

ARTIFICIAL INTELLIGENCE TECHNOLOGY AND ITS ROLE IN ENHANCING MARKETING INNOVATION AND COMMUNICATION IN THE ALGERIAN MARKET.

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ABSTRACT

This paper explores the transformative impact of artificial intelligence (AI) technology on marketing innovation and communication within the Algerian market. With the rapid adoption of AI-driven tools and strategies, businesses in Algeria are experiencing significant advancements in customer engagement, personalized marketing, and data-driven decision-making. The study analyzes various AI applications, such as chatbots, predictive analytics, and content creation, highlighting their effectiveness in addressing unique challenges in the Algerian context. Through a comprehensive review of current trends, case studies, and industry insights, this paper aims to provide a thorough understanding of how AI is reshaping marketing practices in Algeria, ultimately contributing to enhanced competitiveness and market growth.

Keywords: Artificial Intelligence (AI), Marketing Innovation, Communication Technology, Algerian Market, Customer Engagement.

INTRODUCTION

The advent of artificial intelligence (AI) has revolutionized numerous industries, and marketing is no exception. Globally, AI has demonstrated its potential to enhance marketing strategies by providing unprecedented levels of personalization, efficiency, and analytical capabilities. In the context of the Algerian market, the integration of AI technology represents a significant opportunity for businesses to innovate and improve their communication strategies.

Algeria, with its diverse and growing economy, presents a unique set of challenges and opportunities for marketers. Traditional marketing methods often fall short in addressing the dynamic consumer behaviors and preferences prevalent in the region. AI offers a solution by enabling businesses to harness large volumes of data, predict trends, and deliver highly personalized customer experiences. For instance, AI-powered chatbots can provide instant customer support, while predictive analytics can optimize marketing campaigns by targeting the right audience at the right time.

This paper seeks to explore the specific ways in which AI technology is being utilized in the Algerian market to drive marketing innovation and communication. It will examine the current state of AI adoption in Algeria, the benefits and challenges associated with its implementation, and the future prospects of AI in marketing. Through a combination of theoretical analysis and practical case studies, the paper aims to provide valuable insights for businesses looking to leverage AI to enhance their marketing efforts and achieve a competitive edge in the Algerian market.

By understanding the role of AI in marketing, Algerian businesses can better navigate the complexities of modern consumer behavior and achieve more effective and impactful communication strategies. This exploration is crucial for fostering a more innovative and resilient marketing landscape in Algeria.

Literature Review

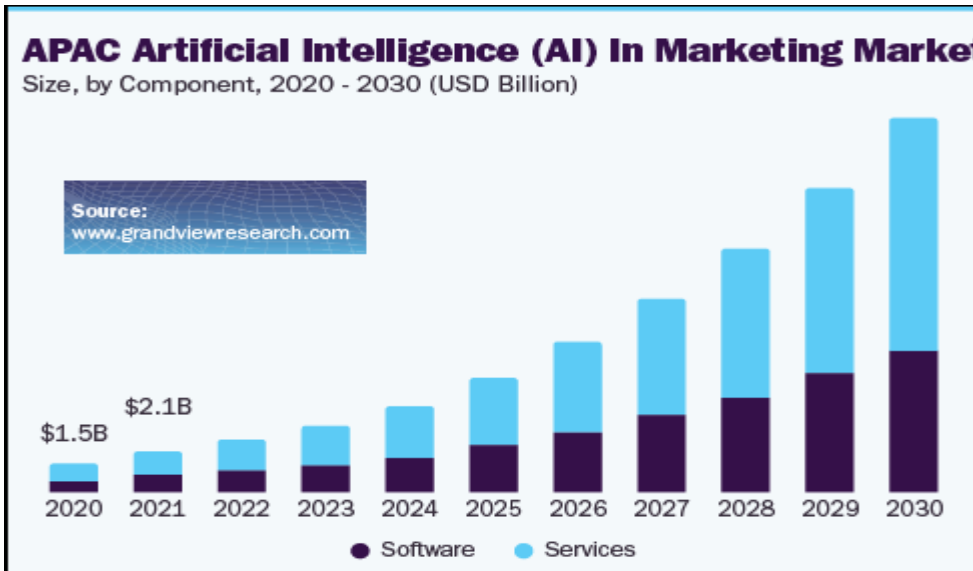
The integration of artificial intelligence (AI) in marketing is a rapidly evolving field, marked by significant advancements in technology and its applications. This literature review examines the current body of research on AI's role in marketing innovation and communication, with a particular focus on the Algerian market.

1. AI in Marketing: Global Perspective

Globally, AI has transformed marketing practices by enhancing personalization, improving customer engagement, and enabling data-driven decision-making. Studies such as Davenport et al. (2020) emphasize AI's ability to analyze large datasets to uncover insights into consumer behavior, allowing for more targeted marketing strategies. AI technologies like machine learning, natural language processing, and computer vision have been pivotal in creating more efficient and effective marketing campaigns (Chaffey, 2019).

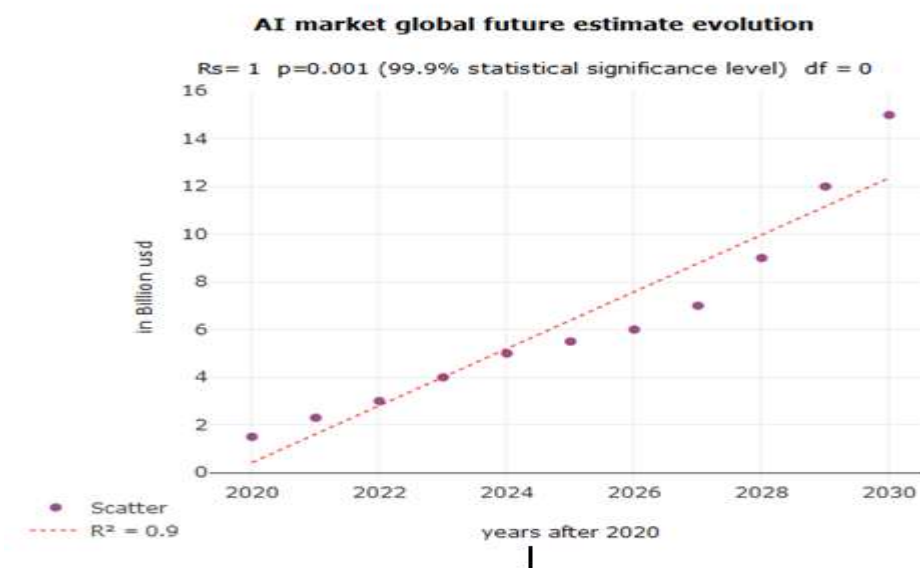
The global artificial intelligence (AI) in marketing market size was valued at USD 12.64 billion in 2022 and is expected to grow at a compound annual growth rate (CAGR) of 26.6% from 2023 to 2030. The growing adoption of machine learning and artificial intelligence to offer increased acceptance of social networking platforms, individualized consumer experiences, and the rise of online shopping are primary factors driving market expansion. For instance, Google Responsive Search Ads is a text ad format available in Google Ads, an online advertising platform developed by Google that enables advertisers to generate multiple headlines and descriptions for a single advertisement. Using the Google advertisement feature, entrepreneurs can start their ads by tailoring them to a geographic range, budgetary needs, and other factors.

Fig 1.



Personalization is a key area where AI has made significant strides. As noted by Kumar et al. (2019), AI algorithms can analyze consumer data to deliver highly personalized content, offers, and recommendations. This level of personalization enhances customer satisfaction and loyalty, which is crucial in competitive markets. According to fig.1 data a scatter plot will well-explain the last mentioned concepts.

Fig.2



2. AI in Marketing Communication

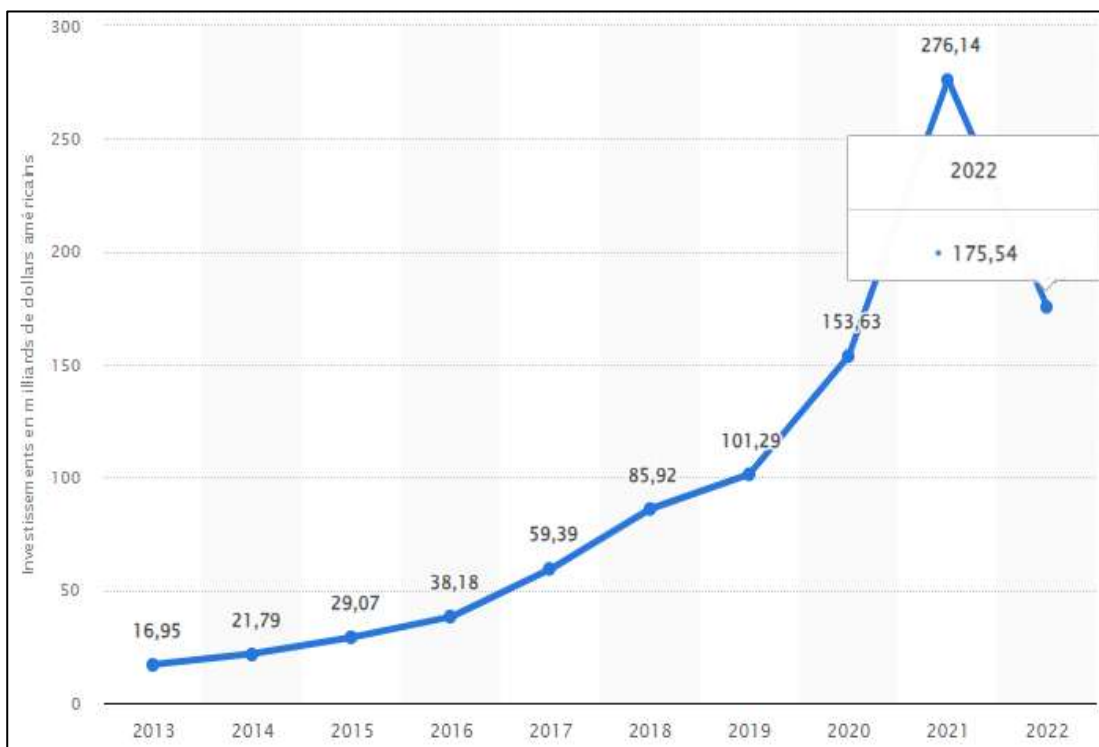
The role of AI in marketing communication is multifaceted, involving chatbots, virtual assistants, and automated content creation. Chatbots, as highlighted by Hoyer et al. (2020), have become essential tools for real-time customer service and engagement. They provide instant responses to customer inquiries, thereby improving the customer experience and freeing up human resources for more complex tasks.

AI-driven content creation tools are another significant development. These tools use natural language processing to generate relevant and engaging content, which can be tailored to specific audiences. Research by Zhang and Dafoe (2020) indicates that AI can produce high-quality marketing content at scale, reducing the time and cost associated with traditional content creation methods.

3. AI in the Algerian Market

The adoption of AI in marketing within the Algerian market is still in its nascent stages, but it shows promising potential. A report by the Algerian Ministry of Digital Economy (2021) outlines the government's commitment to fostering digital innovation, including AI, to boost economic growth. This commitment is reflected in the increasing number of Algerian businesses experimenting with AI technologies to enhance their marketing efforts.

Fig 3.



Statistics indicate the rapid growth of markets for artificial intelligence applications in the enterprise sector in the world. From 2017-2025, the markets witnessed a growth estimated at 135%.

In the period from 2013-2022, institutional investments in the field of artificial intelligence rose strongly in the world and exceeded 16 billion dollars in 2013 and more than 175 billion dollars in 2022. The record was reached during the period studied in 2021 with more than 276 investments billion dollars in artificial intelligence that year.

Research specific to the Algerian context, such as that by Boudjema (2022), indicates that local companies are beginning to leverage AI for customer segmentation, predictive analytics, and personalized marketing. These technologies enable businesses to better understand and predict consumer needs, leading to more effective marketing strategies.

However, the implementation of AI in Algeria is not without challenges. Issues such as limited technological infrastructure, lack of expertise, and resistance to change are significant barriers. A study by Hamid and Abdallah (2021) highlights the need for improved digital literacy and more robust technological infrastructure to fully realize the benefits of AI in marketing.

By combining the barriers that must be overcome by both humans and AI systems in the innovation process with the key activities of idea generation and development that need to be conducted, we can derive a framework of potentially creative application areas of AI within the innovation process. To understand the possibilities of AI, we need to delineate where AI can assist and potentially replace human decision making in innovation management. Specifically, there are four potential areas where human decision making could theoretically be supported:... developing ideas by overcoming information processing constraints; generating ideas by overcoming information processing constraints; (3) developing ideas by overcoming local search routines; and (4) generating ideas by overcoming local search routines. These four areas are depicted in Fig. 1 along with a brief description of what AI in each quadrant ought to be capable of doing.

Fig4.

		INNOVATION PROCESS	
		Develop ideas	Generate ideas
BARRIERS TO INNOVATION	Information processing constraints	(1) AI system is able to identify and evaluate <i>more</i> information that can then be used to develop ideas.	(2) AI system is able to recognize <i>more</i> problems, opportunities, and threats that may be used to generate new ideas.
	Ineffective or local search routines	(3) AI system is able to identify and evaluate <i>more creative/exploratory</i> ideas.	(4) AI system is able to recognize and create <i>more creative/exploratory</i> problems, opportunities, and threats to generate new ideas.

Artificial intelligence and innovation management: A review, framework, and research agenda ☆
 Naomi Haefnera, , Joakim Wincenta,b , Vinit Paridac,d,e , Oliver Gassmann Technological
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3.1. Overcoming information processing constraints with AI to develop ideas

Current AI systems excel at overcoming humans' information processing constraints in the area of idea and opportunity development. Currently, AI systems rely heavily on deep neural networks that require, and are able to process, vast amounts of data (Ng, 2017). With this feature, we see a veritable plethora of AI systems that are able to support humans in the development of ideas, opportunities, and solution approaches by processing a much larger amount of information than is humanly possible and unearthing interesting areas for investigation. Indeed, these technologies are already creating substantial economic value for firms (Roose, 2019).

3.2. Overcoming information processing constraints with AI to generate ideas

There are several AI applications are able to process much more information to generate new ideas and opportunities that would likely be overlooked by humans operating on their own. A typical example is an application developed by Outlier.ai. The company uses a suite of machine learning methods to process raw metrics data into insights that are humanly readable (Unemyr, 2018). After analyzing a firm's data, Outlier generates a set of customized 'stories' that summarize actionable and interesting insights for specific managers. In doing so, Outlier can highlight innovative opportunities for managers.

3.3. Overcoming local search routines with AI to develop ideas

There is some initial evidence that AI systems may be able to support humans in the types of innovative activity represented. These activities entail identifying and developing ideas, opportunities, and solution approaches where the process goes beyond using local search routines – in other words, distant search is used. Autodesk, for instance, used various algorithms to create a new crew partition for Airbus (Autodesk, 2016). The generative design methods employed to devise the new partition create the kinds of product that designers could not conjure up on their own.

3.4. Overcoming local search routines with AI to generate ideas

Finally, AI systems must be able to generate or recognize ideas and opportunities for innovation in unrelated knowledge domains. A method in artificial intelligence that may facilitate the generation or recognition of innovative ideas and opportunities is reinforcement learning. There have been recent advances in reinforcement learning such as unsupervised reinforcement learning and meta-reinforcement learning that could conceivably be helpful in generating novel ideas. Reinforcement learning in general involves training an agent in a (virtual) environment.¹

4. Case Studies and Practical Applications

Several case studies illustrate the practical applications of AI in marketing within the Algerian market. For instance, Algerian telecom companies have implemented AI-driven chatbots to enhance customer service, resulting in improved customer satisfaction and operational efficiency (Saidi & Ahmed, 2021). Similarly, retail businesses are using AI for personalized marketing campaigns, which have led to increased engagement and sales (Zeroual & Khoualdi, 2022).

Artificial intelligence tools for communication development -Content creation tools: •Content creation is one of the most exciting AI applications emerging in communications. Creating editorial content: Creating editorial content using artificial intelligence is one of the easiest to use, fast and quality features. Artificial intelligence algorithms can generate articles, product

descriptions and even prepare detailed analysis on the specified quantity data. It allows charting the writing process for valuable communication teams in searching for differences in results in order to write phrasing, linguistic accuracy, and correct texts. However, be sure to provide clear and precise prompts so that the AI accurately understands your instructions. In this context, editorial AI is: ChatGpt for its speed and creativity, Writesonic for its accuracy and writing quality, Rytr for its flexibility in editorial editing.

Visual Content: AI also excels at creating impactful visual content. AI tools are able to create images, pictograms, infographics, and even videos from detailed prompts. This feature is especially useful for creating large-scale visuals, such as banner ads, social media posts, and illustrations. For blog posts. This way, communications teams can create engaging images without needing in-depth graphic design expertise. AI can produce visual content: via Flair AI to create images, – Diversified content: AI can also be used to create diverse content, such as landing pages. AI models can be trained to develop landing page designs that increase visitor engagement and motivate them to take specific actions. This ability personalizes and optimizes landing pages based on real-time data Actual greatly improves the effectiveness of communication campaigns. The best applications here are Mixo in English for its speed and Landingi for its ease of use. AI to automate and personalize tasks and messages: The possibilities that AI provides for automation and personalization are endless. They allow executing automated scenarios (emails, chatbots) or performing in-depth data analyzes (market studies, etc.). Automation is one of the most powerful aspects of artificial intelligence. Repetitive and time-consuming tasks can be automated with AI, freeing up time for higher value-added activities. This could include automating email responses, automated social media scheduling, or even automated administrative task management. By identifying processes within your business that can be automated, you can streamline your processes and focus on tasks that require deeper thinking. In email outreach, AI tools can automate the process of email list segmentation, sending targeted messages, and tracking open and conversion rates. Chatbots, on the other hand, use artificial intelligence to provide instant, personalized responses to customer questions on websites and social media platforms. This real-time interaction improves the customer experience while saving time for communications teams. Use for example: Mailbutler for emails SocialPilot for social media (posts, messages, activity, etc.) Autoresponder for message automation (for email inboxes, chatbots, etc.) Intelligence Artificial Chatbot Automated Messaging Automated Reply

These case studies demonstrate that while AI adoption is still developing in Algeria, early adopters are already reaping significant benefits. The successful implementation of AI in these cases provides a roadmap for other businesses in the region to follow.

Artificial intelligence tools for communication analysis: -Artificial Intelligence Analysis: Data Analysis Artificial intelligence also plays a crucial role in analyzing data and measuring performance. AI tools can extract valuable insights from collected data, providing actionable insights to fine-tune communication strategies in real-time Benchmark: Additionally, AI allows for comparison of current performance with industry leaders, providing valuable insights for continuous improvement. We recommend you test: Akio for data-driven forecasting AI Benchmark for Competitive Studies Data Chart Table AI Data Chart Artificial intelligence

techniques and tools that support the development of the innovation function in the marketing communication strategy . ChatGPT Chatbot enables you to create media lists, create press releases, or develop ideas that meet your specific needs, saving you time and energy. . Midjourney, the Discord-powered text image tool Need a specific image for a PR campaign, and don't want to pay someone for it? Mid-flight is the solution. It's still quite random qualitatively, but when it's good, it's really good. AI Tools for Business Communications and Press Relations: Mid-Journey That's because it was powered by billions of images from all over the internet, including a lot of content from original artists (who were not paid for it). Technically, you can use Midjourney to visualize visuals for your campaigns or get drafts of logos, icons, or even illustrations for your website Brandwatch, for social media monitoring Brandwatch is your AI software for monitoring social platforms. The online service uses the power of artificial intelligence to track, analyze and monitor not only textual mentions of your brand, but also representations of company logos and product images. AI Tools for Corporate Communications and Press Relations: Brandwatch Advanced linguistic processing can also determine whether signals are positive, negative, or neutral.

CONCLUSION

The literature on AI in marketing underscores its transformative potential, particularly in enhancing personalization, customer engagement, and communication efficiency. In the Algerian market, AI adoption is growing, driven by governmental support and the efforts of pioneering businesses. However, challenges such as technological infrastructure and digital literacy must be addressed to fully harness AI's capabilities.

REFERENCES

- 1.Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science, 48*(1), 24-42. doi:10.1007/s11747-019-00696-0
- 2.Chaffey, D.** (2019). Artificial intelligence marketing: Practical applications. *Smart Insights*. Retrieved from <https://www.smartinsights.com/manage-digital-transformation/digital-transformation-strategy/artificial-intelligence-in-marketing/>
- 3.Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J.(2019). Understanding the role of artificial intelligence in personalized engagement marketing. *California Management Review, 61*(4), 135-155. doi:10.1177/0008125619862257
- 4.Hoyer, W. D., Kroschke, M., Schmitt, B., Kraume, K., & Shankar, V. (2020). Transforming the customer experience through new technologies. *Journal of Interactive Marketing, 51*, 57-71. doi:10.1016/j.intmar.2020.04.001
- 5.Zhang, B., & Dafoe, A. (2020). Artificial intelligence: American attitudes and trends. *PLOS ONE, 15*(10), e0239948. doi:10.1371/journal.pone.0239948

6. Algerian Ministry of Digital Economy (2021). National Strategy for Digital Transformation 2021-2025. Retrieved from <https://www.mde.gov.dz/national-strategy-digital-transformation-2021-2025/>

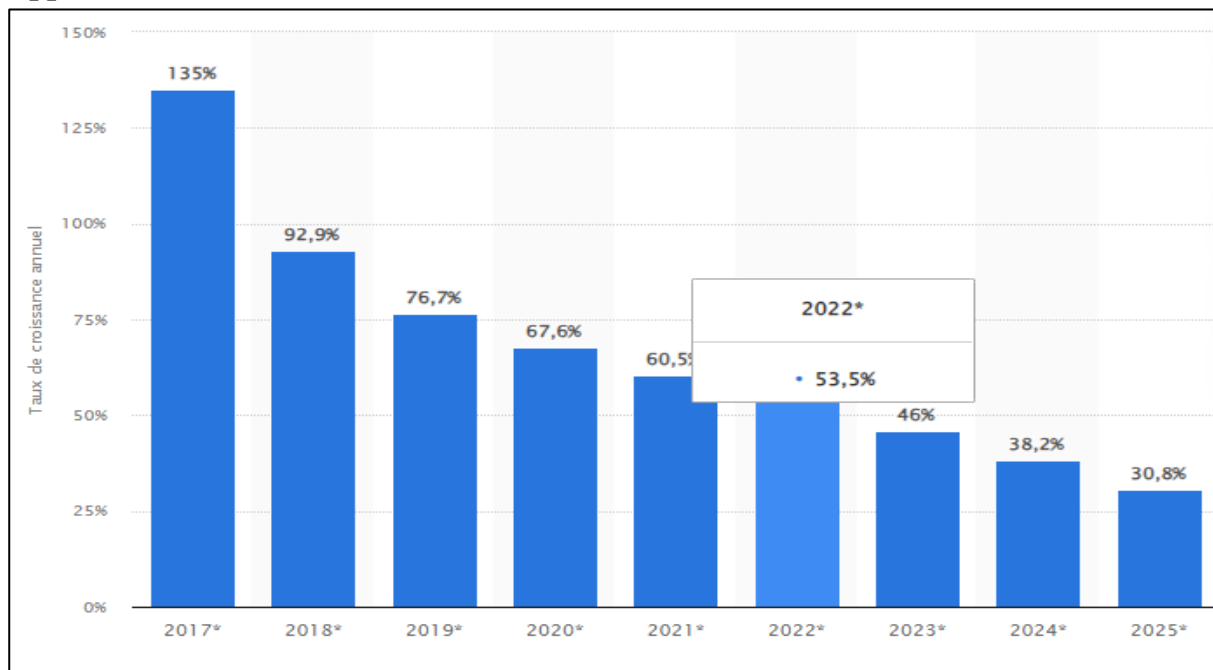
7. Boudjemaa, M. (2022). The impact of AI technology on marketing strategies in Algeria. *Journal of North African Business Studies, 5*(3), 45-62.

8. Hamid, M., & Abdallah, A. (2021). Overcoming barriers to AI adoption in Algeria: Challenges and opportunities. *Algerian Journal of Digital Economy, 4*(2), 78-95.

9. Saidi, A., & Ahmed, H. (2021). Enhancing customer service in the Algerian telecom industry through AI chatbots. *Algerian Journal of Telecommunications, 6*(1), 112-125.

10. Zeroual, L., & Khoualdi, A. (2022). Personalized marketing campaigns in Algerian retail using AI. *Algerian Journal of Marketing, 3*(2), 88-102.

Appendixes :



Source : **Taux de croissance annuel du marché des applications d'intelligence artificielle pour les entreprises dans le monde de 2017 à 2025**