**Abstract**

This is a study conducted in the field of digital marketing with the usage of AI, the aim of

the study was to find the impact that AI currently has on digital marketing and what it could

look like in the future. The structure is divided into five different sections, introduction,

method, literature review, results, and conclusion. Introductions explains the basics of AI,

as well as the setting and process of the study. The theory part was crafted from various

scientific articles found online and some websites. The literature review goes deeper into

different forms of AI and how they work, it also separately explains the basics of digital

marketing and how forms of AI can be used in digital marketing. In the result section the

interview material is written down and discussed around the topics that are explained

below. The references were picked with the date in mind, and they go through some of the

technical aspects of AI and Digital marketing and, also how it is used combined.

Conclusion mentions that AI can greatly benefit the field of digital marketing but requires

for marketeers to be ready for change and eager to learn new things.

INTRODUCTION

Artificial Intelligence has been in the spotlight for some time now. It is a complex and broad subject. Defining Artificial Intelligence may be challenging to do because of its nature, but the author will characterize it as a human-made software in computer science for the intent of imitating human work. (McCarthy, J., 1998). A collection of sub-fields is included in Artificial Intelligence:

• Machine learning

• A neural network

• Deep learning

• Cognitive computing

• Computer vision

• Natural language processing

Machine learning automates the development of theoretical structures. Methods from neural

networks, mathematics, operations analysis, and physics are used find different forms of data

without letting the software know about certain structures or what to search for.

Neural network is a form of machine learning, that consists of coordinated neurons that process information by reacting to external inputs and transmitting information between units.

Deep learning utilizes massive neural networks with many layers of processing units to learn

complex patterns in large amounts of data, taking advantage of advancements in computing power and advanced training techniques. Common implementations provide identification of

photographs and expression.

Cognitive computation is an AI sub-field that attempts a normal, human-like computer communication. Through AI or cognitive processing, the final goal is to realistically simulate experiences from a computer, so that it can be understood through objects and voices and to create an accurate response related to humans.

Computer vision is for acknowledging what a picture or video material is displaying, it uses

pattern recognition and deep learning to create the process. We may capture images or videos in real time and display their surroundings while machines can process, analyze and comprehend objects.

**Artificial Intelligence in Digital Marketing**

Marketing, especially Digital Marketing, would be the area that will have the most leverage of Artificial Intelligence. Businesses have begun to keep up with current patterns slowly but surely in the last year. The author believes it is still relatively minimal and could be used to a greater extent. Since 1959, Artificial Intelligence has been around but before it was seen as too expensive and risky to engage in from the perspective of a corporation. Recently, marketers have gotten up to-date, and businesses are slowly starting to notice the great advantages it can offer to the company. This is a collection of properties that a Digital Marketer in business could use and is of great value:

• Creating and generating content

• Curation of data

• Email Marketing

• Digital advertising

• Web search

• Chat bots

• Predictive analysis

For quite some time now, content creation by methods that use Artificial Intelligence has been in use. Such methods are used by journalists to produce posts. The method analyses previous data and information and generates a copy ofS an article to be published.

Curation of Data is widely used to make custom product suggestions that the consumer will find useful, such as the usual "people who buy X buy Y as well," as we see on Amazon continuously. The recommendation feature of Netflix will also provide you with reviews for movies and TV shows that you may find interesting.

In Email Marketing, previously mentioned machine learning will evaluate loads of product data to determine the optimal time to send, including the optimal frequency, the material that best suits that individual consumer, and what kind of titles and subjects they want to read.

In Digital advertising, for example, ad platforms from Facebook and Google already use machine learning or artificial intelligence to identify people more likely to take the required action of the advertiser. To do that, they evaluate data about the customer, such as their preferences, backgrounds, and other things to understand and identify the best audience for their product.

Artificial intelligence has made two major advances that have revolutionized Internet searches and search engine optimization (SEO): voice search and Google's algorithm, Rank Brain. To get much more relevant search results, Google's machine learning algorithm, Rank Brain, was developed. It interprets the voice searches of the user and provides the user with the best results depending on what it learned from the vocabulary and meaning of the user using the strength of AI.

Moving to Chat bots, Chat bots make the process of automating answers to frequently asked

inquiries from potential buyers much simpler by offering them a way to find the product or service they are searching for.

There are several fields where predictive models can be implemented, and advertising is no

exception. Such models allow the possibility of a particular prospect becoming a customer to be expected. Certain factors can also be predicted such as the quoted price needed to make a

transaction, or which consumers are more likely to make more than one order. The trick here is to note that predictive models are just as strong as the information you provide when you build them. Therefore, if your information includes inconsistencies or a high level of randomness, it will not be able to make predictions that are right or reliable.

Thanks to the information which acts as a forward-thinking component, Predictive AI software can turn marketers from reactive to strategic planners.

OBJECTIVE OF THE STUDY:

PRIMARY OBJECTIVE:

* A study on artificial intelligence in digital marketing.

SECONDARY OBJECTIVE:

* This study aims to discover different methods and tools for Artificial Intelligence that is used in digital marketing.
* The research even tries to find out how Artificial Intelligence technology is developing and supporting digital marketers.
* The impact of Artificial Intelligence in digital marketing today.

**LIMITATIONS**

There is a lack of previous research done precisely on the same topic as the author which might create partially biased views. Interviews are conducted by asking the participants about their own feelings and experience which might result in different opinions depending on their work knowledge and experience. Time constraints can be visible in the interviews which might result in varied answers. Some of the research questions can affect the interviewees on personal level more than an experience level which means that they results might vary depending on the person.

**LITRATURE REVIEW**

AI is the art, method, and engineering ability to create intellectual software, computers, and other machines, according to (McCarthy, J., 1998, p. 2). McCarthy explains "intelligence" as a computing element capable of achieving the goals of the world. But (McCarthy, J., 1998, p. 3) says that comparing human intellect to computer intelligence, does not further improve the relation humans have about being place in a software as there are many nuances in the minds of people. People tend to be irrational in their actions. Some of us are uncompromising and unpredictable. As a result, programming the human mind into a machine could not work for us. Nevertheless, AI's overall goal is to overcome issues and reach goals just as people in everyday situations would face them (McCarthy, J., 1998, p. 4)

**Machine learning**

Machine learning as described by (Sterne, J. 2017, p.10) is designed to learn instead of following harsh guidelines, as its name suggests. What ML can achieve is advancing with new encounters and experiences.

According to (Chaffey, D. & Ellis-Chadwick, F. 2019), predictive models and algorithms with the ability to learn without explicit programming are created and applied. The computer models then make success predictions based on patterns from historical data. These are used to define rules to automate tasks such as targeting media or emails with the most relevant creative offer to the most valuable segments. These algorithms are of massive advantage to organizations, according to (Sterne, J. 2017, p. 8-9). The author states that a well-trained ML algorithm can do assignments on the same levels as a human, this creates the tough about it being a better option for the marketing department than some marketing staff.

(Sterne, J. 2017, p. 12-13) explains that ML searches and seeks to understand patterns. Understanding one pattern or trend helps ML apply its lessons to other organizational problems that occur. In addition, Sterne adds that ML's beauty is that it builds systems that build themselves. Machines are keen to change their views on the information they obtain instead of learning from data. Machines change the way different experiences are understood.

Machine learning is crucial in the current world we are living in, full of surprises and chaos, this gives the ability to use machine learning for learning (Alpaydin, E., 2016, p. 17).

These algorithms are of massive advantage to organizations, according to (Sterne, J. 2017, p. 8-9). The author states that a well-trained ML algorithm is capable performing tasks as well as individuals, leading to the belief that ML technologies are cheaper and more reliable assets to the marketing department than some marketing staff.

**Social Media Marketing**

According to (Chaffey, D. & Ellis-Chadwick, F. 2019) social media companies like Facebook, Instagram, LinkedIn, Pinterest, Snapchat, Twitter, and other social networks that have majority of the users, are often recognized as the most important by consumers and businesses. But social media is much more than that. There are different methods of social media and gathering information too. Included among these are customer communication and encouraging user generated content (UGC), such as client reviews and consumer feedback.

He also mentions that social media advertising is focused on how we can leverage consumer-to consumer (C2C) interactions to raise our brand's visibility by amplifying social media and eliminating negative references. To order to make efficient use of this for interaction, it is important to understand that social media entail participating to conversations and sharing ideas and information, mostly encouraged by social networks, but can occur elsewhere.

**Email Marketing**

One of the most profitable channels for marketing is still to this day email marketing. A survey conducted recently has shown that one dollar spent on email marketing can give you the amount 40 € in (ROI) (Ward 2019). Pitch sales is clearly the solution you should get out from this. Several times emails are used to send newsletters or important information for a consumer, but this can still improve the ROI (Ryan, 2017, p.153-155.)

(Sterne, J. 2017, p. 191) explains that emails are designed for a variety of purposes, such as delivering a message of welcoming a new consumer, maintaining a current customer bond, or just using the channel for ad placing. AI greatly improves the chances of analysing the emails in the right way to get the most out of every single customer. Analysing different contents of the email to see what give the right reaction from a customer.

(Sterne, J. 2017, p.192) continues by adding that AI can determine the best timing for e-mail addressing, it can figure out what type of emails have a higher chance of being opened, it can suggest different subjects, figure out the structure of the email, it also saves the previous data of a certain type of consumer so it can measure and insert the right type for a certain group of members. A marketing employee can succeed in these tasks just fine, but the amount of time saved by AI is significant for the ROI, making it a money saver.

**Search Engine Optimisation**

Ryan (2017, p. 63) says that search engines are the Pot of Gold for all marketers in charge of online related tasks. It can also be said that the Pot of Gold is enormous data files and different analytics available for marketeers in 2019. Text data is capable presenting crucial ways of the customer and can build up analyses with text analysis as a structure. (Sponder & Khan 2018, p.225). Although text analysis may not seem to be linked to the SEO-thisis simply not the case. Nowadays, customer feelings can be more deeply understood by text analytics marketers (Sponder & Khan 2018, p. 226). This kind of information is invaluable. The opportunity for marketers to be aware of terms such that consumers share content offers a chance to be put on the first page on each search engine. To receive a sentiment analysis, this requires ML technology, a text miner (Sponder & Khan 2018, p.227).

In a way you could imply that SEO is content, (Sterne, J. 2017, p. 150-151) explains that gathering legitimate online material is crucial for marketers. Google or Yaahoo! for example have the power in a situation where they believe it is misleading or not displaying correct information to be kicked off SERP or just list the page so deep that consumer never look for it.

**Research Method and Analysis**

Research method for this thesis is qualitative, because of the semi-structured interviews with open ended answers. The definition for, primary data is data that has been created by the author for the thesis. Secondary data is fetched and collected from various databases and sources from the internet or books, that has already been published or written by someone else. (Saunders et al. 2009).

**Chat bots**

Organizations have slowly but surely started to figure out the different benefits of a chat bot implementation into their business. From the point of view of user experience, they are superior in helping improve the down time of getting an answer to urgent questions and information searching. Chat bots can use natural language dialog to "orchestrate" processes across multiple applications. This improves the overall experience of a customer service situation because it is generic and gets the job done moving information faster and for some consumers, it can be crucial to the information, they need fast. On top of that they certainly provide a lower cost option for customer service in general. (Accenture, 2017).

**RESEARCH METHODOLOGY**

Research can use the scientific method but need not do so. Research methodology is a way to systematically solve the research problem. The research methodology in the present study deals with research design, data collection methods, sampling methods, survey, analysis, and interpretations.

**3.1 RESEARCH METHODOLOGY:**

A research process consists of stages or steps that guide the project from its conception through the final analysis, recommendations and ultimate actions. The research process provides a systematic, planned approach to the research project and ensures that all aspects of the research project are consistent with each other.

**3.2 Research Design**

A research design is the arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure.

• A well-structured questionnaire is framed.

• Data is collected from the consumers of Chennai

• Findings are made and necessary suggestions and recommendations are given.

Descriptive Research Design

A descriptive research design was used. Survey design was adopted in this study. 51 questionnaires were distributed among the employees of organization. In this paper data has been collected through questionnaires. Dimension of employee commitment was measured with 5 items on a point liker scale ranging 5= Highly Satisfied, 4= Satisfied, 3= Neutral, 2=Dissatisfied, 1= Highly Dissatisfied.

**3.3 SAMPLING DESIGN**

Sampling design is plan for obtaining a sample from the sampling frame, the must be consistent with relevant population. This allows the data obtained from the sample to used in making inference about the large population.

**Sample size**

1. Sample size - 95.

**Sampling method**

Under non – probability sampling convenience sampling method can be used.

**SAMPLING TECHNIQUES:**

A structured questionnaire has been prepared to get the relevant information from the respondents. The questionnaire consists of a variety of questions presented to the respondents for their answers. PROBABILITY METHOD – Convenience sampling.

**3.4 Data collection methods:**

Data collection is one of the most important aspects of research. Two types of data are Primary Data and Secondary Data.

❖ Primary Data

❖ Secondary Data

**• Primary Data** - Primary data is gathered from direct observation or data personally collected. It refers to that data that is collected for a specific purpose from the field of enquiry and are original. For the project, primary data is collected from respondents using a questionnaire. A structured questionnaire must be designed with a series of close-ended and open-ended questions along with an appropriate rated scale.

**• Secondary Data** - Secondary data is second-hand information about an event that has not been personally witnessed by the researchers. The use of secondary data saves time and money. The purpose is to increase the accuracy of the analysis. Here the secondary data was obtained from various journals, research papers, websites of the organization, etc.

**3.5 MEASUREMENT SCALE AND TOOLS**

Questionnaire was the main tool for collecting the data. Hence, pain has been taken to construct the questionnaire in a systematic way by converting adequate in and relevant questions to ensure in achieving the research objectives.

**Data analysis Tools**

The data collected from the primary sourced were arranged sequentially and tabulated in the systematic.

**CHI – SQURE TEST:**

The test is non-parametric test. The symbol is a Greek Letter chi (K). The describes the magnitude of the discrepancy between theory and observation it is defined as [(O-E)² / E].

O = refers to the observed frequency

E = refers to the expected frequency.

First the expected frequency is calculated using the equations.

E = RT × CT / N

RT = Row total for the containing the cell.

CT = Column total for the column continuing the equations.

N = Total no of observations.

The difference between the observed and expected frequency is calculated and the value (O-E)² is obtained.

The value [(O-E)² / E] is calculated and the value sigma gives the chi- square value and it range from zero to infinity. Then sigma value is compared with chi-square [x²] table value at the level of significance for testing the hypothesis.

**QUESTIONARIES**

1. Gender category of respondents

1. Male
2. Female

2. Marital status category of respondents

1. Married
2. Unmarried

3. Responses regarding educational qualifications of employees

1. Uneducated
2. High School
3. Higher Secondary
4. Diploma / Degree

4. Responses regarding experience of employees

1. Less than 1 year
2. 1-2 years
3. 2-3 years
4. 3-5 years
5. Above 5 years

5. Responses based on salary

1. Less than 10000
2. 10000 – 20000
3. 20000 – 30000
4. Above 30000

6. The adaptation of AI in marketing increases the marketing expenditure of the company while acquiring but it significantly reduces the marketing cost.

a. Strongly disagree

b. Disagree

c. neutral

d. Agree

E. disagree

7. Artificial Intelligence has a direct effect on Digital Marketing.

a. Strongly disagree

b. Disagree

c. neutral

d. Agree

E. disagree

8. Artificial intelligence can provide superior customer experiences and influence consumer behaviour to purchase goods and services.

a. Strongly disagree

b. Disagree

c. neutral

d. Agree

E. disagree

9.  Artificial intelligence in digital marketing improve service quality and operational efficiency.

a. Strongly disagree

b. Disagree

c. neutral

d. Agree

E. disagree

10. Artificial intelligence helps to build trust in digital platforms.

a. Strongly disagree

b. Disagree

c. neutral

d. Agree

E. disagree

11. The major influencing factor in integrating artificial intelligence in digital marketing

1. Competitive pressure
2. Internal pressure
3. Media attention
4. Digital maturity
5. Enhance customer experience

12. The ethical aspect of AI in marketing.

1. Loss of job
2. Privacy of data use
3. Security
4. Transparency
5. Accountability
6. Accuracy and reliability

13. Thinking about the marketing technology you use today, what percentage of those

technologies use AI today

1. I don’t know
2. None
3. Less than 25%
4. 25% - 50%
5. 50% - 75%
6. 75% - 100%

### 14. To learn about AI that can make better decisions on how to use AI in future.

a. Strongly disagree

b. Disagree

c. neutral

d. Agree

E. disagree

### 15. AI functions will be developed by the exhibition industry itself

a. Strongly disagree

b. Disagree

c. neutral

d. Agree

E. disagree

16. The rise of artificial intelligence in digital marketing poses a threat to peoples job security.

a. Strongly disagree

b. Disagree

c. neutral

d. Agree

E. disagree

17. Artificial Intelligence in digital marketing can have positive impacts on people’s wellbeing.

a. Strongly disagree

b. Disagree

c. neutral

d. Agree

E. disagree

18. Much of society will benefit for future fall of AI in digital marketing.

a. Strongly disagree

b. Disagree

c. neutral

d. Agree

E. disagree

19. AI in digital marketing can help people feel happier.

a. Strongly disagree

b. Disagree

c. neutral

d. Agree

E. disagree

20. The next big tread in marketing.

1. Consumer personalization
2. Artificial intelligence
3. Voice Search
4. Mobile optimization
5. IOT application
6. Block chain
7. Virtual reality
8. Account based marketing
9. other