

The Role of Generative Artificial Intelligence in Enhancing Marketing Decision Support Systems in Startups: A Case Study of Copy.ai

* HAMOUDA Nacira¹, BENKHEDIDJA Moncef²

¹University of Souk Ahras (Algeria), n.hamouda@univ-soukahras.dz

²University of Souk Ahras (Algeria), moncef.benkhedidja@univ-soukahras.dz

Received: 06/10/2025

Accepted: 09/10/2025

Published: 25/12/2025

Abstract:

This study aims to analyze the role of generative artificial intelligence (GenAI) in enhancing marketing decision support systems in startups, using Copy.ai as a case study. The study adopted a descriptive analytical approach, in addition to the case study methodology.

The results revealed that generative artificial intelligence contributes to improve the efficiency of content creation processes, increasing the effectiveness of advertising campaigns through generating diverse ad copies, and enhancing personalization in customer communication. The study also revealed that generative artificial intelligence constitutes an integrated decision-support system that contributes to enhance the marketing growth of startups.

The study recommends integrating these technological tools in marketing strategies of startups, while emphasizing the critical role of human oversight to ensure their effectiveness.

Key words: Generative Artificial Intelligence, Decision Support Systems, Marketing Decisions, Startups, Copy.ai.

Classification JEL: M31, Q33

*Corresponding author.

introduction:

The contemporary business world is witnessing a radical transformation driven by the technological and digital boom, which necessitates that organizations, particularly startups, adopt advanced tools to ensure their survival and growth. This is reflected in the major marketing constraints that these organizations confront, such as limited human and material resources and the requirement to achieve rapid expansion in a highly competitive market.

At the center of this change, generative artificial intelligence (GenAI) has emerged as one of the most significant technologies, changing efficiency and creativity standards in a variety of industries. It serves as an innovative solution for supporting decision-making processes through the automation of content creation and the generation of creative ideas.

The field of marketing particularly benefits significantly from the applications of this technology, which has contributed to shifting the decision-making process from reliance on intuition to dependence on data and automatically extracted insights. However, these immense capabilities of Generative AI are juxtaposed with real practical challenges, especially for startups that suffer from limited resources and expertise. This consequently raises questions regarding the actual feasibility of integrating these tools into their marketing practices.

Study Problem Statement

Despite the rapid development of Generative Artificial Intelligence (GenAI) and the expansion of its application domains, its capacity to enhance Marketing Decision Support Systems (MDSS) within startups still requires further research and analysis. These organizations suffer from resource constraints, ambiguity in their market environments, in addition to a crucial need for innovative tools that enable them to elevate their marketing efficiency.

Accordingly, the problem of the study takes shape in the following main question: How can Generative Artificial Intelligence contribute to enhancing Marketing Decision Support Systems in startups, through analyzing the experience of Copy.ai as a case model in this field?

This main question branches into the following sub-questions:

- What is the concept of Marketing Decision Support Systems (MDSS)? And what is their significance for the decision-maker?
- What is Generative Artificial Intelligence (GenAI)? And what are its benefits and most important tools?
- What are the uses of Generative AI in the field of marketing?
- What are the lessons learned and best practices that other startups can extract from the experience of Copy.ai?

Study Objectives

This study aims to highlight the role played by Generative Artificial Intelligence (GenAI) in enhancing Marketing Decision Support Systems (MDSS) within startups. This is achieved by analyzing the operational mechanism of Generative AI applications, with a specific focus on the experience of Copy.ai, and how it is utilized to generate creative and optimized marketing content.

The Role of Generative Artificial Intelligence in Enhancing Marketing Decision Support Systems in Startups: A Case Study of Copy.ai

In addition, the study aims to assess the extent to which this type of technology (such as Copy.ai) helps businesses overcome obstacles such as resource limits, the requirement for rapid market reaction, and marketing content creation.

Significance of the study

This study's theoretical significance stems from its ability to bridge the research gap in terms of practical mechanisms for incorporating Generative AI into startup marketing tactics. Furthermore, it provides a theoretical framework for examining real-world opportunities and challenges.

The practical significance comes from presenting a specific practical model through the analysis of the Copy.ai case study. This approach provides concrete tips for entrepreneurs on how to use these technologies to improve the accuracy and efficiency of their marketing decisions.

Study Methodology

The study used a descriptive-analytical technique (or descriptive research design) to better comprehend the theoretical framework of Marketing Decision Support Systems, Generative Artificial Intelligence, and its marketing applications. This method was also utilized to present, assess, and compare earlier studies to current research. In addition, the case study technique was used to analyze Copy.ai as a paradigm in this field.

I. Theoretical Framework and Literature Review

The theoretical framework included essential ideas such as Marketing Decision Support Systems (MDSS), Generative Artificial Intelligence (GenAI), and their applications in marketing, as well as a review of the most significant publications on the subject.

1. Marketing Decision Support Systems (MDSS) and Their Types

When addressing marketing decisions, one must provide the required facts for marketing managers. This data comes from a variety of sources, both external (competitors, customers, and technology) and internal (production and shipping costs). Marketing Information Systems (MIS) manages and processes this data in order to provide the firm with a competitive advantage.

According to **Little**, a variety of elements, including competitive pressure, the presence of multiple objectives, uncertainty, environmental effect, and information gaps, all have an impact on marketing decision-making processes, adding to their complexity. (Matsatsinis & Siskos, 2003, p. 28). However, research in the field of marketing and management science has led to the formation of a variety of marketing models aimed at supporting decision-makers in their attempt to define and understand the situation.

In this context, **Imamagic** defines a "Decision Support System" (DSS) as "an information system designed to support the business and organizational decision-making process. System uses a database documents, stored knowledge, and built models and procedures to display the different views of the requested information. (Dulcic , Pavlic, & Silic, 2012, p. 1565)" A system is considered successful when it is simple in design, strong in performance, adaptable to changes, functionally integrated, easy to use, and provides a comfortable and intuitive user interface.

Licker, looks to Decision Support Systems (DSS) as "interactive computerized systems that help the decision-maker use data and models to solve unstructured (unprogrammed) problems" (Saad Ghalib, 2009, p. 107), meaning new and non-recurring problems.

A Decision Support System can be used to improve the quality of the information upon which the decision is based. The system presents a number of alternative solutions instead of a single, simple solution, which helps decision-makers deeply understand the nature of the problems and consequently improve their decisions (Foivos & Kiritsis, 2022).

It is noteworthy that Marketing Decision Support Systems (MDSS) are composed of the same components as regular DSSs. The core essential features of an MDSS are similar to those of a DSS; however, their difference lies in the method of obtaining primary information, as primary information in MDSS is typically obtained through market surveys (Matsatsinis & Siskos, Intelligent Support Systems For Marketing Decisions, 2003, p. 114).

In this context, Little defined a Marketing Decision Support System as "a coordinated set of data, systems, tools and techniques with supporting software and hardware by which an organization gathers and interprets relevant information from business and environment and turns it into a basis for marketing action" (Figueroa-Perez & al, 2019, p. 762).

Generally, the core idea underlying Decision Support Systems is to build systems that provide the end-user with useful tools for data analysis using models and databases, and for presenting possible solutions to the problems at hand (Saad Ghalib, 2009, p. 108).

Decision Support Systems (DSS) are primarily distinguished into three fundamental types based on their level of intervention in the decision-making process: (Fernando, 2022, pp. 13-18)

- **Passive DSS:** These systems efficiently collect and organize information but do not offer any suggestions or decisions based on the aggregated information.
- **Active DSS:** These systems collect and process information to generate solutions and strategies.
- **Cooperative DSS:** These systems gather and analyze data and, through human interaction, refine the solutions to obtain the best strategies based on applications.

Decision Support Systems (DSS) are also categorized as various types which are described as below (Kumar, 2020, pp. 186-187):

- **Data-Driven DSS** focuses primarily on the process of collecting Big Data as the initial step, subsequently processing the aggregated information to support decision-making within a limited timeframe. The typical target users for this system include managers, employees, suppliers, and service teams.

The Role of Generative Artificial Intelligence in Enhancing Marketing Decision Support Systems in Startups: A Case Study of Copy.ai

- **Communication-Driven DSS** is centered on supporting group tasks and collaboration among multiple individuals. It aims to facilitate joint work to develop superior strategies, often relying on web-based technologies or a client-server model to enable this collective effort.
- **Document-Driven DSS** concentrates on the management and retrieval of knowledge extracted from unstructured documents. It systematically searches document repositories—which may include texts, databases, and spreadsheets—to identify information that is relevant to a specific, defined user group.
- **Model-Driven DSS** emphasizes quantitative analysis using preset parameters and models. Crucially, this type does not require a significant amount of data and performs critical analytical duties. Its intended users are usually managers and staff who deal directly with the company.
- **The Knowledge-Driven DSS** leverages knowledge bases to provide advice and recommendations. It can recommend specific activities or assist in the selection of appropriate products and services by imitating problem-solving abilities, ensuring broad coverage for users across the enterprise.

It is worth noting in this context that the modern collaboration between Multi-Criteria Analysis (MCA), Decision Support Systems (DSS), and Artificial Intelligence (AI) in the marketing domain has resulted in particularly significant strategic marketing decisions, namely those related to new product development and market penetration strategies.

It is worth noting that the first applications of AI in marketing appeared in 1986, with the publishing of works by "Shufry and Chapin, Rangaravani, Burke, Eliashberg, and Wind." These research initiatives focused on both a purely scientific direction and marketing decision support, which has now been expanded. (Matsatsinis & Siskos, *Intelligent Support Systems For Marketing Decisions*, 2003, p. 06).

2. Generative Artificial Intelligence and Its Applications in Marketing

The term Artificial Intelligence (AI) is composed of two parts: the first is "Intelligence," which expresses the capacity for understanding and thinking, and the second is "Artificial," which refers to something synthetic or non-natural. AI can be defined as: the study of intellectual capabilities using computational models, focusing on how to simulate human thinking ((Zazal & Ja'lab, 2025, pp. 139-140).

Artificial Intelligence is also defined as a set of computerized systems that perform tasks typically associated with humans. AI reaches or surpasses human-level intelligence, achieving human-like levels of perception, reasoning, interaction, and learning (Rios-Campos & others, 2024, p. 956).

Generative Artificial Intelligence, however, is a "type of machine learning capable of generating data in various formats and adapting to new tasks instantly, by following simple text instructions" (Rezazadeh & others, 2025, p. 01).

Generative Artificial Intelligence, or its abbreviation (GenAI), refers to AI technologies that focus on learning the patterns and representation methods found in training data, with the goal of generating new and innovative content in various types, including: texts, images, audio and visual clips, programming codes, and even simulations. ((SDAIA), 2025, p. 12)

Based on the previous definitions, Generative Artificial Intelligence (GenAI) can be defined as an advanced technology nested under machine learning and deep learning. It learns patterns from training data to generate new and innovative content (such as texts, images, and audio) that is similar to the original but not an identical copy, based on simple text prompts.

Generative Artificial Intelligence (GenAI) contributes to enhancing operational efficiency, productivity, decision-making, and the development of innovative solutions, in addition to addressing various challenges. These benefits can be summarized as follows (Digital Government Authority, 2025, p. 03) :

- **Software Solution Development:** Create reusable code and automate debugging to reduce development time.
- **Reduced operational costs:** by automating repetitive processes, reallocating resources, and cutting manual labor expenses.
- **Improved productivity and operational efficiency:** by automating routine tasks and providing quick access to relevant information across multiple data sets. This reduces time spent on repetitive tasks and optimizes resource utilization, resulting in streamlined workflows.
- **Enhanced Decision Activation and Making:** Providing instant access to sensitive data for legal teams and intelligence operations in the governmental sector, for instance.
- **Simplified Beneficiary Experience:** Offering seamless experiences through the real-time automation of virtual support solutions, ensuring service availability to the beneficiary 24/7.
- **Fostering Innovation:** Activating an environment and incubator for innovation by generating new ideas, analyzing comprehensive data sets to identify emerging trends, and proposing innovative policies.

Furthermore, Generative AI applications and models help to accelerate the pace of software development and raise its efficiency by increasing the speed of developers' task performance. According to a study by McKinsey, GenAI affects time reduction at varying percentages based on the task type and complexity level. For example, the time required for writing code can be reduced by a range between 35% and 45%, whereas the duration for performing highly complex programming tasks will be reduced by a percentage reaching less than 10% ((SDAIA), 2025, p. 67)

The Role of Generative Artificial Intelligence in Enhancing Marketing Decision Support Systems in Startups: A Case Study of Copy.ai

As for the functional areas that utilize Generative Artificial Intelligence (GenAI) the most, a study by McKinsey & Company clarified that marketing and sales, product and service development, and information technology (IT) are the sectors with the highest adoption of this technology (SDAIA, 2025, p. 42).

There are lots of applications of Generative Artificial Intelligence (GenAI), the most prominent of which include:

- **ChatGPT:** This is a chatbot primarily based on AI technology, capable of understanding natural human languages and generating accurate written text in a human-like manner. The program is the latest chatbot produced by OpenAI. It has been trained on various languages and fundamentally relies on Deep Learning technology to better understand texts and answer questions. It can be utilized across different fields such as learning and education, consulting and technical support, translation, marketing, and advertising (Office of the Minister of State for AI, 2023, p. 13).
- **DALL·E 2:** An AI system developed by OpenAI (the same company that developed ChatGPT) for creating realistic images and artwork. The DALL·E 2 system helps idea owners form images and drawings of their concepts based on a written descriptive text prompt entered by the user.
- **Jasper:** An automated assistant built on AI technologies that aims to create content specifically for organizations and enrich their content with unique features. These features include searching for images, generating text responses, and proposing ideas in a coordinated manner that aligns with the user's requirements and their workplace.
- **Synthesia:** This platform is distinguished by its ability to create realistic visual content (video) of a virtual persona from written script content within minutes. The user must create an account, enter the required scenario to be narrated by the virtual persona, and the AI-powered Synthesia platform will generate the visual content. (Office of the Minister of State for AI, 2023, pp. 66-68).
- **Midjourney:** A Generative AI platform that creates images based on a textual description, similar to OpenAI's DALL·E program. Notably, Midjourney has become widely used by television programs, magazines, newspapers, and organizations (Office of the Minister of State for AI, 2023, p. 62).

3. Current Uses of Generative Artificial Intelligence in Marketing

The following examples show how Generative Artificial Intelligence (GenAI) is being used in marketing today (Company & McKinsey, 2023, November 17):

- **Personalizing marketing campaigns:** For example, the craft business Michaels uses GenAI as part of their strategy to increase consumer engagement through more personalized and iterative interactions with its customers. The organization created a platform for content production and decision-making to aid in the development of marketing texts and a better understanding of how different client segments react to varied messages. Michaels increased personalization from 20% to

95% of their email marketing. This increased the click-through rate for text messaging campaigns by 41% and email campaigns by 25%.

- **Analyzing Unstructured Customer Data:** For example, the personal styling service Stitch Fix employs AI to assist designers in interpreting customer feedback and providing product recommendations. Similarly, Instacart uses AI to offer customers recipes and meal planning ideas, as well as to create shopping lists.
- **Automating Operations:** In one case, a direct-to-consumer (DTC) retailer uses AI to help resolve customer tickets, such as receiving orders or repair requests. By using AI to automate process steps (like retrieving information from the system, making necessary changes, and responding to customers in the brand's voice), the company witnessed a reduction in the first-response time by over 80% and a decrease in the average ticket resolution time by four minutes. Furthermore, the use of AI afforded the company's customer support team more time to focus on high-level customer interactions.
- **Identifying Opportunities and Generating Ideas:** Marketers use Generative AI to analyze competitor movements, assess consumer sentiment, and test new product opportunities. For example, Mattel utilizes AI in the development of its Hot Wheels products to generate four times the number of product concept images compared to previously, which inspires new features and designs.

4. Literature Review and Comparison with the Current Study

- **Previous Studies**

- **Heba Bouchoucha's** (2015) study, "**The Role of Marketing Information Systems in Marketing Decision-Making and Supporting the Control Process within the Marketing Function**," published in the Journal of Economic and Financial Research, aimed to identify the role of the Marketing Information System (MIS) in supporting decision-making, formulating high-quality marketing decisions, and contributing to effective marketing. The study concluded that the MIS effectively contributes to marketing-related decision-making and that a marketing manager's decision-making is heavily dependent on the data and information provided by the Management Information System (MIS) in general and the Marketing Information System in particular. Finally, the study recommended that this method be developed further.
- **Baya and Kennouni's** 2021 study, "**Electronic Marketing and its Role in the Development of Startups**," published in the Journal of Economic Growth and Entrepreneurship (JEGE), examines the impact of electronic marketing on startup growth and success. The study concluded that it is critical for startups to use electronic marketing technology, given its significance in providing these firms with the competencies and skills required for rapid market response. As a result, the entrepreneurs' capacities grow, and their organizations gain a competitive advantage.
- **J. Francisco Figueroa-Perez et al.'s** (2019) study, "**The Use of Marketing Decision Support Systems for New Product Design: A Review**," published in the International Journal of Computational Intelligence Systems, reviewed current research on MDSS for new product design. This was accomplished through a thorough literature assessment of works published between 1998

The Role of Generative Artificial Intelligence in Enhancing Marketing Decision Support Systems in Startups: A Case Study of Copy.ai

and 2018, employing formal conceptual analysis. Out of 375 total publications, 61 met the inclusion criteria and were classified into various dimensions, including MDSS types, decision support, distributed decision support, and the consideration of consumer satisfaction and the distributed environment. The research concluded that desktop and model-based systems are the generally accepted types of MDSS for new product design. However, the study found that crucial aspects of this decision-making process, such as distributed decision support and consumer satisfaction, are rarely incorporated into the MDSS created thus far.

- **T. Senthil Kumar's (2020)** study, "**Data Mining Based Marketing Decision Support System Using Hybrid Machine Learning Algorithm**," published in the Journal of Artificial Intelligence and Capsule Networks, proposed a data mining-based DSS that uses a decision tree and an Artificial Neural Network to estimate an organization's marketing strategies. The research dilemma stemmed from the finding that the majority of earlier DSS research used traditional statistical models, with very few studies using machine learning methods. As a result, the proposed model was developed as a hybrid strategy to provide effective decision support in the marketing domain, since it improves organizational performance through reality analysis while also reducing the responsibilities of strategic analysis and planning through an effective data mining technique. The proposed hybrid model was used in a manufacturing company to help them make marketing decisions while also taking into account internal concerns within the company and its marketing department. By comparing the experimental findings to a typical DSS based on the Hidden Markov Model and the Support Vector Machine, it was discovered that the proposed model achieved better classification results, making it suitable for research in a variety of domains. The researcher proposed expanding this research in the future by including optimization models to improve evaluation performance.

• Commentary on of Previous Studies and Comparison with the Current Research

The previous research can be considered as a historical evolution of marketing decision support systems, ranging from traditional Marketing Information Systems (MIS) to more advanced AI-based Decision Support Systems. This setting emphasizes the position of the current study as an advanced link in this technological advancement.

Bouchoucha (2015) examined the strategic function of MIS as a requirement for supporting high-quality decisions. The current study expands on this notion by moving from MIS as a broad concept to an advanced intelligent tool (Generative AI), which takes decision assistance to an unprecedented level.

The research by **Baya and Kennouni (2021)** identified the specific importance of electronic marketing for startups. The current study adopts this critical context (resource-constrained startups) and presents the optimal solution: Generative AI. GenAI can compensate for the lack of human resources and expertise and can be considered one of the most advanced electronic marketing tools.

Crucially, the current research examines how GenAI can enhance a startup's ability to make marketing decisions intelligently and rapidly.

Furthermore, the study by **Figuroa-Perez et al. (2019)** revealed that most DSSs were traditional (desktop and model-based) and neglected vital factors like consumer satisfaction in design. The current study directly addresses this shortcoming; Generative AI tackles consumer satisfaction by simulating customer language and generating personalized content.

Kumar's (2020) study marks the previous apex of development in machine learning (Decision Trees, Neural Networks). The main distinction is that Kumar's methodology is largely for "classification" and predictive analysis using existing data. In contrast, Generative AI in the current study not only analyzes but also generates new content (texts, images, and tactics) from scratch, indicating a qualitative shift from analysis to automated creation.

As a result, **the present** research does more than just apply new technology to an old problem; rather, it fundamentally changes the way marketing decision support works, indicating a shift from "data analysis" (**Kumar, 2020**) to "creative solution generation" (**present research**). This is especially evident in the choice of Copy.ai as a case study, as it provides practical evidence of how startups can capitalize on this technological leap to gain a competitive advantage—a goal requested by **Baya and Kennouni (2021)** but without identifying the optimal mechanism, which the **current study** now precisely defines.

II. Case Study: Analyzing the Experience of Copy.ai

Before we begin this part, it should be emphasized that Copy.ai is an AI platform that began as a startup and is now fast developing into a top company in its industry. It should also be mentioned that the information about Copy.ai was gathered from the platform's official primary sources (its official blog and marketing content) as well as credible secondary sites covering technology news. Wherever feasible, each source has been linked directly.

1. Introduction to Copy.ai

Copy.ai is a Generative Artificial Intelligence (GenAI) platform that automates and creates marketing and textual content. It has expanded beyond simply text production into a full platform for process automation for marketing and sales teams. (Copy.ai, 2025).

Copy.ai was formed in 2020 by Paul Yacoubian (CEO) and Chris Lu (CTO). The firm formally debuted in early 2021, leveraging the growth in Generative AI tools, notably Large Language Models (LLMs), such as OpenAI's GPT-3 (Copy.ai, 2025)

2. Analyzing the Role of Generative AI in Supporting Marketing Decisions at Copy.ai

The Role of Generative Artificial Intelligence in Enhancing Marketing Decision Support Systems in Startups: A Case Study of Copy.ai

Copy.ai is used as an analytical model not only because it is a prominent provider of Generative AI tools, but also because it serves as a real case study demonstrating how these tools may be used in self-marketing and decision-making. This gives valuable, applicable information that other firms might use as they consider implementing this potential technology.

Copy.ai offers a comprehensive AI-powered solution for marketing teams. Its proprietary Go-to-Market (GTM) AI Platform transforms the way organizations approach content creation, Account-Based Marketing (ABM), and demand generation—to name a few—by codifying the entire marketing methodology and converting it into AI-driven processes. Copy.ai facilitates workflows, reduces costs, and enhances the effectiveness of marketing efforts across all channels. This AI-reliant strategy enables marketing teams to create highly personalized and data-driven campaigns that resonate with target audiences, leading to increased engagement and revenue growth without requiring extensive AI expertise from the client organizations' teams (Copy.ai, 2025).

In this context, the company announced a 480% revenue increase up to 2024, showcasing accelerated growth, with its total annual recurring revenue exceeding 20% for four consecutive months. The company initially gained widespread recognition as a self-service text generation tool, used by over 17 million people, before transitioning into an enterprise SaaS solution (a model for delivering software online, where the customer subscribes to and uses the service without needing to install it on their devices) for automating complex workflows, a shift enabled by GPT-4 unlocking new capabilities in generative AI workloads.

In the same vein, Roman Oulni (Head of Global Digital Experience at Lenovo) indicated that Copy.ai played a huge role in changing how their team develops marketing content. By automating workflows that typically took weeks and cost thousands of dollars through agencies, Copy.ai saved them up to \$16 million in 2024 alone (Copy.ai, 2025).

By using Copy.ai, organizations can leverage the following decision support functions:

- **Content Creation Decision Support:** Using Copy.ai's AI-powered content creation capabilities, content marketing efforts can be streamlined, achieving meaningful engagement with the target audience. This encompasses everything from research and strategy development to creation, promotion, and distribution, ensuring alignment with organizational goals and delivering value with every appearance.
- **Customer Targeting Decision Support (Account-Based Marketing - ABM):** By analyzing vast amounts of data, Copy.ai enables the alignment of ABM campaigns with C-level initiatives to create high-impact messaging. It also helps in developing proactive and tailored campaigns.
- **Advertising Campaign Decision Support (Demand Generation and Campaign Execution):** Copy.ai relieves the marketing team of routine and repetitive workloads and facilitates the execution

of high-impact demand generation strategies. This is achieved by automating deep research within campaigns and creating summaries, and easily converting this research into high-performing campaign assets (Copy.ai, 2025).

- **Brand Voice Decision Support:** Copy.ai's Brand Voice feature allows for the integration of an organization's brand identity into AI-generated content, ensuring consistency across all marketing channels. Users can manually define brand voices and even create multiple, distinct voices for different authors or target audiences (Copy.ai, 2025).

3. Generative AI Tools used by Copy.ai to support its Marketing Decisions

Copy.ai adopts the philosophy of "Eat Your Own Dog Food" (or "Eat Your Own Food"), meaning it extensively uses its own internal tools alongside a suite of other AI tools to support its marketing decisions. While its core product is the Copy.ai Platform, these tools specifically comprise the following:

- **Primary Generative AI Model: OpenAI's GPT-4:** This model is considered the backbone of the Copy.ai platform, used to access the latest and most powerful text generation capabilities.
- **Other Auxiliary Tools:** The company utilizes a collection of advanced models and directs the task to the best model for execution, ensuring the highest possible quality of outputs. Among these are:
 - **Midjourney & DALL-E:** Used to generate initial visual assets or create visual ideas for use in marketing campaigns and social media.
 - **AI-Powered Data Analysis Engines:** Such as ChatGPT, to extract insights from marketing data faster, including analyzing campaign performance or identifying trends.

It is also worth noting that Copy.ai leverages the following internal functionalities:

- **Workflows:** The marketing team utilizes Workflows to collectively automate content creation. For example, they can input a general topic and generate dozens of blog titles, detailed outlines, content sections, and social media captions within minutes.
- **InfraChat:** This is an internal tool that allows the team to query their internal databases and documents. The marketing team uses it to get quick answers regarding performance data, brand strategy, or product-specific information.

Conclusion

This study has revealed the pivotal role played by Generative Artificial Intelligence (GenAI), moving beyond merely being a content creation tool to becoming an integrated and effective Marketing Decision Support System (MDSS), especially for startups facing resource challenges and the risks of an ambiguous market environment. The analysis, exemplified by the case of Copy.ai, confirms that adopting GenAI technologies not only enhances operational efficiency and marketing creativity but also directly contributes to driving the growth of these organizations. Nevertheless, the

The Role of Generative Artificial Intelligence in Enhancing Marketing Decision Support Systems in Startups: A Case Study of Copy.ai

success of these systems is contingent upon the strategic integration of the technology within human processes, emphasizing that human expertise, auditing, and editing remain crucial factors for ensuring the quality and credibility of the resulting marketing content and decisions.

Key Findings

The study highlighted a set of key findings, most notably:

- GenAI represents a transformation from merely a text generation utility to an integrated system for marketing decision-making support, providing startups with rapid and optimized insights and strategies.
- GenAI directly contributes to increasing the operational efficiency of startups and reducing reliance on traditional resources, which positively impacts the achievement of sustainable growth in competitive market environments.
- Success in employing GenAI technologies, as embodied by the Copy.ai experience, depends on the strategic and systematic integration of these tools within the daily workflows of the marketing department, rather than using them as isolated instruments.
- Human expertise and skills remain a crucial and necessary element for ensuring the quality and credibility of the content, and for maintaining its alignment with the organization's corporate identity and values.

Recommendations

In light of these findings, the study puts forth the following recommendations:

- Startups must gradually adopt GenAI tools in formulating marketing strategies and analyzing data, along with training teams on the optimal use of these technologies.
- Focus must be placed on deploying these tools in areas of time-saving, automatic campaign optimization, and content personalization for the target audience.
- Further studies should be conducted on the criteria for measuring the impact of GenAI on marketing returns, and the scope of research should be expanded to include sectors beyond the digital one.
- Future field studies are proposed, involving in-depth interviews with marketing teams, or a comparative study between several tools.

Bibliography List :

1. Dulcic , Z., Pavlic, D., & Silic, I. (2012). *Evaluating the intended use of Decision Support System (DSS) by applying Technology Acceptance Model (TAM) in business organizations in Croatia.* (S. a. Sciences, Éd.) Elsevier Ltd.
2. Fernando, J. (2022, May). Decision Support System: Overview, Different Types and Elements. *Technoarete Transactions on Intelligent Data Mining and Knowledge Discovery.* 2, pp. 13-18.
3. Figueroa-Perez , J., & al. (2019). The Use of Marketing Decision Support Systems for New Product Design. *International Journal of Computational Intelligence Systems*, 12(2), p. 762.
4. Foivos, P., & Kiritsis, D. (2022). A hybrid Decision Support System for automating decision making in the event of defects in the era of Zero Defect Manufacturing. *Journal of Industrial Information Integration*(26), pp. 1-14.
5. Matsatsinis , N., & Siskos, Y. (2003). *Intelligent Support Systems For Marketing Decisions.* New york: SPRINGER SCIENCE+BUSINESS MEDIA.
6. Matsatsinis, N., & Siskos, Y. (2003). *INTELLIGENT SUPPORT SYSTEMS FOR MARKETING DECISIONS.* New york: SPRINGER SCIENCE+BUSINESS MEDIA.
7. (SDAIA), S. D. (2025). *Generative Artificial Intelligence: Promising Horizons for a Better Future.* السعودية.
8. Company, & McKinsey . (2023, November 17). *How generative AI can boost consumer marketing.* Consulté le September 16, 2025, sur <https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/how-generative-ai-can-boost-consumer-marketing>.
9. Copy.ai. (2025). *How it works.* Consulté le September 19, 2025, sur <https://www.copy.ai/platform/how-it-works>.
10. Digital Government Authority. (2025). *Generative Artificial Intelligence in Digital Government Operations.* Saudi Arabia.
11. Kumar, T. (2020). Data Mining Based Marketing Decision Support System Using Hybrid Machine Learning Algorithm. *Journal of Artificial Intelligence and Capsule Networks*, 2(2), p. 1.
12. Office of the Minister of State for AI, D. E. (2023, 04). *100 Practical Applications and Use Cases of Generative Artificial Intelligence.* (م. و. بعد, Éd.) Consulté le 08 04, 2025, sur https://ai.gov.ae/wp-content/uploads/2023/04/406.-Generative-AI-Guide_ver1-AR.pdf.
13. Rezazadeh, A., & others. (2025). Generative AI for growth hacking : How startups use generative AI in their growth strategies , 192. *Journal of Business Research*(192), 01-06.
14. Rios-Campos, C., & others. (2024). Startups and Artificial Intelligence. *South Florida Journal of Development* , 5(2), 956.
15. Saad Ghalib, Y. (2009). *Fundamentals of Management Information Systems and Information Technology.* Amman (Jordan): Dar Al-Manahij for Publishing and Distribution.
16. Zazal, F., & Ja'lab, N. (2025). The Importance of Artificial Intelligence Applications in Developing Statistical Processing Skills: A Presentation of Selected AI Applications. *Journal of Society and Sport*, 08(01), 139-140.