businesses attract, nurture, and convert prospects. (Source 1)</i> | AI is a driver of greater efficiency | AI drives competitive success |
| <i>Such vast information would typically take months for a human to cultivate. Deep learning, algorithms, and datasets empower AI, which in turn streamlines the process for marketers. (Source 3)</i> | | |
| <i>Artificial intelligence helps social media marketers create more effective social campaigns and be more efficient with their use of time. (Source 7)</i> | | |
| <i>AI can cut down on those costs by automating certain processes and allowing you to work more efficiently and quickly. (Source 9)</i> | | |
| <i>Blending AI into your social media marketing efforts can have lots of positive effects on your business, such as: Valuable Insights On Campaign Performance, Reduced Marketing Spend, Faster And Smarter Decision Making (Source 9)</i> | | |
| <i>But the good news is that you can use AI to automate many of these time-sucking tasks and boost your productivity at the same time. (Source 9)</i> | | |
| <i>You see, AI-driven tools can analyze data and information from countless sources, starting from the company's databases to social media handles. The insights thus achieved are used to fine-tune marketing campaigns and cut down overall marketing costs while still enhancing their effectiveness (Source 4)</i> | | |
| <i>AI makes it possible for social media marketers to achieve more in less time. (Source 7)</i> | | |
| <i>AI helps to detect such bots and eliminate fake actions. Furthermore, it makes it simple to distinguish computer-generated and real influencers. (Source 10)</i> | AI maintains advantage over previous technologies | |
| <i>Artificial intelligence ensures that mindless bots aren't simply scraping data and outputting garbled, erroneous nonsense. Artificial intelligence makes the social media bots that crawl through content smarter than the opposing bots, learning, changing, and altering its actions dynamically. (Source 2)</i> | | |
| <i>One of the massive benefits of artificial intelligence can help deal with the onslaught of data we produce every day. Social media is rife with copyright infringement, fraud, fake accounts, troll accounts, spammy posts, and nefarious bots. (Source 2)</i> | | |

| | | | | |
|---|---------------------------------------|----------------------------|--|--|
| <p><i>Social network providers have started experimenting with using AI to detect and combat spam automatically. While spam is harmful to users, for an AI it represents an inexhaustible source of data. The AI trains on this data through a process called machine learning, the result of which is the ability to detect spam with a great degree of accuracy. (Source 5)</i></p> | | | | |
| <p><i>In the years since it first teamed up with Phrasee, eBay has enjoyed substantial improvements in its key email marketing metrics, including: 16% average open uplift, 700,000+ incremental opens per campaign, 56,000+ incremental clicks per campaign, 31% average click uplift (Source 1)</i></p> | <p>AI boosts business performance</p> | | | |
| <p><i>companies stand to gain the ability to deliver better quality customer experiences, enhance sales, and improve their overall march towards the business goals and growth. (Source 4)</i></p> | | | | |
| <p><i>Those who discussed AI on their earnings calls were 40% more likely to see their firms' share prices increase -- up from 23% in 2018. (Source 13)</i></p> | | | | |
| <p><i>What this means for you, as a startup owner, social media influencer, digital marketer, or simply a techie, is that understanding and embracing Artificial Intelligence can give a noticeable boost to your business or career. (Source 8)</i></p> | <p>AI defines business advantage</p> | | | |
| <p><i>The results were striking. Not only was Tomorrow Sleep now able to outrank much larger competitors like Casper for key topics, but it also saw its organic traffic increase from 4,000 per month to 400,000 per month within a year. (Source 1)</i></p> | | | | |
| <p><i>How do you stay ahead of the competition and get the most out of your social media ads? It's simple. You leverage AI-based tools. (Source 9)</i></p> | | | | |
| <p><i>You can also avoid the pitfalls your competitors have encountered by analyzing the <u>content marketing mistakes</u> they made and why they occurred. (Source 9)</i></p> | <p>AI is ubiquitous</p> | <p>AI use is spreading</p> | | |
| <p><i>AI in marketing may feel more science fiction than fact to many, but it's not a far-off concept; it's here right now (Source 1)</i></p> | | | | |
| <p><i>Artificial intelligence continues to play a major role in all areas of science, technology, and business. Social media is one of the areas where this is most evident. From the content we consume, to the ads we watch, and beyond, AI is shaping the social media landscape in ways we couldn't imagine before. (Source 5)</i></p> | | | | |
| <p><i>This means that more and more brands will adopt AI to revolutionize their social media campaign strategies and stay ahead of the competition. (Source 9)</i></p> | | | | |

| | | | |
|---|---|--------------------------------|--|
| <p>According to Salesforce, just 29% of marketing leaders used AI in 2018, but that number surged to 84% by 2020. (Source 1)</p> | | | |
| <p>Most of those signed up to the site would be surprised to learn that AI influences much of what they do. (Source 3)</p> | <p>AI is publicly hidden</p> | | |
| <p>In fact, social media features that are powered by AI are the ones we use most, without even realizing it. (Source 5)</p> | | | |
| <p>According to the research firm Aberdeen, companies identifying customer needs through predictive analytics can increase their organic revenue by 21% year-over-year, compared to an average of 12% without predictive analytics. (Source 1)</p> | | | |
| <p>The AI in the social media market is expected to achieve a CAGR of <u>28.77%</u> over the next five years, reaching a value of USD 3,714.89 million by 2026. (Source 7)</p> | | | |
| <p>Studies predict that by 2023, the market of AI in social media will <u>hit USD 2.2 billion</u>, compared to only USD 0.6 billion in 2018 (Source 8)</p> | | | |
| <p>The AI in the social media market is expected to grow at a compound annual growth rate (CAGR) of <u>28.77% to reach \$3,714.89 million</u> by 2026. (Source 9)</p> | <p>AI promises industry growth</p> | | |
| <p>The influencer marketing industry is set to reach \$13.8 billion by 2022. (Source 10)</p> | | | |
| <p>The share of a company's revenue that is "AI influenced" more than doubled between 2018-2021 and is expected to triple between 2018 and 2024 roughly. (Source 13)</p> | | | |
| <p>And by the end of 2021, global spending on artificial intelligence hardware, software, and services is expected to exceed \$340 billion, per a forecast from <u>IDC</u>. (Source 1)</p> | | | |
| <p>The current pinnacle of AI-social media integration are virtual influencers. These 'individuals' are built using next-gen 3D modeling software to give them the appearance of actual people. And thanks to social media automation tools, these virtual influencers can share content, post comments, and do almost everything regular users can. (Source 5)</p> | <p>AI tools are developing technologies</p> | <p>AI reaches new horizons</p> | |
| <p>In the future, AIs will slowly abandon their roles as workers behind the scene on social media, in order to become fully-fledged digital citizens. (Source 5)</p> | | | |
| <p>With the growth of Natural Language Processing, algorithms are now capable of <u>sentiment analysis</u>. The latter refers to identifying subjective sentiments such as emotions in written content. (Source 8)</p> | | | |

| | | |
|---|---|--|
| <p><i>Virtual influencers are a growing trend in influencer marketing. These are not real people, but characters with personalities and behaviors completely created by teams of artificial intelligence and marketing experts. (Source 10)</i></p> | | |
| <p><i>The Amazon team has enhanced its functionality since the initial rollout, to the extent that Personalize can now deliver up to 50% better recommendations across a range of fast-changing product types, including books, movies, music, and news articles. (Source 1)</i></p> | | |
| <p><i>80% of shoppers say retail technologies and innovations have enhanced their online buying experience, while 66% say the same about brick-and-mortar retail. (Source 1)</i></p> | | |
| <p><i>Since joining forces with rasa.io, the AMA has seen its monthly subscriber engagement rate increase by an impressive 42%. As editor-in-chief, Molly Soat explained: “Our members and readers span many industries and specialties, so not every post about marketing will be relevant to all of our subscribers. The ability to personalize this newsletter for individuals within such a massive audience is invaluable.” (Source 1)</i></p> | | |
| <p><i>AI is creating a better world for customer relations across every industry. The technologies and advancements that AI brings to user engagement and customer service allow it to be more effective while also guaranteeing a more pleasant experience for the user. (Source 2)</i></p> | | |
| <p><i>Chatbots have become much more advanced thanks to AI and are now beginning to have a great effect on customer service, as well as social media and online reputation. Many businesses report that chatbots have revolutionized their customer service department by removing human error while retaining the human element. (Source 2)</i></p> | <p>AI improves human-artificial relationships</p> | |
| <p><i>As a result, a growing number are incorporating artificial intelligence (AI) in social media to better connect with potential customers (Source 6)</i></p> | | |
| <p><i>Chatbots are pieces of software that conduct conversations via auditory or textual methods and facilitate communication between consumers and businesses because they are programmed to respond immediately to inquiries, saving time and enhancing overall customer experience (Source 6)</i></p> | | |
| <p><i>With this information, businesses can consistently, quickly, and accurately respond to customer complaints. (Source 6)</i></p> | | |
| <p><i>Responding to every customer query right away is a challenge for many businesses. But with the automation of certain aspects of customer service, clients get quicker responses, and companies gain their customers’ trust. (Source 8)</i></p> | | |

Blending AI into your social media marketing efforts can have lots of positive effects on your business, such as: Improved User Experience, Increased ROI (Source 9)

AI can enable you to build a closer and stronger relationship with your social media audience. (Source 9)

You can then use that information to refine your content and select visuals to maximize your brand's engagement, impressions, reach, and growth on social media. (Source 9)

Lucky for you, high-performing customer support and a personalized audience experience are some of the benefits you can leverage for your brand through AI. (Source 9)

Chase found that using machine learning in their copywriting helped them achieve more humanity in their marketing. For example, one digital ad written by humans read: "Access cash from the equity in your home." Persado's version, on the other hand, read: "It's true— You can unlock cash from the equity in your home." The latter version performed better with customers. (Source 9)

Sephora's chatbot helped consumers narrow down choices, beginning with a quiz about their product preferences. Product preferences are especially helpful in the cosmetics industry, where the options can be overwhelming and difficult to purchase without testing in person. Sephora gained valuable insights from their chatbot and saw enough engagement from that experiment that it's since launched more chatbots on Messenger. (Source 1)

Its effectiveness lies in the ability to adapt to its target markets changing tastes in real-time without missing a beat. Using machine learning apps also provides more control over individual sales channels and allows brands to control their image more closely. (Source 2)

As technology improves, a range of tools is being implemented in the race to win customers on social media. It doesn't merely stop at acquiring new customers, however. AI is seeping its way into the user experience on social platforms, creating a better journey for users in the process. (Source 2)

The company is also using AI to filter people's news streams better. After the recent scandal involving Cambridge Analytica, CEO Mark Zuckerberg pinpointed AI as the way to solve many of the companies problems with incorrect news feeds and general hate speech (Source 3)

In addition, AI technologies, including facial recognition and natural language processing (NLP), are helping companies improve customer service and market their products more effectively. (Source 6)

| | | |
|--|----------------------------|--|
| <p><i>The idea is that auto-cropping of images can be used to help businesses determine what consumers tend to fixate on to post more engaging photos on social media (Source 6)</i></p> | | |
| <p><i>Infusing AR into your social media marketing efforts can enable you to create more immersive and unique digital experiences for your audience. (Source 9)</i></p> | | |
| <p><i>Magnolia worked with <u>Shopify Plus</u> to create a storefront and an augmented reality app that allows users to view products in 3D and “place” them in their homes. AR allowed Magnolia to render its products with the highest-possible photo-realism. (Source 1)</i></p> | | |
| <p><i>With AI-driven chatbots, companies can communicate and engage with their target audience on their preferred social media platforms. Be it answering queries or simply acknowledging customers’ comments, AI-driven chatbots can contribute immensely in this regard as well. (Source 4)</i></p> | | |
| <p><i>They can cover bases that were once hard to monitor. (Source 3)</i></p> | | |
| <p><i>AI-powered tools can help automate repetitive and monotonous tasks that do not necessitate the involvement of human agents. (Source 4)</i></p> | | |
| <p><i>Automation tools like <u>Quintly</u> make it easier for social media marketers to track engagement, follower counts, impressions, competitive benchmarks, and more. (Source 7)</i></p> | | |
| <p><i>Advanced Artificial Intelligence technologies can scan a large number of photos instantly, then examine and sort them as needed. (Source 8)</i></p> | | |
| <p><i>You can track things like the performance of your ads, user engagement on individual posts, audience reach, and the actions people take after viewing your content. (Source 9)</i></p> | <p>AI enables big data</p> | |
| <p><i>Recognizing and tracking patterns is AI’s superpower. It can collect and provide you with invaluable data about user browsing habits, average time on site, bounce rates, clicks, views, and so on. Once all the numbers are laid out in front of you, it’ll be much easier to identify why your visitors leave, which parts of your website or social media account work and which ones need tuning. (Source 8)</i></p> | | |
| <p><i>AI can process and analyze huge amounts of data that marketers need to evaluate the value of particular types of content. (Source 10)</i></p> | | |
| <p><i>With over 101 million email subscribers across the US, UK, and Germany alone, crafting impactful subject lines to drive open rates is a colossal undertaking. (Source 1)</i></p> | | |

| | | | |
|--|--|--|--|
| <p><i>it was near-impossible to do meaningful personalization for each of its 100,000+ newsletter subscribers. Impossible without AI in marketing, that is. (Source 1)</i></p> | | | |
| <p><i>Artificial intelligence has wrought a world built on convenience and analysis. With artificial intelligence’s myriad applications come multiple consequences, both foreseen and unforeseen. (Source 2)</i></p> | | | |
| <p><i>The tech aims to make using the service more efficient. Deep learning methods learn keyword queries to help create better search results for people and places. (Source 3)</i></p> | | | |
| <p><i>You would agree running a successful social media campaign requires immense hard work and time. Plus you need to track various metrics like engagement rate, reach, click-through rate, and more. I can understand this might sound overwhelming. To make it easier for you – the list below the benefits that will help you better understand the opportunity posed by artificial intelligence in the world of social media marketing. (Source 4)</i></p> | | | |
| <p><i>Customers’ posts, comments, and online interactions with a brand provide invaluable insights into how the said brand is perceived. It can be a daunting job for a human to search and scan the whole web for a fuller picture of how the public reacts to and interacts with your business. But for AI, delivering quicker, more thorough, and accurate results is a breeze. (Source 8)</i></p> | | | |
| <p><i>One of the main reasons people use social media is to find similar things to those they already like. This can be content, products, or even other users. One can do this manually by browsing, via third party links, or with the help of recommendations that the platform provides. This third option exists thanks to AI recommendation engines. (Source 5)</i></p> | <p>AI creates unprecedented business models and considerations</p> | | |
| <p><i>Just by scanning a picture, social recommendation engines can learn enough about a user to connect them with people, products, and content that matches their profile. (Source 5)</i></p> | | | |
| <p><i>When you engage with social media accounts and posts, the recommendation engine learns from your past activity, and then interprets patterns in your data to predict a list of accounts you could potentially interact with. (Source 6)</i></p> | | | |
| <p><i>Predictive behavior analysis opens the door to a new age of social prediction. AI can analyze data from social listening, user engagement, interaction history, and past purchases to identify patterns to predict future consumer behavior. (Source 7)</i></p> | | | |
| <p><i>With the combined power of machine learning and AI, you can collect and dissect your social media data to build a clearer picture of your audience and predict their preferences, needs, and behaviors. (Source 9)</i></p> | | | |

In order to select the best influencer for a given campaign, it is important to know his or her audience. This problem requires deep analysis and understanding of users. While planning campaign users should understand which group of people will be a recipient. You need to consider other factors, such as age, location, the level of engagement in their posts, influencers interest and more others. All this information could be extracted from social media data using data science services and AI in influencer marketing. (Source 10)

Using this technology, Unilever discovered a link between ice cream and breakfast: at least 50 songs in the public domain include lyrics that talk about “ice cream for breakfast,” and businesses like Dunkin’ Donuts are already selling ice cream in the morning. Unilever took this insight and developed a range of cereal-flavored ice creams (including Fruit Loop and Frozen Flakes) for the Ben & Jerry’s brand. (Source 1)

Furniture company West Elm launched a Pinterest app that allowed their customers to copy and paste links to boards which allowed AI to recommend products based on their likes. Rather than suggesting chairs because someone liked a chair, it looks at the overall stylistic nature of your likes and makes its suggestions that are more streamlined towards users’ tastes. (Source 3)

It’s helping them to better understand their customers buying personas, which, in theory, should help to market more relevant products. Marketers can personalize content for their customers by understanding buying habits, people’s everyday environments and what motivates them to make their decisions. And AI can learn these habits at a rate much faster than any human. (Source 3)

Insights about your customers; yep, knowing what your customers want, when they are likely to want it, how they look for information, etc. can be achieved from the extensive AI-driven analysis of data collated from myriad sources, such as social media and other business systems and databases. What’s more is that AI cannot only analyze data much more quickly and with better precision than manual methods, AI also gets better at understanding customers’ requirements with every interaction with the company’s customers. (Source 4)

Just by scanning a picture, social recommendation engines can learn enough about a user to connect them with people, products, and content that matches their profile. (Source 5)

Various AI and deep learning tools can help to monitor the performance of ad campaigns and stay up to date with niche industry trends. Competitor research and analysis are also infinitely easier and more effective with AI. (Source 8)

| | | |
|--|------------------------------------|-----------------------------|
| <p><i>With the combined power of machine learning and AI, you can collect and dissect your social media data to build a clearer picture of your audience and predict their preferences, needs, and behaviors. (Source 9)</i></p> | | |
| <p><i>A quick glimpse of a customer's day-to-day life can help companies shape much more accurate and well-rounded buyer personas. On top of that, detecting consumers' moods results in better targeted, more relevant ads tailored to each customer's emotional state. (Source 8)</i></p> | | |
| <p><i>Of course, Artificial Intelligence has its downsides as well, and privacy issues are one of the main ones. (Source 8)</i></p> | <p>AI causes privacy issues</p> | |
| <p><i>It was estimated that 85% of AI projects will fail and deliver erroneous outcomes through 2022. (Source 11)</i></p> | | |
| <p><i>70% of companies report minimal or no impact from AI. (Source 11)</i></p> | | |
| <p><i>87% of data science projects never make it into production. (Source 11)</i></p> | | |
| <p><i>AI models try to solve probabilistic business problems which means the outcomes may not be the same for each use case. (Source 11)</i></p> | | |
| <p><i>Many models used a dataset of healthy chest scans of children as examples of non-COVID cases. In the end, the AI learned to identify kids, not COVID cases. (Source 11)</i></p> | <p>AI has inconsistent results</p> | |
| <p><i>That works out to a 96% failure rate for proposed changes. (Source 12)</i></p> | | |
| <p><i>the most recent Accenture <u>research</u> suggests that only 12% of companies have advanced their AI maturity enough to achieve 'superior growth' and business transformation. (Source 13)</i></p> | | <p>AI has disadvantages</p> |
| <p><i>Even the most elite technology experts fail, (Source 12)</i></p> | | |
| <p><i>Artificial intelligence is a powerful technology but implementing it without a well-defined business problem and clear business goals is not enough to achieve success. (Source 11)</i></p> | | |
| <p><i>Canadian tech startup Element AI had faced difficulties in getting its products to the market due to high operational costs with minimal revenue. (Source 11)</i></p> | <p>AI use is expensive</p> | |
| <p><i>Just as you can't build a data culture overnight, you shouldn't expect immediate transformational wins from analytics projects. A successful AI or machine learning initiative requires experience in people, process, and technology, and good supporting infrastructure. (Source 12)</i></p> | | |

| | | | |
|---|--|--|--|
| <p><i>Developing an AI project and building/training an AI model is experimental in nature and may require a long trial-and-error process. (Source 11)</i></p> | | | |
| <p><i>Working with outdated, insufficient, or biased data can lead to garbage-in-garbage-out situations, failure of the project, and wasting business resources. (Source 11)</i></p> | | | |
| <p><i>According to <u>StatNews</u>, internal IBM documents show that Watson frequently gave erroneous cancer treatment advice, such as giving bleeding drugs for a patient with severe bleeding. Watson is trained on a small number of hypothetical cancer patient data rather than real patient data. (Source 11)</i></p> | | | |
| <p><i>AI is not a plug-and-play technology that delivers immediate returns on investment. (Source 12)</i></p> | | | |
| <p><i>Without a team with proper training and business domain expertise, companies should not expect to accomplish much with AI. (Source 11)</i></p> | | | |
| <p><i>Artificial intelligence is a powerful technology but implementing it without a well-defined business problem and clear business goals is not enough to achieve success. (Source 11)</i></p> | <p>AI requires adjustment to succeed</p> | | |
| <p><i>In short, you should start by looking at AI and machine learning as a way to improve existing business processes rather than as a new business opportunity. (Source 12)</i></p> | | | |
| <p><i>Building a successful AI project requires collaboration between data scientists, data engineers, IT professionals, designers, and line of business professionals. (Source 11)</i></p> | | | |
| <p><i>The first step toward a successful AI initiative is building trust that data-driven decisions are superior to gut feel or tradition. (Source 12)</i></p> | | | |
| <p><i>[AI implementation] requires an organization-wide change of mindset, and a change in internal institutions to match. (Source 12)</i></p> | | | |
| <p><i>75% of companies have already integrated AI into their business strategies and have reworked their cloud plans to achieve AI success. (Source 13)</i></p> | | | |
| <p><i>But it is not the technology but rather their approach with applications of AI that sets this 12% of companies apart. AI Achievers know that AI maturity is as much about people as it is about technology. (Source 13)</i></p> | | | |
| <p><i>In aggregate, tapping AI to improve small decisions offers better returns on the investment. Rather than betting on a long shot, companies would be better off starting with less glamorous, and less risky,</i></p> | | | |

investments in AI and machine learning to improve their existing processes. (Source 12)

Some formal organizational structure, with support from the top, will be necessary to achieve the critical mass, momentum, and cultural change required to turn a traditional, non-analytic enterprise into a data-driven organization. This will require new roles and responsibilities as well as a “center of excellence.” The form that the center of excellence (COE) should take will depend on the individual circumstances of the organization. (Source 12)

The purchasing decision would consider floor space, spare parts, maintenance, staff training, product design, and marketing and distribution channels for the new or improved product. Equal thought should go into bringing a new AI or machine learning system into the organization. (Source 12)

AI maturity comes down to mastering a set of key capabilities in the right combinations -- not only in data and AI but also in organizational strategy, talent and culture (Source 13)

In my overall analysis, I found many different trends, such as *how AI drives competitive success, is spreading around the world, reaches new horizons, and still has clear disadvantages*. Source 1, 7, and 9 all talk about the *efficiency of AI in business*, saying "Advancements in Artificial Intelligence offer companies better ways to do that. AI can help build more effective marketing strategies, improve the customer journey, and change the way businesses attract, nurture, and convert prospects," (Source 1) "Artificial intelligence helps social media marketers create more effective social campaigns and be more efficient with their use of time," (Source 7) and "But the good news is that you can use AI to automate many of these time-sucking tasks and boost your productivity at the same time." (Source 9) The common thread between all of these sources is this: AI helps make more efficient use of your time and therefore productivity, which helps in general grow your business and raise the various ways we can measure business.

Sources 2, and 5 talk more about the technological advantage provided by AI. According to source 2, "Artificial intelligence ensures that mindless bots aren't simply scraping data and outputting garbled, erroneous nonsense. Artificial intelligence makes the social media bots that crawl through content smarter than the opposing bots, learning, changing, and altering its actions dynamically." Source 5 says "Social network providers have started experimenting with using AI to detect and combat spam automatically. While spam is harmful to users, for an AI it represents an inexhaustible source of data. The AI trains on this data through a process called machine learning, the result of which is the ability to detect spam with a great degree of accuracy." (Source 5) Combined, they show that the businesses that use AI have an advantage over the ones that don't; AI has the capabilities to push a business's growth while cutting away at the older-generation competition.

Sources 1 and 13 also provide claims about how much AI can boost a business's performance. From the sources, "In the years since it first teamed up with Phrasee, eBay has enjoyed substantial improvements in its key email marketing metrics, including: 16% average open uplift, 700,000+ incremental opens per campaign, 56,000+ incremental clicks per campaign, 31% average click uplift" (Source 1) and "those who discussed AI on their earnings calls were 40% more likely to see their firms' share prices increase -- up from 23% in 2018."

(Source 13) Together, these provide hard evidence about exactly how beneficial AI has been when integrated with businesses, and how beneficial it can be.

Finally, sources 1 and 9 provide examples of how *AI helps you maintain advantage over your competition*: How do you stay ahead of the competition and get the most out of your social media ads? It's simple. You leverage AI-based tools. (Source 9) and The results were striking. Not only was Tomorrow Sleep now able to outrank much larger competitors like Casper for key topics, but it also saw its organic traffic increase from 4,000 per month to 400,000 per month within a year. (Source 1). Particularly with the quote from source 1, we see that a modern-day startup, Tomorrow Sleep, was able to surpass a decade-established business, Casper Mattresses, through the correct use and implementation of AI.

Together, these four codes of "AI drives efficiency," "AI defines technology advantage," "AI boosts business performance," and "AI defines business advantage" come together to define the Second Order Code of "AI drives competitive success." All of these provided examples talk about how AI has increased productivity and efficiency and how AI maintains a lead over previous technologies and the businesses that use such age-old tactics.

Another conclusion that emerged from the data was that AI use is increasing significantly: According to sources 1, 5, and 9, "AI in marketing may feel more science fiction than fact to many, but it's not a far-off concept; it's here right now," (Source 1), "Artificial intelligence continues to play a major role in all areas of science, technology, and business. Social media is one of the areas where this is most evident. From the content we consume, to the ads we watch, and beyond, AI is shaping the social media landscape in ways we couldn't imagine before," (Source 5) and "This means that more and more brands will adopt AI to revolutionize their social media campaign strategies and stay ahead of the competition." (Source 9) These combined simply point out that, in the world right now, AI usage is growing in almost every industry. However, as Sources 3 and 5 point out, AI is not the most talked-about topic; "Most of those signed up to the site would be surprised to learn that AI influences much of what they do," says Source 3 and "In fact, social media features that are powered by AI are the ones we use most, without even realizing it," says Source 5.

Finally, we can also see that the AI industry itself is growing. According to a multitude of sources, "The AI in the social media market is expected to achieve a CARG of 28.77% over the next five years, reaching a value of USD 3,714.89 million by 2026," (Source 7), "The influencer marketing industry is set to reach \$13.8 billion by 2022," (Source 10), and "And by the end of 2021, global spending on artificial intelligence hardware, software, and services is expected to exceed \$340 billion, per a forecast from IDC." (Source 1)

To conclude, *the AI industry is here to stay*. AI is already everywhere, even if the public isn't extremely aware of it. The increase of its applications and usage are leading the AI industry to flourish, as it spreads throughout every industry in the world.

In addition, the data showed that AI reaches new horizons: First, I pointed out that AI tools themselves are developing technologies. According to Sources 5, 8, and 10, we can see that "The current pinnacle of AI-social media integration are virtual influencers. These 'individuals' are built using next-gen 3D modeling software to give them the appearance of actual people. And thanks to social media automation tools, these virtual influencers can share content, post comments, and do almost everything regular users can." (Source 5), "With the growth of Natural Language Processing, algorithms are now capable of sentiment analysis. The latter refers to identifying subjective sentiments such as emotions in written content." (Source 8), and "Virtual influencers are a growing trend in influencer marketing. These are not real people, but characters with personalities and behaviors completely created by teams of artificial intelligence and marketing experts." (Source 10). As we can see right now, these virtual influencers are a very recent yet important topic in the industry, showing just how fast AI developments can rise.

Next, there was persuasive data that supported the idea that *AI improves human-artificial relationships*. Source 1 says "Since joining forces with rasa.io, the AMA has seen its monthly subscriber engagement rate increase by an impressive 42%. As editor-in-chief, Molly Soat explained: 'Our members and readers span many

industries and specialties, so not every post about marketing will be relevant to all of our subscribers. The ability to personalize this newsletter for individuals within such a massive audience is invaluable." Source 2 says "Chatbots have become much more advanced thanks to AI and are now beginning to have a great effect on customer service, as well as social media and online reputation. Many businesses report that chatbots have revolutionized their customer service department by removing human error while retaining the human element." Overall, source 6 says "In addition, AI technologies, including facial recognition and natural language processing (NLP), are helping companies improve customer service and market their products more effectively." Combined, all of these quotes support the idea from earlier, that AI is improving relationships between people and businesses.

Also, *AI enables big data*. A lot of sources talked about how AI can surpass previous capabilities, but sources 1, 8, and 10 summarize this well: "it was near-impossible to do meaningful personalization for each of its 100,000+ newsletter subscribers. Impossible without AI in marketing, that is," (Source 1), "Recognizing and tracking patterns is AI's superpower. It can collect and provide you with invaluable data about user browsing habits, average time on site, bounce rates, clicks, views, and so on. Once all the numbers are laid out in front of you, it'll be much easier to identify why your visitors leave, which parts of your website or social media account work and which ones need tuning," (Source 8), "AI can process and analyze huge amounts of data that marketers need to evaluate the value of particular types of content." (Source 10). All of these ideas point to the idea that the development of AI has pushed the boundary of the possible much farther into what was deeply impossible.

Finally, we know that *AI creates unprecedented business models and considerations*. Sources 1, 5, and 10 all support this; "Using this technology, Unilever discovered a link between ice cream and breakfast: at least 50 songs in the public domain include lyrics that talk about "ice cream for breakfast," and businesses like Dunkin' Donuts are already selling ice cream in the morning. Unilever took this insight and developed a range of cereal-flavored ice creams (including Fruit Loop and Frozen Flakes) for the Ben & Jerry's brand," (Source 1), "One of the main reasons people use social media is to find similar things to those they already like. This can be content, products, or even other users. One can do this manually by browsing, via third party links, or with the help of recommendations that the platform provides. This third option exists thanks to AI recommendation engines," (Source 5) and "In order to select the best influencer for a given campaign, it is important to know his or her audience. This problem requires deep analysis and understanding of users. While planning campaign users should understand which group of people will be a recipient. You need to consider other factors, such as age, location, the level of engagement in their posts, influencers interest and more others. All this information could be extracted from social media data using data science services and AI in influencer marketing." (Source 10)

Combined, all of these ideas show how AI helps push boundaries. AI enables previously hypothesized methodologies, such as big data, to produce cutting edge-business models that improve experiences like customer service tenfold. All the while, the tools themselves are changing and growing, such as with artificial influencers. In conclusion, we can see how these quotes and codes build up to the overarching theme that AI helps human intelligence reach new horizons.

However, in order to critically analyze the impact of AI on business, we still need to address the *disadvantages of AI*. If AI is not a commonly spoken-about topic, its disadvantages are spoken of even less. For instance, source 8 brings up the fact that, for AI to be as tailored and professional as it can be, there will be privacy issues: "Of course, Artificial Intelligence has its downsides as well, and privacy issues are one of the main ones." There is also the fact that AI implementation will not result the same for all groups. Sources 11, 12, 13 point out that "It was estimated that 85% of AI projects will fail and deliver erroneous outcomes through 2022," (Source 11) "That works out to a 96% failure rate for proposed changes, " (Source 12) and "the most recent Accenture research suggests that only 12% of companies have advanced their AI maturity enough to achieve 'superior growth' and business transformation." (Source 13)

It is also very expensive to implement AI, whether by money, time, or even patience, as Sources 11 and 12 say: "Artificial intelligence is a powerful technology but implementing it without a well-defined business problem and clear business goals is not enough to achieve success," (Source 11), "Just as you can't build a data culture overnight, you shouldn't expect immediate transformational wins from analytics projects. A successful AI or machine learning initiative requires experience in people, process, and technology, and good supporting infrastructure," (Source 12), and "Working with outdated, insufficient, or biased data can lead to garbage-in-garbage-out situations, failure of the project, and wasting business resources." (Source 11)

Finally, AI implementation needs a lot of adjustment from businesses to succeed. Unlike other solutions, AI needs an entire shift to the business model, as sources 11, 12 and 13 say: "Artificial intelligence is a powerful technology but implementing it without a well-defined business problem and clear business goals is not enough to achieve success," (Source 11), "[AI implementation] requires an organization-wide change of mindset, and a change in internal institutions to match," (Source 12), and "AI maturity comes down to mastering a set of key capabilities in the right combinations -- not only in data and AI but also in organizational strategy, talent and culture." (Source 13)

In summary, AI implementation has *many downsides for businesses* to take note of. AI implementation takes a lot of time and effort to use, but very often leads to no positive results, or even privacy issues. It is easy to talk about the statistical advantages of AI, but businesses do need to address the very real issues that can arise from misimplementation or misuse.

Results & Discussion

My data analysis sheds light on a few noticeable trends. In addition to the evidence I had supporting my first and second order codes, some of the sources also offered insight towards filling the gap I found during my literature review of prior research: how AI implementation affects business at various points in the venture business cycle.

Source 1 talks much about how established businesses are changing with the AI movement. For example, Chase Bank uses AI to find the best marketing strategy, Starbucks uses AI to tailor and present personalized recommendations to every single one of their customers, and Sephora uses AI with chatbots to improve customer service and help customers find the products best for them. Source 6 talks about how Facebook and Instagram use AI to build a recommendation engine, which helps with marketing and gaining new customers, how Youtube uses AI to find the best recommendations for its users, and how Spotify, the Wall Street Journal, and Sephora use AI chatbots for better communication with customers. Overall, these sources talk about how companies use AI to increase their earnings. By this point of establishment, these companies are seemingly less concerned with customer conversion and more with increasing revenue, which is an application AI can help with.

In contrast, other sources provide advice and examples of how AI can help a business, how AI can fail, and other topics that are more geared for startups that are trying to wrestle all parts of creating a presence for themselves. Source 12, for example, talks much about how AI should be treated for a business to succeed. Rather than treat AI as a catch-all, newfangled solution for all of a business's problems, source 12 argues that AI needs a direction, a reason to be used, and be treated as an improvement to existing processes, not a new addition to an existing business model. Source 13 is similar, where Accenture sees many different businesses failing to use AI because they do not follow the right steps to success.

Source 1 also provides an excellent example of how AI implementation can help startups meet or even surpass the powers of a well-established business, with Tomorrow Sleep and Casper Mattresses. Casper had been around for nearly half a decade before Tomorrow Sleep, and was a very renowned brand in the mattress industry. They used business tactics from their generation, most recently adding pseudo-AI chatbots to their website to help improve customer experiences. Tomorrow Sleep, however, used AI as a weapon to make the

most of their resources. Within a year, Tomorrow Sleep outranked Casper for key topics regarding sleep and Tomorrow Sleep's organic traffic rose 100 times from its original click rate of 4,000 per month. This example singlehandedly showcases how immense of an impact AI can have on a business. Tomorrow Sleep's use of AI brought it past 5 years worth of organic marketing strategies and helped Tomorrow Sleep become economically viable. Without AI, Tomorrow Sleep definitely would have had a path more similar to Casper Mattress, taking years using older tactics to meet the same foundation that it made in a single year with AI.

Through grouping the sources like this, we can see how time of establishment affects AI implementation in a business: the younger a business is, the more successful it will be if it uses AI to appeal to consumers and, the older a business is, the more successful it will be if it uses AI to bring more revenue from the existing consumer population. This, I would argue, is very similar to how businesses would approach marketing tactics in the past, before the invention of AI. The venture business cycle looks like this: startup, growth, maturity, and decline. They would use different marketing strategies based on which stage of the cycle they were in. With the invention of AI, it simply looks like these stages develop more quickly than before. The stages of this life cycle remain the same, but businesses travel through the stages in less time than ever before and with more success than ever before.

The second order codes from my data table also link back to my literature review from earlier. Soni et. al (2020) actually provides a very similar precedent, back in 2017 and 2018. Their research supported the idea that AI usage would grow over time, become more efficient over time, and greatly influence competitive advantage in the future. My research supports all of these claims, and extends their work with newer data.

Conclusion

As we have seen, the successful adoption of AI by young companies can greatly affect the growth of these companies over time, meaning that this research provides insight into how existing companies' policies change to reduce or aggravate the impacts of AI implementation. affecting theory, practice, and policy in the social media marketing industry. Theoretically, my work adds to our understanding of how AI implementation across time as well at different organizational stages impacts firm performance. By comparing data about different companies of different ages, I was able to conclude that the extended use of AI leads to higher numbers in several success-defining measures. For practice, this research can help companies in social media marketing as well as similar industries forecast and plan strategies for future operations. I've investigated the "success" of businesses in the current market conditions, so other businesses may be able to use the outcomes of this study to redesign business models and practices to build future competitive advantage. Finally, this research has policy implications, as it can contribute in shaping technology and data privacy policies in the private and public sectors.

Limitations

The project had a set deadline, so the biggest constraint I faced was probably scope and time available for the project. These constraints also limited my data collection. My original plan was to collect primary data in the form of interviews with established industry professionals, and a part of this was to reach out and conduct said interviews. Unfortunately, due to the time constraints, as I did not receive any positive responses within the allotted time, I had to switch to using secondary data sources, which while insightful, would have benefitted from being coupled with primary data. Future quantitative or mixed method work that utilizes primary data can

help test observations, while qualitative exploratory research can help answer questions about how the adoption of AI influences individuals within organizations.

Acknowledgments

I would like to thank my advisor for the valuable insight provided to me on this topic.

References

- 13 measurable marketing metrics that define success. Valve and Meter. (2021, April 26). Retrieved July 21, 2022, from <https://valveandmeter.com/measurable-marketing-metrics/>
- 4 reasons for Artificial Intelligence (AI) project failure. AIMultiple. (n.d.). Retrieved September 2, 2022, from <https://research.aimultiple.com/ai-fail/>
- 5 ways AI has impacted social media. Unboxsocial. (2022, May 27). Retrieved September 2, 2022, from <https://www.unboxsocial.com/blog/ai-impact-social-media/>
- AI maturity: Only 12% of companies are 'ai achievers'. ZDNET. (n.d.). Retrieved September 2, 2022, from <https://www.zdnet.com/article/what-is-ai-maturity-and-why-does-it-matter/>
- AI, H. F. (2019, October 11). The impact of artificial intelligence on social media. Medium. Retrieved September 2, 2022, from <https://medium.com/humansforai/the-impact-of-artificial-intelligence-on-social-media-579345b6f751>
- Alexa. (2021, August 18). Why AI is vital to social media marketing success: Keensights. Keenfolks. Retrieved September 2, 2022, from <https://thekeenfolks.com/ai-social-media-marketing/>
- Davenport, T., Guha, A., Grewal, D. and Bressgott, T., 2020. How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science*, 48(1), pp.24-42.
- Dev@kodzilla.pl. (2022, August 19). How artificial intelligence is Transforming Influencer Marketing Industry (update: 2021). Addepto. Retrieved September 2, 2022, from <https://addepto.com/how-artificial-intelligence-transforming-influencer-marketing-industry/>
- Discover these 5 amazing ways of how AI influenced Social Media. Social Hire. (n.d.). Retrieved September 2, 2022, from <https://social-hire.com/blog/small-business/5-ways-ai-has-massively-influenced-social-media>
- Norris, P. (2021, November 18). 10 impressive examples of AI in marketing. Social Media Strategies Summit Blog. Retrieved September 2, 2022, from <https://blog.socialmediastrategiessummit.com/10-examples-of-ai-in-marketing/>
- Nunez, S. (2021, November 15). Why AI investments fail to deliver. InfoWorld. Retrieved September 2, 2022, from <https://www.infoworld.com/article/3639028/why-ai-investments-fail-to-deliver.html>
- Olga-Egorosheva. (2021, December 16). The impact of artificial intelligence on social media. Spiceworks. Retrieved September 2, 2022, from <https://www.spiceworks.com/marketing/ai-in-marketing/guest-article/the-impact-of-artificial-intelligence-on-social-media/>
- Renderforest. (2022, May 11). The power of AI in social media marketing. Renderforest. Retrieved September 2, 2022, from <https://www.renderforest.com/blog/ai-for-social-media-marketing>
- Soni, N., Sharma, E.K., Singh, N. and Kapoor, A., 2020. Artificial intelligence in business: from research and innovation to market deployment. *Procedia Computer Science*, 167, pp.2200-2210.
- Troncoso, D. J. (2022, June 27). How to leverage AI for Social Media Marketing. MarketSplash. Retrieved September 2, 2022, from <https://marketsplash.com/artificial-intelligence-for-social-media-marketing/>

- Verma, S., Sharma, R., Deb, S. and Maitra, D., 2021. Artificial intelligence in marketing: Systematic review and future research direction. *International Journal of Information Management Data Insights*, 1(1), p.100002.
- Williamson, R., & Williamson, R. (2021, October 29). The impact of AI on social media marketing. *Data Science Central*. Retrieved September 2, 2022, from <https://www.datasciencecentral.com/the-impact-of-ai-on-social-media-marketing/>