

Systematized review of artificial intelligence applied to digital marketing in Colombia

Revisión sistematizada de inteligencia artificial aplicada al marketing digital en Colombia

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Abstract

Artificial intelligence has made it possible to develop different technologies that significantly help reduce time, provide clear answers, and, at the same time, reduce costs, which allows companies to be more competitive. Many companies worldwide are already applying these tools that technology currently offers for themselves. Since the implementation, they have seen positive results and continue encouraging the business world to implement different tools. This manuscript aimed to realize a review of databases, taking into account the inclusion and exclusion criteria, after which it was classified in a matrix, managing to explore the advantages and disadvantages of artificial intelligence applied to marketing. Among the most important results we must focus on is that digital marketing professionals will need to develop to adapt to changes in the labor market. The ability to work with data and technology will likely become increasingly important. Marketing professionals will need to be able to understand and leverage AI and data analytics tools to improve their strategies. In conclusion, although AI may impact the demand for specific jobs in digital marketing, it is also creating

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new opportunities for those who can adapt to changes in the labor market and learn to work together with AI to achieve better results.

Keywords: Artificial Intelligence, Digital Marketing, Evolutionary Development, Technology, transformation.

Resumen

En la actualidad la inteligencia artificial ha permitido desarrollar diferentes tecnologías que ayudan de manera significativa la reducción de tiempo, dar respuestas claras y a la vez reducción de costos lo cual permite que las empresas sean más competitivas. Muchas empresas a nivel mundial ya están aplicando estas herramientas que ofrece la tecnología actualmente en pro de ellas mismas, desde la implementación, estas ya han visto resultados positivos y siguen incentivando al mundo empresarial a la implementación de diferentes herramientas. Para dar cumplimiento a este objetivo se realizó una revisión de bases de datos teniendo en cuenta los criterios de inclusión y exclusión, posterior a esto se clasificó en una matriz logrando explorar las ventajas y las desventajas de la inteligencia artificial aplicada al marketing. Entre los resultados más importantes debemos enfocar a los profesionales de marketing digital deberán desarrollar para adaptarse a los cambios en el mercado laboral, es probable que la capacidad de trabajar con datos y tecnología sea cada vez más importante. Los profesionales de marketing deberán ser capaces de entender y aprovechar las herramientas de IA y análisis de datos para mejorar sus estrategias. A modo de conclusión podemos decir que aunque la IA puede tener un impacto en la demanda de ciertos puestos de trabajo en el marketing digital, también está creando nuevas oportunidades para aquellos que pueden adaptarse a los cambios en el mercado laboral y aprender a trabajar junto con la IA para lograr mejores resultados.

Palabras clave: Inteligencia Artificial, Marketing Digital, Desarrollo Evolutivo, Tecnología, transformación.

1. Introduction

Digital marketing (also called online marketing) is a system that allows you to promote a brand's products or services through the Internet, using online channels and tools strategically to help achieve the company's general business objectives [1].

This means that the digital transformation of marketing implies that traditional activities move to the digital environment. Digital marketing or e-marketing can efficiently identify, anticipate and satisfy customer needs, making artificial intelligence an important tool in this environment [2-3].

However, how is artificial intelligence (AI) linked to digital marketing? It is so linked because they both are technological tools but, at the same time, are so different and discussed. Artificial intelligence (AI) is the ability of artificial gadgets such as a computer to perform tasks typical of human intelligence, and this is where we talk about the controversy that forms around these two areas because creativity comes into competition; also the capacity for learning and the development of tasks made by humans that now can be done by artificial intelligence (AI); let us start with human creativity; since ancient times, has delighted us with art made from painting, writing, music, mathematics and even humor and artificial intelligence (AI) has begun to show us that in all these areas it has sometimes been able to have very significant achievements, such as in the case of painting, humans have developed software for artificial intelligence (AI) which allows the Robot to develop paintings and strokes never seen before, with impressive creativity, this developed only by artificial intelligence (AI), the human only puts the program and, the machine develops its idea [2-3].

Digital transformation describes the change of processes within organizations through the use of technology, including the introduction of large-scale data, where companies can change management and retail styles and implement digital business models that allow them to improve interaction with customers, suppliers, partners or employees. Another important aspect of digital transformation is the change in consumer behavior. Increasing Internet access among customers has led to a shift towards online commerce [4-5].

The great challenge of a professional in Marketing and advertising will be based and measured according to its advertising guidelines, or its marketing study can be so creative and emotional that artificial intelligence (AI) does not take up space in the professional field. However, one could also consider making strategic alliances to take advantage of artificial intelligence (AI) and focus on consumer awareness since the only thing artificial intelligence has not been able to do is raise awareness [6]. The key here is adaptability. As professionals, we have the power to adapt our strategies and leverage AI to our advantage, ensuring that our unique human capabilities, such as emotional intelligence and creativity, continue to play a crucial role in marketing.

Based on the above, the objective was to explain the effect that Artificial Intelligence (AI) has on jobs in digital marketing.

2. Methodology and results

Information was collected by exploring different databases from 2017 to 2023. The inclusion criteria were aimed at documents focused on Artificial Intelligence associated with Digital Marketing in Colombia, extracting those relevant to the state of the art. Subsequently, they were compiled, determining their relevance, usefulness, and applicability based on the content and objective of the authors, as well as the conclusions obtained.

Subsequently, in a table, all the articles and information collected showed the relationships, causes, and effects of artificial intelligence (AI) in digital marketing and a possible synthesis between its action areas.

2.1 Results

Based on the review of web articles, 25 were found referring to Artificial Intelligence and Digital Marketing in Colombia, of which (3) were before 2017, (6) were excluded for dealing with more global topics, and seven (7) after determining little relationship with Digital Marketing since those papers talked about Artificial Intelligence in culture. The review was done on the remaining (11) articles. The information is detailed in Table 1.

Table 1. Search results

AUTHOR	YEAR	NAME OF THE ARTICLE	CONCLUSION	REFERENCE
Ana Lucia Vargas, marketing and communications manager IBM Colombia.	2017	The marketing professional in times of Artificial Intelligence	Explores how artificial intelligence (AI) transforms the marketing field and what skills it needs.	(1) <i>Ana Lucia Vargas, 2017</i>
Carlos Fernando Villa Gómez Marketing Consultant	2020	Marketing and Artificial Intelligence	The article points out that AI has the potential to transform the Colombian economy and improve the lives of people in the country as long as it is implemented effectively. Also, the paper mentions that collaboration is encouraged between the public sector and private.	(3) <i>Carlos Fernando Villa Gómez, 2020</i>

<p>Harry Wong CIO & Founder at Blazdesigns</p>	<p>2022</p>	<p>Advances and Problems in Artificial Intelligence in Colombia 2022</p>	<p>The current state of artificial intelligence in Colombia is addressed. The author highlights that although Colombia has made significant progress in the implementation of artificial intelligence technologies, there are still significant challenges that must be addressed.</p>	<p>(7) <i>HarryWong,</i> <i>2022</i></p>
<p>Andrea Flores - Crehana</p>	<p>2021</p>	<p>Learn about the history of digital marketing and its evolution to the present day.</p>	<p>The article provides an overview of the history of digital marketing, highlighting the importance of staying up to date with the latest trends and tools to realize the full potential of digital marketing.</p>	<p>(8) <i>AndreaFlores,</i> <i>2021</i></p>
<p>Preceden</p>	<p>2023</p>	<p>Evolution of the internet and digital marketing</p>	<p>The Internet and digital marketing have transformed how companies interact with customers and promote their products and services. The evolution of technology and communication platforms will continue to drive changes in digital marketing.</p>	<p>(9) <i>Preceden,2023</i></p>
<p>Mintic</p>	<p>2019</p>	<p>Colombia adheres to the agreement on Artificial Intelligence before the OECD countries</p>	<p>The Colombian government signed the Recommendation of the Council of the Organization for Economic Cooperation and Development (OECD) on Artificial Intelligence during the annual meeting of the Ministerial Council of said organization, whose theme is "Taking advantage of the digital transition for sustainable development."</p>	<p>(10) <i>Mintic,2019</i></p>

Alex de Ignacio	2023	Artificial Intelligence in digital marketing	The article shows that AI is a powerful and constantly evolving tool in digital marketing. It can help companies improve their strategies and gain a competitive advantage in an increasingly saturated market.	(11) <i>Alex delgnacio,</i> 2023
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3. Discussion and Conclusions

There are several different points of view regarding the discussion around this topic. Some argue that AI will significantly reduce the number of jobs in the digital marketing space, Harry Wong, 2022 while others believe that the technology will create new opportunities and roles for marketing professionals. Still, others argue that AI will change the nature of jobs rather than eliminate them entirely and that marketing professionals will have to adapt to new ways of working that emerge due to the technology. [12]

Overall, there are likely to be many different opinions on how AI will impact the digital marketing job market, and the discussion will continue to evolve as the technology advances and develops further.

Artificial intelligence (AI) automates many tasks that humans previously carried out, which can show the elimination of some jobs, such as in chatboxes (ChatGPT) where service positions have been affected. [13] On the other hand, AI is also creating new opportunities and roles for digital marketers who can leverage the technology to improve the efficiency and effectiveness of their campaigns and increase revenue. [14]

In terms of the skills and competencies that digital marketing professionals will need to develop to adapt to changes in the labor market, the ability to work with data and technology is likely to become increasingly important. Marketing professionals will need to be able to understand and leverage AI and data analytics tools to improve their strategies. Additionally, the ability to understand and communicate complex information clearly and effectively will become increasingly valuable. [6-14]

The conclusion is that artificial intelligence is transforming the digital marketing industry and will likely continue to do so. As companies seek more efficient ways to collect and analyze data, AI is becoming a pivotal tool to help digital marketers gain valuable insights into consumer behavior and make more informed decisions.

While AI can automate specific tasks, it can create new opportunities for digital marketing professionals. Marketers who understand and use AI in their work will have a competitive advantage in the job market. Additionally, marketers will need to develop creativity and critical thinking skills to complement AI's ability to collect and analyze data.

From the above, it can be concluded that Artificial Intelligence is transforming the Digital Marketing industry and is likely to continue doing so. As companies seek more efficient ways to collect and analyze data, AI is becoming a pivotal tool to help digital marketers gain valuable insights into consumer behavior and make more informed decisions.

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References

- [1] A. L. Vargas, "El profesional de mercadeo en tiempos de Inteligencia Artificial," IBM Colombia, 2017. [Online]. Available: <https://www.revistapym.com.co/articulos/mercadeo/10851/el-profesional-de-mercadeo-en-tiempos-de-inteligencia-artificial>.
- [2] Kannan, P. K., & Alice Li. (2017). Digital marketing: A framework, review and research agenda. International Journal of Reasearch in Marketing.
- [3] C. F. Villa Gómez, "Mercadeo e Inteligencia Artificial," La República, 2020. [Online]. Available: <https://www.larepublica.co/analisis/carlos-fernando-villa-gomez-400403/mercadeo-e-inteligencia-artificial-3048716>.
- [4] Johnston, M. W., & Marshall, G. W. (2016). Contemporary Selling: Building Relationships, Creating Value. New York: Routledge.
- [5] Bartolomé Noriega, E. (2020). El impacto de la IA y los datos en el marketing digital.
- [6] Microsoft Noticias, 2019. "Con el impulso de la Inteligencia Artificial, Colombia podría triplicar su productividad y aumentar su PIB hasta un 6.8%," [Online]. Available: <https://news.microsoft.com/es-xl/con-el-impulso-de-la-inteligencia-artificial-colombia-podria-triplicar-su-productividad-y-aumentar-su-pib-hasta-un-6-8/>.
- [7] H. Wong, "Avances y Problemas en la Inteligencia Artificial de Colombia 2022," LinkedIn, 2022. [Online]. Available: <https://es.linkedin.com/pulse/avances-y-problemas-en-la-inteligencia-artificial-de-colombia-wong>.
- [8] A. Flores, "Conoce la historia del marketing digital y su evolución hasta el día de hoy," Crehana, 2021. [Online]. Available: <https://www.crehana.com/blog/transformacion-digital/historia-del-marketing-digital/>.
- [9] Preceden, 2023. "Evolución del internet y mercadotecnia digital," [Online]. Available: <https://www.preceden.com/timelines/841917-evoluci-n-del-internet-y-mercadotecnia-digital>.
- [10] Mintic, 2019. "Colombia se adhiere a acuerdo sobre Inteligencia Artificial ante los países de la OCDE," [Online]. Available: <https://www.ccb.org.co/Clusteres/Cluster-de-Software-y-TI/Noticias/2019/Mayo-2019/Colombia-se-adhiere-a-acuerdo-sobre-Inteligencia-Artificial-ante-los-paises-de-la-OCDE>.
- [11] A. de Ignacio, "La Inteligencia Artificial en el marketing digital," 2023. [Online]. Available: <https://www.cyberclick.es/numerical-blog/la-inteligencia-artificial-en-el-marketing-digital>.
- [12] P. T. Hernández, "El Marco Ético para la Inteligencia Artificial en Colombia: una oportunidad para implementar proyectos de IA que beneficien a toda la ciudadanía," 2022. [Online]. Available: <https://www.ccit.org.co/articulos-tictac/el-marco-etico-para-la-inteligencia>

artificial-en-colombia-una-oportunidad-para-implementar-proyectos-de-ia-que-beneficien-a-toda-la-ciudadania/.

[13] Portafolio, 2023. "IA y ChatGPT transformarán las prácticas de mercadeo," [Online]. Available: <https://www.portafolio.co/tendencias/ia-y-chatgpt-transformaran-las-practicas-de-mercadeo-577916>.

[14] DataScientest, 2023. "Inteligencia artificial: definición, historia, usos, peligros,". [Online]. Available: <https://datascientest.com/es/inteligencia-artificial-definicion>.