

Employing Artificial Intelligence Technologies in E-Marketing: Experiences of International Companies

Slimane SALEM

Laboratory for Studies in Islamic Finance and
Sustainable Development

Faculty of Economics, Business,
and Management Sciences

University Center Mersli Abdellah Tipaza, Algeria

salem.slimane@cu-tipaza.dz

Abstract:

*Due to the rapid technological changes that organizations witness today, employing electronic technologies and applying artificial intelligence in their activities has become an imperative necessity for surviving in the market, confronting competitors, and outperforming them. This is reflected in the experiences of the majority of leading global corporations. This research paper aims to explore the importance of artificial intelligence in activating e-marketing by presenting some pioneering experiences to learn from, namely the experiences of both **Amazon** and **Alibaba**.*

The study concluded that artificial intelligence holds significant importance through its numerous applications and examples of brands that have successfully and commendably outperformed their competitors and won their customers' satisfaction by using innovative marketing methods based on artificial intelligence. It has proven to be a revolutionary and strategic tool for maintaining marketing competitiveness.

Keywords: Artificial Intelligence; E-Marketing; AI Applications.

Utilisation des technologies d'intelligence artificielle dans le marketing électronique : expériences d'entreprises internationales

Résumé :

En raison des changements technologiques rapides auxquels les organisations sont confrontées aujourd'hui, l'utilisation des technologies électroniques et l'application de l'intelligence artificielle dans leurs activités sont devenues une nécessité impérieuse pour survivre sur le marché, affronter la concurrence et la surpasser. Cela se reflète dans les expériences de la majorité des grandes entreprises mondiales. Ce document de recherche vise à explorer l'importance de l'intelligence artificielle dans l'activation du marketing électronique en présentant quelques expériences pionnières dont on peut tirer des enseignements, à savoir celles d'Amazon et d'Alibaba.

L'étude a conclu que l'intelligence artificielle revêt une importance considérable grâce à ses nombreuses applications et aux exemples de marques qui ont réussi à surpasser leurs concurrents de manière remarquable et à gagner la satisfaction de leurs clients en utilisant des méthodes de marketing innovantes basées sur l'intelligence artificielle. Elle s'est avérée être un outil révolutionnaire et stratégique pour maintenir la compétitivité marketing.

Mots-clés : Intelligence artificielle ; E-marketing ; Applications de l'IA.

Introduction:

Digital marketing is one of the most important marketing methods in the modern era. The concept of digital marketing was first used in the 1990s, although at that time, it was primarily about advertising to customers. However, from the beginning of 2000, with the emergence of social media platforms and smartphone tools, this concept was expanded. It was transformed from a technology directed at advertising to users into a concept of creating an experience that interacts with them. Digital marketing has become a fundamental tool for market competition, as everyone is inadvertently immersed in the digital age, making its use the most effective tool for reaching potential consumers (Kannan, 2017).

Through artificial intelligence means, we see that it has a tremendous impact on the digital marketing industry. Certainly, the digital marketing industry is affected by machine learning, and marketing is changing at a revolutionary pace. We have witnessed significant strides in the technologies we use every day over the past ten years (Dimitris, 2019).

Research Problem: With the growing interest of researchers in digital marketing as one of the important tools in the field of marketing, especially with the increasing numbers of internet users and the products and services marketed electronically on web pages, and the big data available around the clock from social media sites, pages, and websites, artificial intelligence technology has emerged as one of the most important technological innovations of the Fourth Industrial Revolution. It has been extensively used in the field of digital marketing by companies and institutions to increase the effectiveness and success of their marketing processes. To

enhance marketing effectiveness, we need to leverage time in the marketing process, process big data more accurately, and provide all interaction and communication procedures at all times, which can be achieved through artificial intelligence means.

To understand the impact of these technologies more deeply, the following problem was raised: **How do artificial intelligence applications contribute to enhancing the efficiency of e-marketing methods?**

Research Importance: The significance of this study stems from its focus on one of the most prominent modern trends in the world of e-marketing, which is employing artificial intelligence technologies and applications to improve the effectiveness of marketing campaigns across digital platforms and channels. It also seeks to identify the most prominent applications of AI in e-marketing. Furthermore, this study is important for analyzing the impact of artificial intelligence on e-marketing. Additionally, it highlights examples of the best brands using AI in digital marketing and learning from their experiences.

Study Methodology: The study relied on the descriptive approach by presenting the most important concepts related to digital marketing and artificial intelligence, reviewing the main applications of AI, and analyzing the experiences of both **Amazon** and **Alibaba**.

Study Structure: This study was divided into three main sections. The first section was dedicated to addressing the concept of e-marketing by discussing its definition and evolution. The second section was allocated to presenting the concept of artificial intelligence and its various applications. The third section was devoted to presenting the experiences

of both **Amazon** and **Alibaba** in using AI applications to improve the quality of e-marketing.

1. The Conceptual Framework of E-Marketing

1.1. Definition of E-Marketing:

Gilmore et al. define e-marketing as the use of the Internet and related technologies along with other marketing tools to carry out traditional marketing operations and activities, find customers, communicate with them, and deliver value to them (Gilmore, Gallagher & Henry, 2007, p. 235).

E-marketing includes all interactive digital tools for promoting products and services in the context of personal and direct relationships with consumers. It concerns all digital communication means – the Internet, smartphones, and tablets – that facilitate and enhance the implementation of participatory marketing, amplifying the phenomenon of information dissemination and helping to turn word-of-mouth into viral marketing, which brands control to a greater or lesser extent (CREG: Centre de ressources en économie-gestion, 2013).

Digital marketing is the integration of digital media, data, and technology into marketing activities. Marketers use electronic media to promote products or services in the market with the aim of attracting customers and allowing them to interact with the brand. Its most important techniques include marketing through social media, online marketing (whether through websites, online ads, subscription emails, interactive kiosks, interactive TV, or mobile phones) (Lun all, 2021, p. 04).

Accordingly, the definition of digital marketing includes the use of the Internet and its related technologies and fea-

tures, such as the World Wide Web, online presence, email, real-time communication, and customer communication to help achieve marketing objectives.

1.2. E-Marketing Methods:

1.2.1. Search Engine Marketing (SEM):

Search Engine Marketing has proven to allow companies to target consumers by placing ads on search engines. It is an effective strategy for attracting the largest possible audience, unlike traditional online advertising, where advertisers only pay when users actually click on one of the ads. Therefore, most online advertising campaigns have two main goals: brand development and immediate direct response. It is characterized by two types: nominal pay-per-click (PPC) and search engine optimization (SEO).

1.2.2. Online Public Relations:

Online public relations manages publicity about the organization, its brands, products, services, or its websites through its presence on the Internet and third-party websites and other digital media. It also includes distributing press releases via email or on the website and submitting them to online news channels. It also includes:

- Link building and editorial generation
- Blogs, communities, and RSS
- Managing how the brand is presented across websites
- creating buzz and viral marketing.

1.2.3. Email Marketing:

Email marketing is a very effective method for distributing information about a product or for obtaining feedback

and inquiries from customers about the nature of the product or service offered via email. Email addresses of current and potential customers may be collected or purchased. This type of marketing is the most prominent form of direct marketing because it also achieves effective promotion of products and services, a significant increase in profit and sales rates, in addition to offering special offers on new goods. There are two main trends in email marketing: opt-in email or opt-out email (Kaur, Pathak, Kaur, 2015, p. 117).

2. The Conceptual Framework of Artificial Intelligence

2.1. Definition of Artificial Intelligence:

John McCarthy coined the term "artificial intelligence" in 1956 and defined it as: "the science and engineering of making intelligent machines, especially intelligent computer programs." That is, it is the science of creating computer hardware and software capable of thinking in the same way the human brain works. In this sense, artificial intelligence is the process of simulating human intelligence through complex computer systems (Khalifa, March-April 2017, p. 62).

According to the European Commission 2018, artificial intelligence (AI) refers to systems that display intelligent behavior by analyzing their environment and taking actions – with a certain degree of autonomy – to achieve specific goals.

Meanwhile, Demis Hassabis, co-founder and CEO of Google DeepMind, defines artificial intelligence as: "the science of making machines smart," which in turn enhances human knowledge and capabilities.

Taking this definition, the Drift and Marketing Artificial Intelligence Institute defined AI marketing as: the science of making marketing smart or digital (Roetzer, 2021).

Modern artificial intelligence (AI) is a broad subject that uses advanced techniques to extract predictions and insights from vast amounts of data. The core principle behind it is training machines to learn and solve the problems we deal with daily. The emergence of machine learning in the early twentieth century accelerated the development of AI (Thilagavathy & Praveen Kumar, 2021).

Accordingly, the term artificial intelligence, abbreviated as (AI), can be defined as: the ability of machines and digital computers to perform specific tasks that mimic and resemble those performed by intelligent beings; such as the ability to think or learn from previous experiences or other processes that require mental operations. Artificial intelligence also aims to reach systems that possess intelligence and behave in the way humans do in terms of learning and understanding.

2.2. Key Applications of Artificial Intelligence in Marketing :

Artificial intelligence can provide marketers with relevant marketing information to better serve their customers. The following are some examples of how AI marketing is used in modern businesses :

2.2.1. Data Analysis :

Data analysis is the core of artificial intelligence in marketing. Predictive analytics are applied to data obtained by the organization not only from traditional metrics but also

from consumer engagement, incoming communications, and any other inputs from other communication channels. Among the metrics that may...

...the organization is likely to encounter include: number of clicks, views, purchases, time spent on the page, email responses, etc. From this, marketers gain actionable insights that enable them to make data-driven decisions and adjust their marketing campaigns accordingly.

Simply put, the algorithms used in artificial intelligence not only predict outcomes but also help marketing entities act based on the predicted results. Predictive analysis indicates potential consumer behavior based on previous data, while prescriptive analysis guides marketers to where they need to be and what they need to do to improve their position for the benefit of their customers. This type of technology will significantly enhance an organization's strategy, moving from simple automation to "suggesting" the recommended action and even executing the strategic action (Mileva, 2022).

2.2.2. Real-Time Sales Forecasting:

Sales forecasting is the process of estimating future sales based on historical data, market trends, customer behavior, and other factors. It helps sales teams plan their strategies, allocate resources, and measure performance. However, traditional sales forecasting methods like spreadsheets and manual calculations are often inaccurate, time-consuming, and prone to error. For this reason, many organizations are turning to artificial intelligence (AI) to improve the accuracy and efficiency of sales forecasting.

AI-powered sales forecasting refers to the use of advanced algorithms, machine learning, and data science to analyze large and complex datasets, identify patterns and trends, and generate accurate and reliable sales predictions. AI can also automate and streamline the sales forecasting process, reducing human bias, errors, and manual labor. AI can also provide insights and recommendations to help sales teams improve their strategies, actions, and outcomes (LinkedIn, 2023).

Real-time sales forecasting is a prime example of how AI is used to improve sales forecasting. Due to fluctuations in demand for products and services, real-time data provides timely information, allowing companies to quickly predict customer needs and behavior. This ensures that products are available when customers want them, thereby improving both customer satisfaction and company performance (Mention, 2022).

2.2.3. Chatbots:

A chatbot is a program that can conduct conversations or chats using artificial intelligence to determine responses. Chatbots can conduct voice or text conversations, with the latter typically appearing as chat windows on the user's computer screen (Saikumar, 2022).

Chatbots are defined as: "an artificial construct designed to converse with humans using natural language as input and output" (Bouchra El Bakkouri, 2022, p. 433).

The most interesting aspect of chatbots is their impact on the customer experience. Some companies may not have enough staff or hours in the day to respond to customer in-

quiries quickly, and in this case, chatbots enable customers to help themselves (Cheng, 2022).

From a digital marketing perspective, chatbots provide the possibility of interacting with a target audience on a personal level (Jelena Salkovska, 2021, p. 383).

Many companies use chatbots for marketing purposes. Some have AI-powered chatbots to assist the sales team in improving the customer journey, generating leads, and encouraging sales. Others use this computer program as part of the support team to provide real-time assistance to customers (Stefanowicz, 2022).

Chatbots are used to promote products and services through targeted messages to increase brand visibility, enhance customer engagement, and automate lead generation processes (Digite, 2023).

2.2.4. Customer Sentiment Recognition (Emotional AI):

Emotions play an important role in shaping our actions, which is why organizations aspire to understand and connect with consumers on a deeper level. Emotional Artificial Intelligence (Emotion AI) is a field of AI focused on measuring, understanding, simulating, and responding to human emotions (Johnson, 2023).

Emotional AI enables the detection and interpretation of human emotions by analyzing text, voice, video, or a combination of all these elements. This technology uses tools such as natural language processing and sentiment analysis, audio emotional AI, facial movement analysis, and physiological signals to understand how consumers respond to specific advertisements, products, or situations. Therefore, it enables

brands to respond quickly based on consumer emotions, adjusting their digital strategy in real-time (Zhang, 2021).

2.2.5. AI-Powered Digital Advertising:

AI is widely used on platforms like Facebook, Google, and Instagram, and it is also one of the technologies achieving success in digital advertising. The platforms mentioned above analyze user information, including gender, age, interests, demographics, and other data, to display the most relevant ads according to their tastes. This ultimately enhances digital marketing efforts. Using AI technology, marketers know trends and can even predict them, thus helping to effectively plan e-marketing strategies (Orionators, 2020).

2.2.6. Image Recognition Technology:

Image recognition technology allows customers to shop using their camera or perform a "visual search" for a specific product. Visual search is where the searcher provides an image instead of typing a query, and the search engine displays results of similar images. It is a relatively new concept but should be considered an increasingly powerful tool for brands and e-commerce platforms (Silverdisc, 2020).

2.2.7. Dynamic Pricing:

Dynamic pricing is a method used by business leaders to optimize their prices according to market and consumer data in order to attract more customers and increase profits. While traditional dynamic pricing algorithms use historical data to estimate the best prices, modern dynamic pricing algorithms leverage more data along with machine learning

and AI capabilities to better predict market trends and optimize prices accordingly.

A dynamic pricing algorithm is the set of inputs and instructions underlying any dynamic pricing strategy. Dynamic pricing algorithms input data about a product or service and output what the optimal price would be under certain conditions in order to maximize the organization's profits while retaining customers. Dynamic pricing algorithms leverage historical data on product prices, production costs, market trends, and customer purchasing behavior (Dilme-gani, 2023).

3. Experiences of Amazon and Alibaba

Artificial intelligence has become a fundamental tool in the field of e-marketing, revolutionizing the e-marketing industry. Major companies now rely on it to achieve superiority and leadership. Below, we summarize the experiences of both **Amazon** and **Alibaba** in implementing e-marketing using AI applications.

3.1. Alibaba:

The Chinese company Alibaba is the world's largest e-commerce platform. Artificial intelligence (AI) is an integral part of the company's daily operations and is used to predict what customers might want to buy. Using natural language processing, the company automatically generates product descriptions for the website.

It is the world's largest e-commerce marketplace, investing heavily in AI and machine learning to elevate its business to new heights. Most tech giants, alongside Alibaba, are making significant contributions in the Chinese tech market,

with help from the Chinese government, to build a \$1 trillion AI industry by 2030. Alibaba also owns seven research laboratories focusing on AI, machine learning, natural language processing, and network security. Let's see how AI has transformed Alibaba in various ways. The company uses several methods to bolster AI, including:

- **Small Smart Selection:** This is an algorithm powered by AI, deep learning, and natural language processing that helps recommend products to shopping customers and then connects with retailers to increase inventory to keep up with demand for products and services. This has helped the company expand its business in all ways by coordinating with both customers and retailers.
- **Chatbot:** The company also created an AI-powered chatbot that can understand over 90% of customer inquiries. It can also understand customer sentiment and can prioritize human customer service agents and alert them to intervene. The e-business also uses robots and drones to deliver packages. There are over 200 robots in the automated warehouse that can process one million shipments per day. Many believe that only retailers can survive, and Alibaba provides the structure to make that possible.
- Alibaba uses AI to improve its supply chain, drive customized products, and build products. It also provides cloud-based AI that makes AI accessible to anyone with an internet connection, a computer, and an AI chip available via the cloud.

- **City Brain:** This is a project to create smart cities. The project uses AI algorithms to help reduce traffic congestion by monitoring every vehicle in the city.
- **Alibaba Cloud:** Through its cloud computing division, Alibaba helps farmers monitor crops to improve yield and reduce costs using AI.
- **Digital Shelf Price Tag:** Alibaba is currently developing what they call a "digital shelf price tag" that uses electronic ink to wirelessly connect to the store's actual data system. Retailers are able to change prices quickly and on demand. They can also track inventory and display sales trends, opening a world of opportunities for life beyond e-commerce and digital marketing.

3.2. Amazon:

Amazon is the world's largest online retailer by market capitalization. Founded in 1994 in Seattle, Washington, as a platform for selling books, Amazon has become a household name offering a variety of products and services. As of 2020, online retail product sales represent the majority of the company's net revenue, followed by third-party retailer services, Amazon Web Services, and subscription services. Today, the company boasts mature AI applications across e-commerce, logistics, storage, and more. Amazon claims to be driven by four principles, the first of which is "customer obsession rather than competitor focus". (Artificial Intelligence Research, 2022)

Amazon's role in the AI game is not limited to its digital voice assistant Alexa; AI is also part of many aspects of its business. Another innovative way Amazon uses AI is by shipping things to you before you even think about buying

them. They collect vast amounts of data about each person's purchasing habits and have such confidence in the way the data they collect helps them recommend items to their customers that they now anticipate what they need even before they need it using predictive analytics. At a time when many traditional stores are struggling to figure out how to stay connected, America's largest e-retailer is introducing a new concept for a small store called Amazon Go. Unlike other stores...

3.2.1. Amazon's Artificial Intelligence Strategies:

Amazon adopts several strategies within the framework of artificial intelligence, including:

Alexa-Enabled Voice Shopping: The question posed here is how Amazon enabled a hands-free shopping experience by training Alexa to better interpret and predict customer needs.

Generally, this AI application aims to increase convenience for customers shopping on Amazon, from creating a shopping list to getting recommendations from Alexa. For Amazon, this investment in AI allows the company to try to solidify its market position by maintaining an advantage in providing consumer convenience. Amazon explains how Alexa works in general.

The machine learning process behind Alexa-enabled voice shopping is similar. The user can activate Alexa and start listing items they want to search for, buy, or add to their shopping list. When items are added to the customer's shopping list through Alexa voice shopping, they can access a text version of this list in their Alexa app and make changes later. Amazon states that users can activate voice shop-

ping with Alexa through their Alexa-enabled devices like Echo, Amazon Fire TV Cube, Dot, and more. The company also claims that Alexa helps users by suggesting types of products they frequently buy or recommending products labeled "Amazon's Choice" if they are searching for an item they haven't purchased before.

Personalized Product Recommendations: Amazon offers personalized product recommendations as a marketing tactic that allows the company to continue gaining greater market share and keep satisfying customers by accurately predicting their needs through recommendations.

4. Challenges Faced by Amazon and Alibaba and the Role of AI in Strengthening E-Marketing:

If there's one thing for certain, it's that there is a dominant character in the world of digital marketing and e-commerce. I bet you immediately thought of Amazon—and for good reason. They have 300 million active users, generate billions in online revenue every year, and hold a 49.1% share of the e-commerce market in the United States. They are the literal definition of a tech giant. And they continue to grow beyond e-commerce. Alibaba is ready to battle in the field of e-commerce and beyond.

Alibaba is healthy and growing strongly. In fact, Alibaba recorded a net income of \$9.6 billion in the fiscal year ending March 2018. Alibaba brings in 552 million active shoppers, a stunning advance over Amazon. Alibaba's share of the Chinese e-commerce market is 60 percent and is growing steadily over time. So, based on net numbers alone, this round goes to Alibaba.

Although its revenue and number of active shoppers are commendable, Alibaba has become famous for its innovations—a key reason why it might stand a chance in the battle against Amazon. Alibaba has built the world's fastest cloud-based stream processing platform, an innovation that Amazon currently lacks. Using this platform, the company accelerates the scaling and management of enormous amounts of data and transactions that would otherwise be impossible.

In 2016, during a sale event, Alibaba's platform processed 175,000 transactions per second or 10 million orders per minute. Every transaction remained secure and safe, even though the figure was out of this world. Alibaba's servers currently store 1000 petabytes of data, a number unheard of anywhere else.

Simply put, Alibaba's innovations are more impressive than Amazon's. However, both companies are experiencing steady growth unheard of in the e-commerce world. Amazon's stock price more than doubled last year, while Alibaba's stock price has remained stagnant. Although the trade war may be the reason for the stagnation of Alibaba's stock, Amazon benefited from the market and at one point surpassed the \$2000 level with a market cap of over a trillion dollars. This has since declined slightly with the recent market downturn.

Nevertheless, Alibaba continues its growth at 60 percent and has double-digit margins. Amazon, on the other hand, is growing at 40 percent and has to work hard to achieve 5 percent margins. It seems that when one pole fails, the other picks up the slack. (Newman, 2018)

Conclusion:

Our world today is characterized by a massive reliance on technology, which e-commerce knows well in terms of the technology integrated and used in all its aspects. Therefore, online shopping has witnessed a qualitative leap with the synchronization and development of this technology. Artificial intelligence is considered one of the most modern developments, given the expansion it has allowed for its diverse applications and uses. Thus, we find today's online shopper more eager for service diversity, ease of access, obtaining information, and online shopping in general. This has been met with a response from e-marketing technology and artificial intelligence, allowing for development and a transition to a higher level of the online shopping experience.

Study Findings and Recommendations:

Study Findings:

- Artificial intelligence has become one of the fundamental tools in the e-marketing arsenal as a result of an electronic revolution, and its use has become an imperative necessity for all companies.
- Alibaba adopts various AI strategies, utilizing them to strengthen the company's e-marketing.
- Amazon is considered one of the largest companies worldwide that heavily adopts artificial intelligence and applies it to improve the quality of its e-marketing.
- The adoption of artificial intelligence in e-marketing allows for increased sales, enhanced customer retention, more effective launching of new products, and granting a competitive advantage to the company through

accurate prediction of future trends and consumer behavior.

Recommendations:

- Organizations now, more than ever, need to understand the importance of using and applying artificial intelligence in their marketing and innovative activities, especially to facilitate transactions, handle huge amounts of data, understand customer thinking, and innovate products and services that meet their needs more accurately.
- Organizations can use artificial intelligence to gather accurate information about customers, such as through smart locks, comments, big data analysis, and understanding their tendencies. This helps in making sound decisions and taking appropriate actions in the future, saving a lot of time and effort.
- Organizations must use artificial intelligence to facilitate personalized communication with their audience. This leads to consumers bonding with organizations and building lasting relationships with them.
- Work on keeping pace with technological developments and the imperative of intensifying the use of technological techniques to market products and services, developing communication channels, or adding new electronic channels to maintain current customers and attract new ones. Activate customer communication, such as using automated chatbots for quick responses to customer inquiries.
- Currently, interacting with consumers on social media sites is beneficial for organizations. The latter can

achieve a lasting impact through an effective marketing campaign strategy and creative content, which can lead to more sales and greater loyalty.

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