

Digital marketing in the era of artificial intelligence

Malak Dargham
Sultan Moulay Slimane University
Laboratory : Systems Engineering
Beni Mellal, Morocco
Email : malak.dargham@usms.ac.ma

Prof. Dr. Hanaa Hachimi
Sultan Moulay Slimane University
Laboratory : Systems Engineering
Beni Mellal, Morocco
Email : hanaa.hachimi@usms.ma

Abstract— Artificial intelligence is a hope for some but remains as a danger for others.

It is both a progress and a nightmare that begins to worry the experts of the sectors by estimating that the arrival and the establishment of the intelligent robots will be a destructive fact of employment and will initiate the replacement of the human by a conscious artificial intelligence. [1]

Artificial intelligence is gradually becoming part of our daily lives and is giving way to transformations that are sometimes fictional and sometimes apparent reality. Like other sectors (health, automotive, industry, astronomy, art ...) AI also affects the marketing sector in general and digital marketing in particular. We can see it clearly: for years now, the web giants, or the so-called GAFAM (Google, Amazon, Microsoft ...) have been implementing artificial intelligence tools in their processes, products and services.

In this paper, we aim to explore various applications of artificial intelligence (AI) in digital marketing. Artificial intelligence has been studied by many researchers using exploration as a secure basis for research. Artificial intelligence has been the subject of investigation since the 1950s, starting with when Alan Turing's question sparked controversy: "Can machines think? "

From there, artificial intelligence plays a central role in the various fields of society. Thanks to artificial intelligence, « automatons recognize articulated speech and understand texts written in natural language, cars drive themselves, robots wage war in place of men, some scientists even seek to conquer death by determining the mechanisms of aging ...

Not only this, but most dimensions of intelligence - except perhaps humor - are the object of rational analyzes and reconstructions with computers, and in addition, machines go beyond cognitive faculties in most areas...» [2]

Considered as a 'game changer' in the marketing industry and beyond, especially content marketing, artificial intelligence has become so powerful that for example, a machine wrote a screenplay that was turned into a science-fiction and the possibilities of evolution never end and who knows, very soon the machines will take over the role of humans.

In this perspective, content marketing intervenes, which becomes MARKETING itself, as a key variable of the research project.

The approach to content marketing has changed over the years, we increasingly hold take into account consumer preferences and trends to satisfy the target.

The world of content is changing at high speed and marked by the arrival of news technologies and alignment with new trends. Content marketing is no longer a project that we carry out in parallel, but it is a project that we explore full time. This paper can serve as a guide for a content manager and a content creator and help him know, how can AI contribute to the evolution of content creation.

Keywords— Artificial intelligence, Digital marketing, robots, IA, machine learning, deep learning.

I. INTRODUCTION

To make sense of artificial intelligence is to give it a direction, a meaning and an explanation. [3]

Giving a direction is based on the objectives of artificial intelligence in relation with the sectors that benefit from its development. [3]

To give a meaning is to emphasize the complementarity between humans and intelligent systems. [3]

And to give an explanation is to lead a reflection on this artificial consciousness and to explain the development of

artificial intelligence, its infinite potential, its use, its power and its limits. [3]

AI affects all sectors, but if there is one sector that is a natural candidate for AI, it is digital marketing, media and communication.

And that's what we will explore during this overview: how digital marketing is evolving in the era of artificial intelligence, and more specifically, how AI is transforming the sector of artificial intelligence, giving some examples of practices, uses and applications of AI in digital marketing.

II. ARTIFICIAL INTELLIGENCE AND DIGITAL MARKETING

The concept of artificial intelligence was born in the 1950's. It is a notion that appeared thanks to the mathematician Alan Turing, in his book *Computing Machinery and Intelligence*, where he raised the question of bringing a form of intelligence to machines. [4]

Artificial intelligence hides behind its operation devices with a common denominator and that is machine learning, or what is also called automatic learning.

The latter is known as a set of techniques that give an algorithm the ability to learn without having been programmed explicitly for each of the instructions.

It is a technology that allows storing a large amount of data in a brain or virtual neural network and also dominates as a sub-discipline, deep learning, where the machine is inspired by the human brain.

Artificial intelligence is making its way into almost every sector and is being implemented in many fields of application.

The evolution of this algorithmic technology is very noticeable and allows us to solve more and more complex problems that we would have thought were reserved to human intelligence.

Starting with a simple chatbot, AI is becoming more and more specialized and efficient and contributes to decision making.

AI has also been introduced and strongly in the field of digital marketing. It is worth noting that 84% of marketing leaders believe that AI is essential to help them achieve their goals. [5]

AI guarantees time savings, accuracy and performance on tasks performed. It has become the marketer's main ally and allows him not only to automate certain tasks but also to obtain results in record time.

In this way, marketing teams can focus on all what is strategic and entrust artificial intelligence with all that is time-consuming tasks where the machine can be autonomous. [6]

Artificial intelligence also promises a better ROI, while boosting marketing actions. A recent study by Accenture estimates that companies that invest in AI can expect to increase their revenues by about 30% over the next 4 years. [7]

A survey by Forbes Insights and Quantcast makes a strong case that artificial intelligence technologies are having a real impact on any company's goals.

Specifically, in numbers: for 52% of marketers surveyed, applications that rely on machine learning help increase sales and 49% say they help launch new products successfully. [8]

III. AI GUARANTEES EVER MORE PERSONALIZED AND EFFICIENT MARKETING

The use of artificial intelligence in digital marketing ensures a 100% personalized customer experience. [9]

AI algorithms tend towards further personalization and offer a unique experience, through the right content, offered at the right time.

Users of a digital platform and consumers of a product or service increasingly favor the personalized approach, where the value proposition is customer-centric, or user-centric.

Artificial intelligence tools analyze through the collected data and propose what will meet the user's need. Personalized recommendations from Amazon, Netflix or Facebook are the best example. The AI technologies used rely on deep learning and Big Data systems to improve the user experience. These tools do not stop there but also generate reports to give the company the chance to review or adapt its digital marketing strategy.

Artificial intelligence also contributes to the emergence of content marketing. [9] Several platforms exist to offer functions related to predictive content technology. This means that they not only evaluate the relevance of the themes composing your content strategy but also give you a taste of how your audience will react to your content. This feeds the machine's algorithm and allows it to propose adjustments, based on competitors' content and the feedback on your content. In the end, the tool proposes new topics, adequate to the needs of your users and guaranteeing a very good user experience, a good referencing of the brand and a large reach on the web.

Artificial intelligence is also designed to automate repetitive tasks and improve marketers' productivity [9]. This is called marketing automation and there are many examples of platforms. We can quote Mailchimp for example which allows the automation of e-mailing campaigns and thus distribute the content to a targeted and qualified audience.

IV. WHAT ABOUT CONTENT MARKETING ?

Content marketing is known to be a discipline of reference in the sphere of the web, content marketing is the marketing strategy which aims to attract customers.

For a successful communication strategy, we must provide content that is not only relevant but of quality, which will arouse the interest of customers and seduce prospects to convert them later. Content should be informative, should bring good advices, should be entertaining, and ultimately contain emotional traits. And these four elements form what we call the characteristics or ingredients of good content.

And when we are talking about content marketing, we're not only articles or texts but any type of media content such as visuals, videos, infographics, graphs, market studies, webforms ...

The relationship between the concepts of artificial intelligence, digital marketing and content marketing is very important, because the evolution of one can impact the emergence of the other.

Artificial intelligence has been studied by many researchers using exploration as safe bases for research. Artificial intelligence has been investigated since the 1950s, starting from when Alan Turing's question created a controversy: "Can machines think? " From then on, artificial intelligence has played a central role in the various fields of society. Thanks to artificial intelligence, "automatons recognize articulated speech and understand texts written in natural language, cars drive themselves, robots make war instead of men, some scientists are even trying to defeat death by determining the mechanisms of aging ... Most dimensions of intelligence - except perhaps humor – are the subject of analysis and rational reconstructions with computers, but moreover the machines are outperforming cognitive faculties in most domains ... " [2]

The machine has become a key component in the foreseeable future. Researchers have not only revealed that it is having a significant impact but that it is increasingly performing human tasks that could never be outsourced.

Recently, more attention has been paid to the influence of artificial intelligence on our life. This research sheds new light on the influence of the machine on the content creation, literary, before focusing on content marketing. The current research aims to understand, analyze and explore the effects of the machine on content, to compare machine-

generated content with human- generated content and to see if the reader is able to differentiate between the two contents, and if the content produced by a machine has the same effect as human content on its reader. The results should subsequently make an important contribution to the field of content creation.

Could artificial intelligence impact content marketing? This issue analyzes the relationship between two variables: Artificial intelligence and content marketing. Today, new evolutions and emergences result from artificial intelligence which covers more and more a very vast field and almost infinite fields of application. Touching on machine translation, chatbots, autonomous cars, optimization of commercial prospecting, smart building, HR processes and the list goes on, artificial intelligence is in the process of disrupting all sectors and all fields.

Following the evolution of artificial intelligence, always in perpetual mutation, great dazzling progress has been reported. Artificial intelligence has overtaken humans in some aspects and who knows, maybe and very soon, humans will be completely replaced and instead of natural thoughts, we will face artificial intelligence.

By impacting all sectors, artificial intelligence, a scientific subject, has not failed to bring about major changes in marketing by becoming very associated with it.

Considered a `` game changer " in the marketing sector and more particularly in content marketing, artificial intelligence has become so powerful that, for example, a machine even wrote a script that was transformed into science fiction film and the possibilities of evolution are numerous and who knows, very soon, machines will take over the role of humans.

In this perspective, content marketing comes into play, which becomes MARKETING in itself, as a key variable in the research project. The approach to content marketing changes over the years, we increasingly take into account consumer preferences and trends to satisfy the target. The world of content is evolving at high speed and is marked by the arrival of new technologies and alignment with new trends. Content marketing is no longer a project that we carry out in parallel, but it is a project that we explore full time.

We are currently seeing content serving customer satisfaction, snack content that leaves room for longer content which is slow content, fairly diverse content, personalization and authenticity of rendering and several other criteria that make content marketing a strong intermediary, paving the way for a two-way dialogue

between the company and its target audience.

Content marketing of course has its ingredients that humans have taken the time to master and experiment with for a long time.

The turning point of the web has highlighted the content of the brand as part of a hybrid marketing strategy, and the man has been able to put content processes into practice in innovation strategies, he has also known well personalize the content and align it with the different trends of the moment. Humans use a generic approach based on an analysis combining content and consumer needs and try through content to transmit knowledge with all its challenges and developments. Humans try to keep a balance between content marketing and B2B information and also set up a targeted and personalized brand content strategy for the benefit of companies. All this following well quantified and detailed analyzes of course, but the essential point is the human intuition that monetizes the content and makes it useful for marketing purposes.

That being said, it seems, artificial intelligence is more efficient and effective in terms of results.

V. SOME THEORIES THAT CAN BE DISCUSSED

A. Roko's Basilisk Theory [10]

Roko's Basilisk Theory or what is also called the fear of artificial intelligence is known as a thought experiment proposed in 2010 by user Roko on the Less Wrong site [11]

As some have called it, it was the most terrifying thought experiment of all time, which made techno-futurists very frightened [12]. It is an evil and divine form of artificial intelligence, so dangerous that if we see it, or even think about it too much, we will spend the rest of eternity screaming in our torture chamber.

One part tends not to believe this, while another believes the existence of this artificial intelligence which takes over the control of all humanity, thus reducing humans to slaves. It is a theory that has known deep reflection in scientific circles in computer science.

It all started in 2010 when Roko wrote an article on the Less Wrong site, explaining that the evolution of technology will certainly lead to the appearance of a powerful artificial intelligence on earth. This same intelligence, and when it appears, will decide to punish all humans who do not encourage it to emerge and evolve rapidly. That is to say that humans, and when this artificial intelligence will

appear, are obliged to put their financial resources at the service of the emergence of this super artificial intelligence. Otherwise, anyone who has not contributed will have to suffer an eternal artificial hell.

In general, this theory comes to demonstrate the irrational fear of certain people in front of Artificial Intelligence. And this is one of the many proposals to describe the behavior of the technological singularity that will occur in the future, to explain its principles and to qualify it as artificial intelligence whose power exceeds human understanding.

B. General Golem Theory

Jewish cabalistic tradition records the existence of a clay statue made by Rabbi Loew, better known as the "Maharal of Prague," towards the end of the 16th century. Like contemporary computers, this machine came to life when you passed a message behind your teeth.

Usually, she went about her daily household chores, like a zealous and diligent servant.

Many legends have run around this extraordinary statue. According to one of them, Rabbi Loew forgot, on a Saturday, a day of prayer, to remove the message from behind the Golem's teeth and the Golem started to fidget, scream and frighten neighbors, while his master fulfilled his holy duties in the synagogue. Back home, Rabbi Loew is said to have destroyed her work for fear that she would start taking unfortunate initiatives again. " [2]

C. Content Shock [13]

It is a theory that favors quantity over quality [14]. It is mainly based on our limited ability to consume content while its production is increased. Content being the very essence of the internet, the user finds himself in the middle of a lot of information which he has no time to read, nor to see and even less to understand. Although there are different ways of expressing it, we quickly understand that this phenomenon is due to the overproduction of matter. One could even translate it by a saturation, a bulimia and an overdose of information. You have to be present at all costs, and by doing that, Content Shock decides to prioritize the quantity of content over its quality.

VI. SOME APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN DIGITAL MARKETING

A. Creating and Generating Content

The current challenge for brands and businesses is the way they sell their services. It's a whole process that comes into play of course, from the attraction phase to the conversion and loyalty phase.

What could guarantee a good understanding of the brand is the content addressed to the customers.

This is to say that content today is the main element that allows to position or not the brand on the web, vis-à-vis its competitors.

Brands often lack inspiration, and it is in this sense that artificial intelligence tools tend to produce the most relevant content for users.

Artificial intelligence algorithms allow you to create and generate content, either for your website or to generate your analytical reports. Not just any kind of content, but a base is already there.

Some scientific researches deal with what is called automated content, especially in the field of journalism and many questions are raised about the effect of generated content on the psychology of readers. [15]

To generate content, the machine analyzes the data of several contents to produce one that is similar. Intelligent tools exist and are already used by Forbes to create news.

To do this, the machine uses an existing template, fills in the blanks and adds keywords to give the reader the impression that the content is written by an expert writer.

We can take the example of the Washington Post which uses an artificial intelligence named Heliograf to produce articles dealing with sports news, politics and many other topics. The objective is to offer a diverse content to adapt to the different tastes of the readers.

BBC, the New York Times and Reuters implement this technology as well.

B. Digital and online Advertising

In terms of this application, the example is clear. Facebook as well as Google's advertising platforms use artificial intelligence tools to deliver targeted ads to a specific audience, with a pre-defined budget and with an idea of the expected results.

It works by analyzing users' information (their interests, their demographic data ...) to offer them the product that will meet their needs. In this way, the brand or company reaches its target directly, without wasting time, but optimizing its expenses and resources.

C. Sales prediction

Many companies have always wanted to have an estimate of the sales they will make over a given period. Artificial intelligence saves them the effort and helps them predict their sales. AI tools now analyze, in a very fine way, external variables that can contribute to the prediction of sales in a given sector.

For example, we can cite the searches made on the digital devices of an advertiser, the result and frequency of searches allows the brand to organize itself in terms of production quantity, storage ... and everything related to the control of resources and logistics related to it. If we take the example of a book during the phase of its release on the market. Knowing the number of likes, shares and comments on the announcement of the publication of this book, on one of the social media networks, will allow the publishing house to estimate the production volume.

D. Customer/prospect scoring and targeting

Artificial Intelligence is proving itself and can now identify the prospects of a company or a business. Not all prospects are identified, but those considered to be the most interesting ones that can be converted into future customers. Thanks to artificial intelligence algorithms, we identify the prospects with the highest conversion rate. This is called the "look-alike" method.

The result is to identify an audience that has the criteria of the business's clientele, having the same profile, sharing the same interests, interested in the same product categories ...

This allows the business to optimize acquisition costs, save time and resources.

E. Personalization (zoning and editorial content)

In order to optimize the user experience on a platform for example, artificial intelligence tools tend to test different zoning on a page, in order to identify the most optimal experience. We start with test, learn and optimize and this is what allows us to guarantee an optimized content.

We take here the example of mailchimp, an e-mailing tool that ensures the distribution of newsletters and after sending, we can analyze certain KPIs, such as the opening rate, on which areas users click the most and thus which content is the most consulted.

F. Chatbots (or conversational agents)

This has become the trend in the banking sector for example. The majority of Moroccan or French banks' websites contain a chat bot that allows to humanize the customer experience, to answer the customers' questions and to guarantee the contact. NLP (Natural Language Processing) and NLU (Natural Language Understanding) are used to create conversations between man and machine.

And customers feel they have a real person in front of them, who is interacting with them and answering all their questions, in a very short period of time, compared to the waiting lines on the phones and in the agencies.

G. Listening and analyzing social noise

Artificial intelligence tends to analyze the digital voice of people on social networks.

This creates an opportunity for the company to monitor and have an idea of its image conveyed on social networks.

This is also called social listening, where the brand listens to its community through human language recognition techniques. In other words, artificial intelligence tools analyze what is said and written on the web and social networks about a given brand. The added value is that even the tone of the comments is scrutinized to allow the brand to identify influencers and act in case of misunderstanding.

VII. CONCLUSION

Maybe innovation has allowed the company to change ! Its processes and trying to deliver an automated content, through artificial intelligence tools, to save time, energy and money. But the most important thing that the company should take into consideration is that every customer is different and we absolutely can't deliver the same content to everyone. And beside all of that, will an automated content attract the customer in the same way of a content written by a specialist, a content creator or a writer ?

The writer spend time to analyze the need of its readers, he settles on their primary profile, then develop the right content, and this help him get the right message and get the overall messaging strategy pinned down. To win the attention of the primary customers, the content should be sufficiently clear. It should speak the lexicon of the customers and understand them well enough to articulate the solution the company is presenting to their problem. Will a machine, producing an automated content, be able to understand the customer before proposing him the content he is looking for ? Creating powerful, compelling messaging depends entirely on knowing who we are addressing.

The content writer needs to identify what affects the psychology of their readers and consumers and mainly know what kind of language they use.

The content writer needs to find the nuances that will let him get inside the mind of his readers. And of course, each content in the marketing field needs to be focused on "adding value " [16]

VIII. REFERENCES

- [1] H. F. Orange, «Dossier : L'intelligence artificielle, entre espoirs et dangers pour l'Homme,» 26 01 2018. [En ligne]. Available: <https://hellofuture.orange.com/fr/grand-format/intelligence-artificielle-entre-espoirs-et-dangers-pour-homme/>.
- [2] J.-G. Ganascia, *Artificial intelligence: towards programmed domination?*, Le Cavalier Bleu editions , 2017.
- [3] M. S. Y. B. C. B. A.-C. F. L. B. R. Cédric Villani, *Donner un sens à l'intelligence artificielle : Pour une stratégie nationale et européenne, Mission Villani sur l'intelligence artificielle*, 2018.
- [4] L. r. d. futura, «Futura Tech,» [En ligne]. Available: <https://www.futura-sciences.com/tech/definitions/informatique-intelligence-artificielle-555/>.
- [5] Accenture, «AI: BUILT TO SCALE,» 14 11 2019. [En ligne]. Available: <https://www.accenture.com/us-en/insights/artificial-intelligence/ai-investments>.
- [6] L. Saux, «Marketing digital : pourquoi utiliser l'Intelligence Artificielle ?,» 30 03 2020. [En ligne]. Available: <https://www.kameleoon.com/fr/blog/intelligence-artificielle-marketing-digital>.
- [7] K. M. PhD, «The ROI of AI,» 12 04 2019. [En ligne]. Available: <https://www.accenture.com/us-en/insights/artificial-intelligence/roi-artificial-intelligence>.
- [8] I. Quantcast, «Lessons of 21st-Century Brands,» [En ligne].
- [9] Conversationnel, «L'intelligence artificielle : sujet tendance ou révolution marketing ?,» [En ligne]. Available: <https://www.conversationnel.fr/chatbot/intelligence-artificielle-sujet-tendance-revolution-marketing/>.
- [10] «AI stories: Roko's Basil from the smartaddict,» [En ligne]. Available: <http://www.smartaddict.fr/basilic-roko/>.
- [11] «Community blog and forum discussing, among other things, cognitive biases, philosophy, psychology, economics, rationality and artificial intelligence,» [En ligne]. Available: <https://www.lesswrong.com/>.
- [12] [En ligne]. Available: <https://slate.com/technology/2014/07/roko-basilisk-the-most-terrifying-thought-experiment-of-all-time.html>.
- [13] M. Schaefer, *Theory by Mark Schaefer, social media marketing consultant and author.*
- [14] «What is the content shock of the solutions commercial,» [En ligne]. Available: <https://www.solutionscommerciales.fr/content-shock-definition..>
- [15] e. a. Jina Kim, «Can AI be a content generator? Effects of content generators and information delivery methods on the psychology of content consumers,» *Elsevier*.
- [16] L. Hanly, *Content that converts*, 2017.
- [17] «9 Applications Of Artificial Intelligence In Digital Marketing That Will Revolutionize Your Business,» [En ligne].