# Artificial intelligence influence on trusting customer relationships in digital marketing

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## Abstract

The digital society has developed in recent years drastically as artificial intelligence has taken on a greater role. Plural companies have begun to see the potential of applying artificial intelligence in digital marketing purposes with customers. Despite the benefits of artificial intelligence, there are concerns many people that human interaction decreases. One reduction of human interaction can in turn complicate the creation of trusting customer relationships about artificial intelligence gets an advantage. This thesis obtains a qualitative research method and the empirical material was gathered through semi-structured interviews with seven respondents.

Keywords: Artificial intelligence (AI), digital marketing, digital communication, customer relationships and trust
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## 1 Introduction

According to [12], philosophies have for over 2000 years worked to understand and solve two questions within the universe: how does the human brain work and can non-humans have a mentality? In connection with this, several philosophers have spoken of artificial intelligence, which according to founder John McCarthy, stands for "the science and technology of creating intelligent machines, in particular intelligent computer programs. This is a branch of computer science from studies where the design of artificial intelligence aims to create a computer, a computer-controlled robot or software that can think intelligently [12]. [4] emphasize that artificial intelligence is the next big digital revolution in the market and is therefore called "the fourth industrial revolution".

[12] believes that it was not long ago that artificial intelligence only appeared in science fiction film adaptations. In today's society, this reality is like constantly growing larger and more prominent in several industries [12]. In a report for Sweden's Municipalities and County Councils, [1] on the access that exists today to infinite amounts of digital data and advanced technology. This makes it possible to imitate and sometimes exceed human ability to absorb, process and apply information in an intelligent way. Furthermore, the authors write that researchers all over the world are constantly immersing themselves in and develops artificial intelligence for new areas and industries. The ideas of which the possibilities that artificial intelligence may bring in the future are many [1].

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Figure 1: Hype Cycle for Digital Marketing

Both [11] and [10] point out that artificial intelligence is intelligence like displayed by machines. In other words, it is a computer program that mimics human behavior and thinking as the program can perform tasks that normally require human intelligence [11]. [10] believes that systems like these can come for use when companies consider that staff are not sufficient to perform effectively tasks, even where recurring tasks have the opportunity to be automated to save on human resources. Tools based on artificial intelligence can read keywords and different patterns in complex and unstructured documents to find significant information [8]. [16] just like [20] calls this data mining as it forms a basis for both artificial intelligence and machine learning. Furthermore, the authors emphasize that Machine learning is a way for systems to memorize things without being clear programmed.

In recent years, the digital society has developed drastically in connection with that artificial intelligence has taken on a greater role. Today, virtually all people have access to internet which results in the use increasing constantly. [24] just like [22] emphasize that factors that govern the digital society are social media, digital technology and the internet. The authors believe that it is these who contribute that digital marketing is the market leader today.
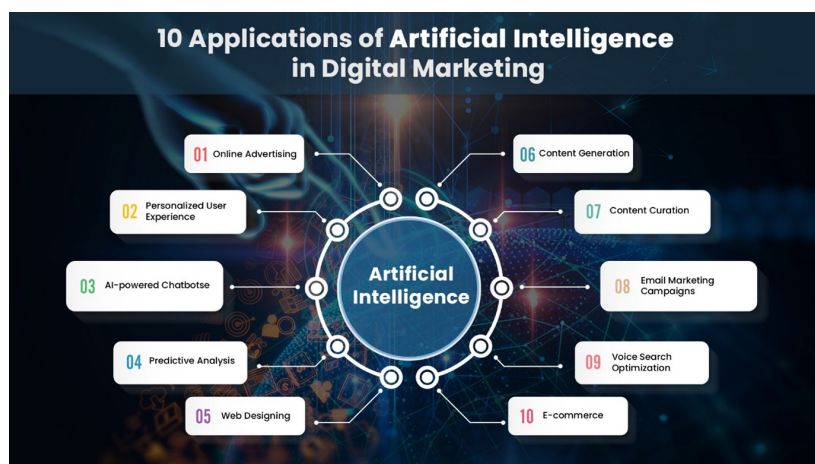


Figure 2: Various applications of AI in digital marketing

According to [17], more and more companies have begun to see the potential of using artificial intelligence in digital marketing purposes with consumers. With its ability to collect data, analyze it and then apply it to learn from it, change artificial intelligence the digital strategy [17]. [10] believes that companies the world today does not use artificial intelligence in its digital marketing only to facilitate but also to improve. This then the advanced technology that artificial intelligence is developed in makes it possible to scan several thousand different data on just a few minutes [10]. [17] claims that with artificial intelligence as an aid, companies can gain a deeper insight into what their customers are asking for and responds to. They can also get an idea of customers' buying patterns and preferences which affects digital communication very much [17].

## 2 Literature Review

According to [23], the concept of artificial intelligence originated as early as 1956. [16] further explains that the concept can be divided into two main directions, which are general and narrow focus. The specialization that is currently used the most extent is the narrow one, which has uses in facial recognition, language translation and self-driving cars [9]. Regarding it general orientation in artificial intelligence, it has not reached as far as this targeting means that AI systems exhibit intelligent behavior similar to that advanced intelligence that humans contribute [9, 11]. However, [15] argues that artificial intelligence can be defined as that of computer science branch where automation of intelligent behavior is concerned. Furthermore, [20] emphasizes that artificial intelligence is applied when the functions of a system begin to catch up with humans intellectual behaviors and abilities. The author goes on to explain that this can be everything from problem solving to learning, which is done with the help of machine learning.

[15] explains that artificial intelligence is part of computer science and must therefore be based on sound theoretical and applied principles in this field. The principles include the data structures used in knowledge representation, the algorithms needed to apply the knowledge and the languages and programming techniques used in implementation [15]. [20] adds that machine learning is based on data and algorithms. Algorithms have specific constructions and are a big part of a learning process as they make it possible for computers to learn from data, in order to create their own forecasts for new data that occurs [20]. Furthermore, [7] believe that the type of algorithm used depends on the type of use machine learning should have.
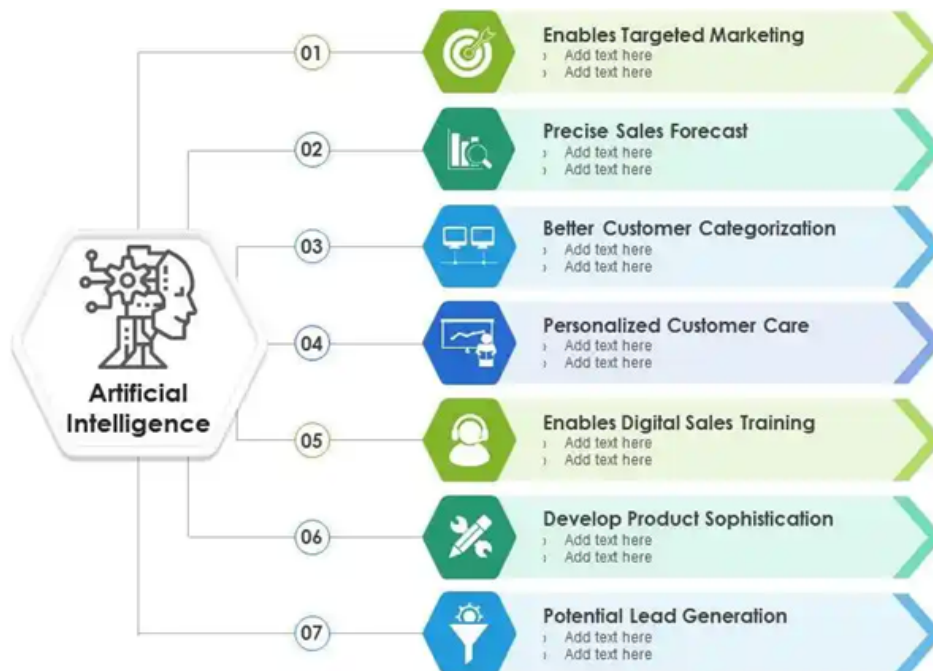


Figure 3: Benefits of applying AI in digital marketing

Machine learning explains [9] and [20] as one statistical process based on data from databases and algorithms. These help the computer to evaluate and analyze that the AI system can explain or even predict future data. The authors go on to explain that machine learning has that mission to teach computers to perform tasks using the study

of different types of training data. [8] claims just like [14] that the data consists of what the computer intends to learn and through this be able to identify and pay attention to hidden patterns. The authors believe that from the emergence of artificial intelligence about fifty years ago has been an increasing computing power that has done that computers today can handle more complex problems than before. [14] also claim that the development of storage capacity that has taken place during these years made it possible for computers to examine larger amounts of data in connection with machine learning. In addition to storage capacity has other type of data that can be connected big data has become available, of which texts, images and transactions are examples [20]. Furthermore, [25] emphasizes that machine learning has become a large part in artificial intelligence. The author believes that it is a process that does enabling AI systems to maximize their analytical and predictive capabilities when they exposed to new data, even in cases where there are no algorithms that tell exactly how the learning process should go to.

The increased amount of available data, also known as big data, has made it possible to Artificial intelligence using machine learning can learn on a more complex level (Bean, 2017). This explains the author due to the fact that larger mounted training data can be used that allows the system to memorize things both better and faster, also provide safer results. According to Gheisari, the term big data means [6] to collect, process and present outcomes of large amounts of data in high speed and in many different formats such as images and texts. Different types of social media can with the help of artificial intelligence process big data from its service. Also provide users with news that is relevant based on interests and face recognition on uploaded images [8].

[2] argues that the goal of artificial intelligence as a science is to achieve machines to perform things that would actually require human intelligence. It's on because of this as the answer to the question 'can machines think?' is crucial to the discipline. The author believes that the answer to that question is not so obvious that it is possible to answer neither yes nor no, but one imagines that the Chinese supercomputer became self-aware. It has access to the internet where information on most things is available, for example on how a bomb is constructed. [12] therefore states that there is a risk of a supercomputer obtaining artificial intelligence with fast processing speed will learn just this in a very short time, when it comes be able to learn most of what is available on the internet.

The disciplines implied by artificial intelligence are very different [12]. It can cover everything from the fields of knowledge in mathematics, psychology, philosophy, logic, technology, social sciences, cognitive science and computer science. All mentioned Areas of knowledge are important and closely interconnected, which is important when it comes to artificial intelligence. The author believes that all these fields and sciences contribute to the creation of human-like intelligent machines. [15] argues that the uses of artificial intelligence are different and can range from robotics, learning systems, logic programming, natural language processing, facial recognition and scheduling. Furthermore, the author explains that because of all the different the terms of use, the term intelligence is difficult to define and understand. Several can claim to understand intelligent behavior but it is doubtful if anyone could define what intelligence is to the extent that it could be used for development of an intelligent computer program. [12] believes that because of this artificial intelligence is relatively underdeveloped. Furthermore, the author explains that it completely simple is a tool that can be controlled, controlled and modified to operate bidding for the human controller.

Another interesting use in artificial intelligence like many companies uses are chatbots. [17] and [18] believe that companies use chatbots to communicate with their customers via chat rooms in order to offer faster and direct answers. The chatbot works through machine learning and can answer open questions asked by customers [17, 18]. [17] further states that there are also advanced chatbots that offer reality-based shopping experiences. There, customers can try both clothes and cosmetics virtually.

Edvardsson (2005) argues that consumers can be described as "co-producers" and explains that there may be a closeness between "co-producers", process quality and result quality. Furthermore, Parasuraman (2010) explains the importance of consumers "Co-production role" where Dong et al. (2007) talk about customer participation in relation to follow-up of mistakes, complaints and misunderstandings that sometimes arise. Johnston and Clark (2005) also talks about customers as "co-producers" and says that they are one fundamental part of the atmosphere of other customers. Normann (2000) defines customer participation in such a way that the customer participates in the process itself, ie the consumer is a participating and active player. Based on the international concepts "Co-producer" and "participation" a third concept has been added, which is creation" which can be related to the emergence of service-dominant logic and value. To further define the role of the consumer in service and trade can to observe interactive marketing features and their importance. The interactive marketing functions emphasize the importance of the meeting between staff and customer and other production resources.

According to Vargo and Lusch (2008), a service perspective on marketing means that companies collaborate with and learn from customers but also to be able to adapt to them dynamic and individual needs. In this way, companies create value together with consumers and marketing then becomes a process where both company and customer are

active. Gummesson (1987) also says that interaction in marketing is important then the customer's participation in the service process is of great importance in relationship marketing for that as strong a value as possible should be created. By considering a customer as co-producer in the process of creating value, it becomes even more important to cherish consumer participation. The author believes that it is for this reason that the relationship between seller and customer begins already in the marketing process.

Oliver, Rust and Varki (1998) believe that companies should use marketing in this way that they work with "real-time marketing" with a connection to the consumer who co-producer. This type of marketing coordinates relationship marketing and customization by interactively designing offers that suit several different consumer needs. In this way, the customer is a basic co-producer who should be involved in the entire value-creating process instead of being a target for targeted marketing activities. Mannervik and Ramirez (2001) believes that there is a great possibility that customer loyalty increases about companies chooses to involve customers in the value-creating process. This then emotional ties to the company are developed and strengthened as customers get to feel involved. Further the authors claim that the technological development that has taken place has made it possible with a redistribution of the traditional roles in marketing, which has led to a development in value creation in the form of new systems. Edvardsson et al. (2006) explains that today's consumers are more knowledgeable and more demanding than before when they have access to more information. The authors claim that this makes it even more important to companies see consumers as a valuable asset that can help businesses to develop and come up with new improved solutions.

## 3 Research Methodology

[3] describe that there are two different research methods to use from when conducting a survey, which are qualitative and quantitative methods. The quantitative method usually presents data in the form of numbers based on analyzes of collected numerical data [3, 19]. [21] instead believe that qualitative data is presented in words. At a qualitative research method, researchers aim to create a more nuanced picture of a specific research area.

Qualitative research includes various data collection methods where interviews and observations are two common alternatives [21]. A qualitative analysis can be divided into two different groups called interpretation phase and immeasurable quantities. During the interpretation phase, an interpretation is performed of the data collected from the result of a quantitative analysis. Immeasurable quantities are based on human perceptions and attitudes towards different events [5]. [21] speak further on how the purpose of qualitative interviews is to discover but also identify respondents' perception of a substance or activity. A qualitative interview receives a low degree of standardization, that is, the questions asked by the interviewer asks, the respondent may answer in his own words [21]. Maple too Svensson (2015) believes that it is an advantage to start from interviews to come closer to the people and the environment the researcher intends to investigate.

This study applies a qualitative method as the thesis aims to create an understanding of artificial intelligence as a concept, but also its influence and future development in digital marketing and in trusting customer relationships.

## 4 Findings and Analysis

[13] mention the great development that has taken place in digital marketing and believes that marketing is constantly increasing over the internet. Respondent 7 proves this and Respondent 6 further believes that an incredible amount has happened in artificial intelligence since the sudden strong improvement in testing the technique. [18] agrees that both artificial intelligence and digital marketing is in a major development phase both in separate places but also in combination together. Respondent 7 explains how artificial intelligence can be used today several fields in digital marketing. The marketer mentions the tool within "Key Word Bidding" as an example in searches but emphasizes that everything has been added more units around time and place. The technology also picks up more signals, such as which device you are on, if you have a misspelling in a search term or if you are geographically close or not.

Respondent 7 continues to speak about how various AI cures have started to be used significantly within customer service where there are several opportunities. Respondent 5 also talks about AI cures and believes that technology has become a major advantage in digital communication. Respondent 4 agrees with this and believes that the technology saves a lot of time for companies in general. [18] and [17] prove this when they explain that chatbots are used by companies to be able to communicate with customers in a smooth and fast way and provide them direct answers. Respondent 6 also talks about what happens most in artificial intelligence is precisely the development of these AI-intelligent assistants that should be able to respond on questions and converse like any human being. So, it's about

training up the technology with machine learning so that he can make his own decisions and read other people, which is something that [20] also talks about when he mentions that it is when people's intellectual abilities and behaviors begin to be imitated systems such as artificial intelligence are beginning to be applied. The author further believes that it is with the help of machine learning as a system for problem solving and learning works.

Respondent 1 claims that the tool can be used when segmenting customers. The technology works by using a population of customers who read them smoothly segmentations that exist. This then constitutes a more efficient identification of customer groups for companies to address in different ways. Bean (2017) emphasizes that this depends on how it increased amount of available data means that artificial intelligence has been able to learn strategies at a deeper and more complex level. Respondent 6 further means that dynamic pricing is also used which calculates the optimal pricing, in order to justify selected people to consume. That is, they offer unique price proposals for individuals. The tool can be used to offer customers a more customized marketing that involves tailoring messages instead of offering one and the same message to several. [17] points this out and states how artificial intelligence works by hand-picking content to create personal connections and adapt the content to individuals.

Respondent 1 also refers to recommendation systems that are commonly used in the majority companies today to identify other consumers with similar buying patterns to one specific customer and then give recommendations to the customer. [27] talk about how to design effective solutions based on the customer's individual needs and preferences can create more meaningful relationships. [18] continues with to explain that intelligent algorithms successfully analyze data from a consumer who based on this can offer personal offers, while the right target group is found for the advertising. Respondent 1 supports this theory by accurately expressing the importance of today individualize their marketing and believe that it has evolved a lot from that companies wanted to be broad in the market.

Respondent 2 adds that artificial intelligence is also used in bidding strategies based on the fact that technology can load significantly more data than is available. Through "Smart Bidding" strategies, target groups, gender, place, are read more where the technology can further calculate where in the buying process a consumer is sig. This then becomes decisive in the decision whether the company chooses to bid on the consumer in ask or not. Respondent 3 confirms this but adds that it is difficult at the same time to know what is actually classified as artificial intelligence and what is just pure automation. Respondent 3 continues by justifying that automation includes letting one programs or the like perform something automatically, this while artificial intelligence within many concepts are described to be able to make their own decisions. The marketer means what includes its own decision and argues that it is basically the company itself that taught it what to do. [9] do not contradict this though argues, however, that it is machine learning for artificial intelligence that has to mission to actually teach the technology to be able to carry out tasks and make decisions based on correct training data.

**T-Test Analysis**

| | | Levene's Test for Equality Of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | T | df | Sig. (2- tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| Artificial Intelligence | Equal variances assumed | .536 | .465 | 2.774 | 385 | .006 | 4.14837 | 1.49563 | 1.20775 | 7.08900 |
| | Equal variances not assumed | | | 2.718 | 226.616 | .007 | 4.14837 | 1.52638 | 1.14066 | 7.15609 |

The above table indicates that the males had a mean of 73.08 and females had a mean of 68.93 and the means differ significantly at the p<.05 level. The value of F- test was .536 which was significant at 0.465 indicating that the variance of the two groups was equal. Therefore T-test assuming equal variance was applied. The T value for equal variances assumed was 2.774 which were significant at .006 indicating significant difference in the trust of consumers when AI is used in digital marketing and when AI is not used in digital marketing.

## 5 Conclusion

Artificial intelligence is still a relatively new and unexplored concept within academic research. Theoretically, this study can contribute with additional perspectives within the chosen topic artificial intelligence and its influence on

trusting customer relationships. Previous studies have mainly focused on whether artificial intelligence is a possibility or a threat to humanity from a theoretical perspective. This study has contributed with an understanding of how companies can work with the artificial intelligence tool in digital marketing in relation to maintaining and creating trustworthy customer relationships. The study has also highlighted the pros and cons of using artificial intelligence in digital marketing in connection with the creation of trustworthy customer relationships.

This study contributes with further understanding of the role of artificial intelligence in digital marketing that further touches on how companies can work to create trustworthy customer relationships in connection with the implementation of the tool. The result as emerged in the study proves that artificial intelligence will continue to obtain one significant role in the future market in digital marketing, but names also the advantages and disadvantages that companies should consider. This is something that is possible can make it easier for companies when deciding whether to implement artificial intelligence in their digital marketing or not, and that they can weigh the pros and cons disadvantages that are perceived to exist.

Companies can thus use the study to formulate adapted working methods for implementation of the tool. By considering the aspects that have emerged in the study, which is considered important to consider so that trust in customer relationships does not damaged, companies can use these to their advantage to facilitate their own implementation. The aspects mentioned are communication, honesty, control and customer participation.

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