OPTIMIZING AVIATION MRO CONTENT MARKETING: A CASE STUDY USING GPT4 AND AVIATIONGPT FOR CONTENT GENERATION

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Dedication

This thesis is dedicated to my beloved family, whose unwavering love, encouragement, and support have been the foundation of my journey.

To my mother, whose wisdom, sacrifices, and unconditional love have guided me every step of the way. To my son, Ario, whose joy, curiosity, and faith in me have been my greatest motivation. To my cherished sisters, Azadeh and Mahshid, my dear brother, Majid, and my wonderful nephews, Artin and Melorin. Your encouragement, kindness, and belief in my abilities have brought me immense strength and comfort.

Thank you all for being my foundation and the reason this achievement has been realized. I am deeply grateful for your love and support.

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ABSTRACT

OPTIMIZING AVIATION MRO CONTENT MARKETING: A CASE STUDY USING GPT4 AND AVIATIONGPT FOR CONTENT GENERATION

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This thesis is an attempt to investigate how “GPT4” and “AviationGPT” as generative artificial intelligence models are applied in the development of B2B marketing content for the maintenance, repair and overhaul in the aviation industry. As a result of the increasing use of digital content marketing and the revolutionary effects of artificial intelligence known as AI, this research fills a significant gap in understanding how AI-powered tools can enhance content development without undermining the role of creativity and contextual knowledge of humans. A mixed methods approach to analysis is applied in this study, and two case studies are central to the research. In the first case study, GPT4 is evaluated for its ability to come up with new and relevant content ideas for the MRO industry based on trends, industry relevance and the right type of content. The second case study compares three groups of content: AI-generated content, human-generated content, and AI-enhanced-human-generated content (using AviationGPT) in terms of readability, engagement, clarity, and strategic alignment. The results indicate that the AI-generated/enhanced content always outperformed the human-written content

in terms of accuracy, time management, and user interaction. The statistical analyses, including ANOVA and Tukey's HSD, showed that there are substantial differences in the performance of the approaches, which support the concept of a cooperative framework. This study proposed a human-AI integration model that leverages the quick, scalable, and accurate analytical capabilities of AI in conjunction with human talent and emotional intelligence to improve content development. This research can be useful for scholars, content developers, and markers in the aviation MRO industry. It provides a how-to guide for the effective integration of AI in marketing strategies while also ensuring that the resulting content is compliant with industry regulations. The compatibility of this study between the strengths of AI and humans increases the growth of B2B content marketing and its prospect for growth in other content-related businesses. It also addresses ethical issues such as equity, privacy, labor conditions and social impact to ensure that the AI for change is used conveniently in a sustainable and responsible way.

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OVERVIEW

1.1 Introduction

In the era of swift technology progress which is referred to as digital transformation, businesses, communities and individual experiences are undergoing significant changes. The quantity of data and content that is being created every day is enormous and results in information overload. Navigating this environment requires sophisticated tools, such as Artificial Intelligence (AI) and data science, to filter, analyze, and derive actionable insights (Jadhav, Gaikwad and Bapat, 2023).

Digital transformation has reshaped marketing strategies, necessitating new skills and approaches (Pascucci, Savelli and Gistri, 2023). By adopting innovation and leveraging data analysis while prioritizing customer needs and preferences in their approach to business strategy, organizations can drive long-term success and stay competitive in today's digital world (Cioppi *et al.*, 2023). The inclusion of Digital Content Marketing (DCM) as part of the inbound marketing strategy has brought in a new level of engagement to the traditional business models (Bezovski, 2015). It includes the development and implementation of the strategies that involve the creation, delivery and promotion of appropriate digital content across the platforms to the target audience (Rowley, 2008).

As the main part of DCM, content creation is the process of developing valuable, relevant, appealing and engaging content (Terho *et al.*, 2022). In modern DCM, the successful strategy is consumer-centric approach which seeks to engage and meet the needs, insights and preferences of customers in order to build relationships and trust (Holliman and Rowley, 2014). Therefore, moving from a sale to customer-oriented approach in content marketing is inevitable for the success of any business as it helps

companies to maintain their lead, innovation, and market presence (Tuominen *et al.*, 2023).

The availability of Generative Artificial Intelligence (GenAI) and Large Language Models (LLMs) has revolutionized the content creation environment across different sectors including marketing. These models are built on complicated algorithms to develop outputs such as text, images and other forms of multimedia within a specific context. As they are trained on a varied and massive dataset, they are capable of understanding the complexities of language and can create visually engaging content and realistic images (Ding *et al.*, 2023)

Furthermore, other new approaches as for instance Retrieval-Augmented Generation (RAG) and fine-tuning can be used to improve the flexibility of these AI models to create certain materials (Ovadia *et al.*, 2023). LLMs not only are useful for creating textual and visual content, but also they can be applied in the Text Analytics for Information Systems Research (TAISR) framework for data-driven business decision making as well. Thus, firms can derive important information from large amounts of unstructured text data to support strategic decision making (Ampel et al., 2023). Furthermore, these capabilities can assist in recognizing market trends, predicting consumer behavior, and personalized content strategies to meet the specific needs of customers.

Another important concept in business communications to protect intellectual property is the Watermarking concept and LLMs effectively have improved it by embedding watermarks with minimal impact on the text's meaning (Liu *et al.*, 2024). In addition to LLMs, image GenAI models play a pivotal role in marketing content creation in any context including Business-to-Customer (B2C), Business-to-Business (B2B), and Business-to-Government (B2G). At their core, these AI models are built on technologies

like Generative Adversarial Networks (GAN) and diffusion models that can produce high-resolution, realistic images and videos and have revolutionized digital advertising, web design, and other digital fields (Gainetdinov, 2023). These AI technologies also enable organizations to customize their marketing efforts, so that every single message reaches the consumer in a way that makes them think it was made specifically for them, which in turn enhances the user's satisfaction and loyalty towards the brand (Liu *et al.*, 2020).

This study was done on the aviation Maintenance, Repair & Overhaul (MRO) industry. Digitization in the MRO industry is a key factor in industry growth as it enhances the maintenance efficiency and reduces the operational costs (Aircraft Interiors EXPO, 2024). Predictive maintenance, Augmented Reality (AR), Virtual Reality (VR) and other AI tools have changed the way of working and improving operational productivity and quality (Vooren, 2019). In addition to the operational benefits, digital transformation enhances the transparency and collaboration of stakeholders such as maintenance providers, operators, and regulators. It is now crucial to use digital content marketing to showcase these improvements to attract and keep customers in a competitive market (Shay, 2023). Top aviation MRO firms are now using artificial intelligence and digital content marketing to showcase their innovative capabilities, engage their clients and maintain their competitive position. Through the use of content driven strategies they are able to position themselves as leaders in their industry, share industry insights and news, and demonstrate their knowledge of cutting-edge solutions such as AI powered diagnostics and digital transformation projects (Loxton and Krishnan, 2024; Bjerregaard, 2025).

By effectively leveraging these strategies, organizations not only drive engagement but also position themselves as pioneers in an industry undergoing rapid

transformation. This dual focus on technological integration and content-driven leadership ensures a sustainable competitive edge.

1.2 Research Problem

The introduction of GenAI and LLMs is going to change many industries and content marketing is not going to be immune. Because of the complexity of the industry and the regulatory requirements, online marketing content is important in the aviation MRO. The integration of AI is being approached with caution by business owners in the MRO domain, who want to make sure that decisions are based on solid research and real life examples. This is further spurred by the fact that in the case of aviation safety, inaccurate or poorly conveyed information can have high-stakes consequences. Therefore, integrating AI into content marketing cannot be limited to creativity and efficiency but also have to include accuracy and compliance with regulatory standards.

There are many Large Language Models that have been trained on specific datasets, and each was trained to excel in a particular domain. Within this landscape, AviationGPT is introduced as a cutting-edge LLM created specifically for the aviation industry. However, there is a research gap in the investigation of how this model can meet the special requirements of the industry like making technical data easy to comprehend yet professionally and to strict communication protocols.

Furthermore, both human and AI models are not perfect and have their strengths and their weaknesses. For example, while AI is very good at processing large datasets, giving fast insights, and being very consistent, it fails to grasp the emotional context and cultural sensitivities that are important for content creation, where human spirit shines through its ability to be creative and have compassion. But in the data analysis department, AI has the upper hand. It is therefore important for research to identify these strengths and weaknesses and to further examine how to combine the best of human

creativity, with the best of AI, in order to achieve the best results. Such frameworks could explore frameworks for human-AI collaboration where AI handles data intensive tasks, and humans add strategic and emotional depth to the content. Such frameworks could guarantee that the resulting content is not only efficient and accurate, but also engaging, empathetic and in line with the MRO sector's values.

Further research into the specific preferences of MRO professionals can help design more refined models that align with the needs and expectations of this specialized group. Additionally, research should focus on potential drawbacks of using AI in aviation writing, such as the potential for inaccurate or inappropriate output and the risk of perpetuating biases in the output. In conclusion, while AI holds promise for increasing efficiency and reducing costs in aviation writing, it must be carefully calibrated to ensure that the output is proportional to the task at hand and that human expertise is incorporated where complex or sensitive aspects are involved. It is therefore crucial that the aviation industry continues to invest in developing intelligent tools and frameworks that leverage the strengths of both AI and human talent.

1.3 Research Purpose and Objectives

In this study, we intend to cover the research gap mentioned in the previous section. The purpose of this paper is two-fold: To explore whether GPT4 and AviationGPT are effective in developing B2B content for the aircraft MRO industry, and to propose a proper framework for collaboration between humans and artificial intelligence for a specific context and kind of content. This dual focus is important because the aviation MRO sector needs content that is not only technically accurate but also engaging enough to appeal to various audiences, from engineers to executive decision-makers.

The objectives listed below are designed to meet these two goals:

Objective 1: First of all, we determined the content Key Performance Indicators (KPIs) that are relevant to marketing campaign goals, industry, and target audience. These indicators are critical in assessing the effectiveness of the content and marketing strategies and their optimization. The most crucial KPIs in B2B digital content marketing are Search Engine Optimization (SEO) performance, brand awareness and perception, engagement rate, conversion rate, lead generation, and Return On Investment (ROI). However, in this study, we concentrated on relevant KPIs that can be evaluated by expert assessments and theoretical modeling, such as content quality, innovation and creativity, user feedback potential, and content production efficiency. Additionally, we aimed to identify any unique KPIs that are specific to the aviation MRO sector, such as technical accuracy, compliance with regulatory standards, and stakeholder trust.

Objective 2: To achieve the first goal, we conducted two case studies. At the first one, GPT4 was evaluated in generating appropriate content ideas and through the second one we created two groups of content with copywriting expert and AviationGPT on the same topic. Then, we compared and evaluated their effectiveness by analyzing the determined KPIs. This evaluation process included qualitative feedback from industry experts to make sure the content was professional and aligned with industry nuances. In this way, we made sure that the assessment did not only rely on quantitative measures but also reflected the actual value and relevance of the content.

Objective 3: To align with the second goal, we analyzed and discovered the advantages and distinct abilities of humans and AviationGPT in content creation to design the best cooperation framework to achieve better results and create more effective content. In addition to that, this analysis also entailed establishing potential difficulties in human-AI collaboration, like problems in comprehending the complex industry specific terms and suggested ways to overcome these barriers.

Objective 4: Finally, we presented an appropriate framework for the optimal collaboration of humans and GenAI in MRO content creation based on the findings of the comparative analysis presented in the third objective. In this approach, we combined the GenAI's most notable capabilities, such as speed and accuracy in big data processing, with irreplaceable human talents, such as creativity and emotional intelligence, to improve the efficiency of the created content. This framework emphasizes creating a synergy where AI assists in repetitive and data-intensive tasks, while humans focus on strategic elements such as audience engagement, storytelling, and ethical considerations.

1.4 Significance of the Study

The rapid growth and substantial investment show that GenAI's power to redefine marketing is more potent than ever. As illustrated in Figure 1.1, total GenAI investments in the U.S. jumped from $7.1 billion during a year between September 2021 and August 2022 to an estimated high of $19.8 billion for the next annual cycle running through September to develop this technology for a broad range of use cases, including LLM platforms and search engines (Thormundsson, 2024). These findings are a paradigm shift in the way firms believe about technological innovation and the findings underscore GenAI's growing role as a key driver of competitive advantage. The increase in investment in GenAI models is forecast to rise further in line with the optimistic realization of implementing GenAI within marketing strategies. The increased investment in GenAI models is expected to rise further due to the positive outlook for incorporating GenAI into marketing efforts.

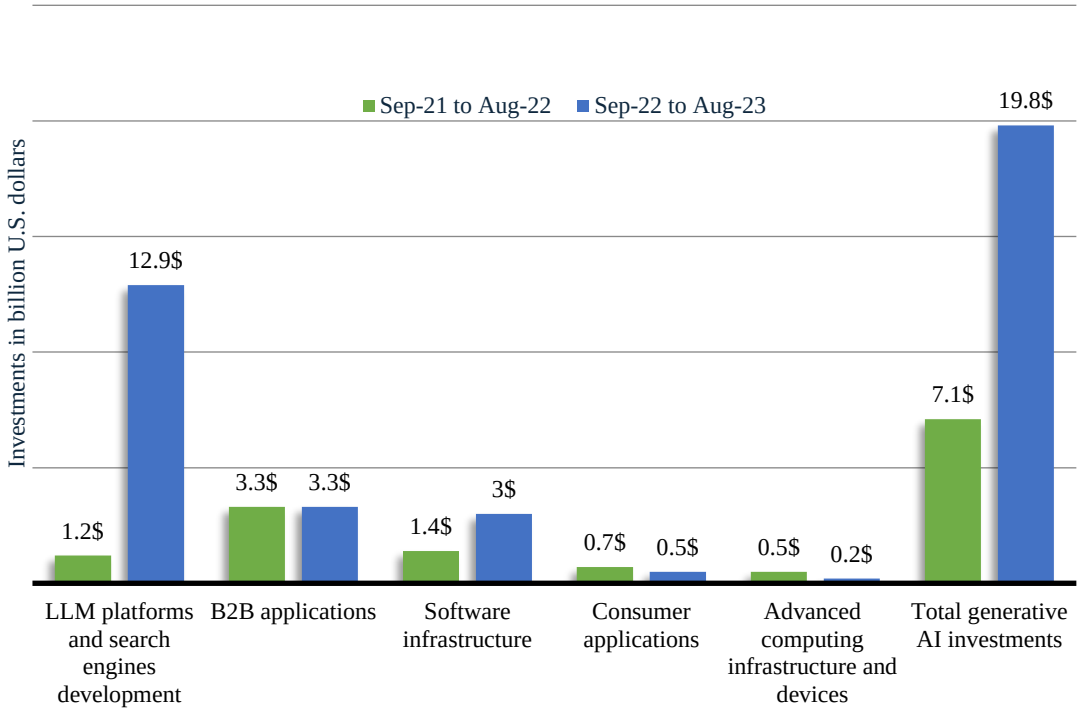

Figure 1.1
U.S. Investments in GenAI From 2021 to 2023 (Thormundsson, 2024)

A recent survey of adult customers found that more than half of respondents liked the idea of companies using AI in their marketing. The survey was conducted in the US with 1,000 adult participants without identifying the target industries (Majidi, 2024). It represents a significant change in the perception of the public, which begins to consider AI-related initiatives not only as futuristic technologies, but as real solutions that improve user engagement and brand experience. The results are expected to be generalizable across sectors; however, there may be slight differences based on industry specific factors and regulations. These findings show that the participation of researchers, developers, and entrepreneurs is crucial in enhancing the scenario. Thus, working together, they should be able to create sophisticated yet efficient AI models that enhance marketing strategies and are more in tune with consumer needs across various industries. This

collaboration should also focus on ethical concerns to make sure that the application of AI is beneficial for the society as a whole and to avoid drawbacks such as the spread of misinformation or bias in the generated content.

The Aviation MRO industry, characterized by its complex processes and by its global nature, represents a good case study to analyze how AI technologies can impact operational processes and customer interaction. The complexity and critical importance of the MRO processes provide a suitable context to determine how AI technologies can enhance the accuracy and effectiveness of operations while ensuring they comply with the necessary regulations (Korchagin *et al.*, 2023).

This study is significant for the stakeholders, such as scholars, content producers, and strategic B2B leaders in the aviation MRO sector.

For the Academic Community: This research fills the literature gap by performing an extensive empirical analysis of the efficiency of GenAIs, specifically GPT4 and AviationGPT, in MRO content generation. Rich insights into the advantages of using artificial intelligence in B2B content generation will be provided by analyzing GenAI-generated and human-generated content, thus extending the frontiers of knowledge and informing future research. Furthermore, this study seeks to bridge theoretical insights with practical applications, in order to help solve industry-specific communication challenges and thereby contribute to the broader discourse on how AI can reshape them.

For Content Creation Professionals: Describing GPT4 and AviationGPT models' strengths and limitations in MRO content generation equips content practitioners with insights into how this AI tool can enhance content quality, relevance, and effectiveness. The suggested approach to collaboration between humans and GenAI offers solutions for integrating GenAI into content creation processes. This makes it

possible for professionals to use GenAI for the work's efficiency and scalability but also to keep the human touch in creativity and emotional intelligence. Thus, content professionals can develop marketing messages that are understandable to technical audiences and at the same time easily comprehensible to other stakeholders, like investors and regulators. This research is a guide for content developers addressing shift issues in B2B content marketing in the aviation MRO sector.

For Executives Making Strategic Decisions in MRO Organizations: The strategic guidance derived from this study presents a clear roadmap for MRO organizations looking to leverage GenAI technologies in their content marketing strategies. This study equips MRO business leaders with the knowledge to make informed decisions regarding AI integration by providing insights on human-AI cooperation and setting performance indicators (KPIs) to assess AI-generated content. This is especially crucial as MRO executives face increasing pressure to adapt to digital transformation while maintaining cost efficiency and high safety standards. This is crucial for companies striving to stay competitive in the era, as utilizing AI effectively in content creation can significantly impact consumer engagement, lead generation, and overall business outcomes.

In summary, this research goes beyond its contributions by offering benefits to professionals and strategic decision-makers in the rapidly evolving realm of B2B content marketing in the MRO realm. By exploring how human creativity intersects with AI efficiency, this study sheds light on AI's capabilities and limitations, laying a foundation for future advancements and applications. The findings can be used as a reference for other industries with similar and complex environments and regulations and how AI can be used to address unique operational challenges. In this way, it seeks to assist the AviationGPT model for stakeholders in the MRO industry to understand the value of this

specific GenAI model in improving content planning to enhance innovation, interaction and achievement in the online marketplace. At the same time, the study indicates the potential to transform the future of growth by integrating GenAI with human supervision to ensure strategic decision-making. In conclusion, the study shows that when used with the right amount of human oversight, AI has the potential to bring about tremendous change in the MRO industry.

1.5 Research Questions

The research questions of this study to uncover GenAI and LLMs' capacity to transform content creation strategies and enhance business communication results are as follow.

Research Question 1 (RQ1): What are the differences between AI-generated/enhanced and human-generated content in B2B settings in the aviation MRO industry regarding performance measures like accuracy, relevance, engagement, and alignment with company objectives?

Research Question 2 (RQ2): What is the most effective human-AI collaboration framework in content creation utilizing the strengths of each to enhance content quality and strategic influence?

These research questions do not only seek to explore the efficiency and performance of the AI content but also attempt to understand the specific dynamics of the human-AI collaboration in a highly regulated and very specific industry like aviation MRO. This is because the study has a dual focus that makes its findings easily applicable to real business environments.

1.6 Research Hypotheses

Based on the research questions for the study that examines the use of GenAI in creating B2B content, we proposed the following hypotheses:

Hypothesis 1 (H1): In B2B settings, within the MRO sector, AI-generated/enhanced content performs superior to human-generated content in data analysis speed and precision, accuracy, relevance, engagement, and alignment with business objectives.

Hypothesis 2 (H2): When human creativity is blended with AI efficiency in a collaborative setting, it greatly improves the quality and strategic impact of content in comparison to content created exclusively by humans or AI systems.

These hypotheses provided a structured basis for examining the transformative potential of GenAI in content creation while addressing the strengths and limitations of human and AI-generated content. Furthermore, H1 made it possible to investigate how AI models can be tailored to address industry-specific issues like the need to comply with aviation safety standards and to convey highly technical but engaging message. H2 emphasized the value of leveraging human emotional intelligence and strategic thinking alongside AI's speed and scalability, proposing that a hybrid approach can drive superior outcomes in both creativity and business alignment. These hypotheses establish a foundation for exploring how GenAI and LLMs operate in B2B content creation within the aviation MRO industry. This study was designed to contribute evidence-based best practice insights that can help inform how to best integrate GenAI into content marketing strategies by comparing standalone AI performance to collaborative frameworks. The findings of this study connected the gap between the technological innovation and the human expertise, thereby creating a harmonious approach to leverage the best of both worlds.

1.7 Definition of Key Terms

Several key terms are commonly used in AI and marketing concepts. This section provides short definitions for each key term.

AviationGPT: AviationGPT is a kind of large language model (LLM) which is designed specifically for the aviation industry. It was built on the open source architectures of LLaMA-2 and Mistral and have been continually trained on large amounts of data specific to the aviation domain (Wang *et al.*, 2023).

Artificial Intelligence (AI): In 1955, John McCarthy coined the phrase "Artificial Intelligence," stating that it involves creating smart machines through science and engineering. AI includes and is based on several techniques and approaches such as rule based systems, neural networks and machine learning which are used to develop the ability of machines to think and act like human beings (Manning, 2020).

Customer-Centric Approach: It involves a business strategy that focuses on putting customers' needs and experiences at the forefront of all decision-making within an organization, going beyond customer service to understand customers' journeys thoroughly and engaging them in developing customized services and products to address their needs and obstacles (Tuominen *et al.*, 2023). This approach often uses customer feedback, behavioral analytics and predictive modelling to deliver highly personal experiences, for example, to build long term customer loyalty and satisfaction.

Deep Learning (DL): From the field of machine learning, Deep Learning is a subfield that uses multiple layer neural networks similar to the hierarchical structure of neurons in the human brain. The effectiveness of DL has been most apparent in various application areas, including image recognition, natural language processing, and autonomous systems. The accuracy and scalability of the results achieved are largely unmatched (Abiodun *et al.*, 2018).

Digital Content Marketing (DCM): Creating and sharing content through digital platforms is a key strategy known as digital content marketing. The goal is to captivate and maintain an audience by generating valuable and relevant information in an engaging

manner. DCM strategies often include leveraging analytics to optimize content performance, utilizing SEO for visibility, and adopting multimedia formats to enhance audience engagement (Farkas and Geier, 2024).

Generative Artificial Intelligence (GenAI): GenAI is a kind of artificial intelligence technology, a sub-field of deep learning that can produce a variety of data, including text, audio, video, image, code, etc., that closely resemble the data on which it was trained (Feuerriegel *et al.*, 2024). It has gained popularity owing to its ability to automate creative processes, such as generating marketing content, designing visuals, and even writing code, making it an invaluable tool in modern business applications.

Inbound Marketing: It is an approach that covers content marketing and various techniques to draw in and connect with customers effectively. This includes providing a customer experience through providing valuable content, making sure the content is search engine friendly, using social media sites, and managing leads through specific communication depending on the lead ((Lopes and Casais, 2022). This strategy is different from the classic outbound marketing as it is based on the principle of customers' attraction rather than using aggressive means such as telemarketing or broadcast advertising.

Large Language Model (LLM): LLMs are a separate category of GenAI, primarily focused on comprehending, interpreting, and generating human language. They are trained on a huge corpus of texts to achieve a wide range of language tasks, such as summarizing, translating and question answering (Ding *et al.*, 2023). They have uses beyond basic text production, covering sentiment analysis, conversational agents, and automated content moderation and delivering vital value in all industries.

Machine Learning (ML): As a subset of AI, it is the domain of research enabling computers to learn without being explicitly programmed. ML algorithms rely on

data to identify patterns, make predictions, and improve performance over time, with applications ranging from recommendation systems to fraud detection (Brown, 2021).

Natural Language Processing (NLP): NLP is a branch of AI dedicated to empowering computers to comprehend and interact with human language effectively by creating algorithms and models that can decipher and produce text or speech intelligently (Kang *et al.*, 2020). It comprehends, processes, and generates natural language using ML techniques and linguistic knowledge (Chowdhary and Chowdhary, 2020).

Sales Funnel: The sales funnel illustrates the path of customers from their discovery of the brand to the point of purchase, depicting all the stages that a potential buyer ticks through on the way to making a buying decision. The visual depiction of the funnel illustrates the number of leads entering at the top and progressively reducing to those who eventually make a buying decision (Venermo, Rantala and Holopainen, 2020). Modern sales funnels integrate digital tools such as CRM systems, automated email campaigns, and analytics dashboards to track and optimize customer journeys at every stage (Suutari, 2023).

The most important and frequently used abbreviations used in this thesis are displayed in Table 1.1.

Table 1.1

Abbreviation of Essential Expressions

Abbreviation	**Full Expression**
AI	Artificial Intelligence
B2B	Business-to-Business
B2C	Business-to-Customer
B2G	Business-to-Government
DCM	Digital Content Management
DL	Deep Learning
GenAI	Generative Artificial Intelligence
KPI	Key Performance Indicator
LLM	Large Language Model
MRO	Maintenance, Repair, and Overhaul
ML	Machine Learning
NLP	Natural Language Processing

ROI	Return On Investment
SEO	Search Engine Optimization

CHAPTER II:

REVIEW OF LITERATURE

2.1 Introduction

Content marketing, a transformative aspect of modern digital marketing, is a critical technique for businesses to establish a profound connection with their audience. Unlike traditional advertising strategies, which are sales-oriented approaches, content marketing focuses on creating and disseminating informative, interesting, and relevant content to attract, engage, and retain the target audience (Czapla *et al.*, 2023). Each marketing content has a story about a particular product or service. Therefore, storytelling via interesting content enables meaningful communication and developmental engagement, stimulates the consumer's identification with the brand, and consequently improves the efficiency of digital marketing strategies (Júnior *et al.*, 2023; Kemp *et al.*, 2023).

The creative capabilities of new categories of AI tools, known as GenAI and LLMs, are the subject of many discussions in the field of content production. These AI models can produce imagery, prose, and poetry in defined formats, creating music and impressive sounds in various contexts (Epstein *et al.*, 2023). For instance, in January 2024, "The Tokyo Tower of Sympathy," a novel written entirely on ChatGPT, received the prestigious Akutagawa Prize (Choi and Annio, 2024), which demonstrates the inspiring potential of AI models in content creation (Yao *et al.*, 2024).

Advancements in GenAI technology enable the customization of visuals and audio to complement written content, resulting in an immersive storytelling experience. By integrating AI-generated text, visuals, and audio, content creators can engage audiences effectively and convey ideas naturally and compellingly (Aldahoul et al., 2023). While integrating GenAI and LLMs brings advantages across various industries,

including digital marketing, there are also ethical considerations to be mindful of. These include concerns about data privacy, potential biases, and the nature of the training data used for the AI Model (Safdar, Banja and Meltzer, 2020). In fields requiring sensitivity and professionalism, relying heavily on AI models for decision-making can diminish the abilities of individuals and teams. Depending excessively on AI models to provide answers without understanding or critically evaluating their reasoning may negatively affect thinking and problem-solving skills, potentially impacting the quality and innovation in the workplace. Addressing these concerns requires a commitment to ethical norms and transparency in AI adoption (Liyanage and Ranaweera, 2023).

This chapter offers a broad overview of AI-based content marketing in the aviation MRO industry. It starts with a concise introduction to the aviation MRO sector, the role of transformative AI technologies and the increasing role of content marketing in this very regulated and safety-critical environment. Then, the chapter goes into the theoretical foundations of DCM and GenAI and why they are relevant and how they can be applied. This also examines the interdisciplinary nature of content marketing to demonstrate the interplay between art and science in the creation of strategic and innovative marketing plans. Finally, the chapter concludes with a synthesis of the most recent academic publications, which includes discussions of major findings, trends, case studies, and technological developments in the area.

In order to produce this review, a systematic search was carried out from academic databases including, Google Scholar, EBSCO, Emerald Insight and Science Direct and also from institutional resources like SSBM eLibrary. Some of the keywords used included “content creation”, “business to business content marketing”, “AI applications in content marketing,” “aviation marketing” and “large language models” in

a bid to obtain relevant literature. This approach helped to include important theories, new technologies, and practical knowledge.

2.2 Maintenance, Repair, Overhaul (MRO) Industry

The MRO industry is a highly regulated industry since it is responsible for keeping equipment working smoothly and efficiently across different industries. MRO encompasses a variety of activities, including predictive and corrective maintenance, to reduce downtime, increase safety, and optimize asset performance. Preventive maintenance includes inspections and servicing to avoid failures, whereas predictive maintenance employs data analysis and IoT sensors to anticipate and address issues before they arise. Corrective maintenance is also necessary for repairing equipment faults (Green, 2023; Agarwal, 2024).

The use of AI in MRO procedures offers advantages, such as improved equipment reliability, cost savings, and compliance with safety standards. AI technologies, alongside Computerized Maintenance Management Systems (CMMS) (Cohen, Baretich and Gentles, 2020) and Industrial Internet of Things (IIoT) (Munirathinam, 2020), are transforming the MRO industry by providing data insights and supporting maintenance planning. These advancements empower businesses to stay competitive by guaranteeing their equipment functions dependably (Sensemore, 2024). AI-driven predictive maintenance can anticipate issues by analyzing past and real-time data, enabling interventions to prevent unexpected breakdowns and optimize resource management. Additionally, standardized documentation and continuous improvement practices ensure that maintenance tasks are completed consistently and efficiently, promoting excellence (Sensemore, 2024).

2.2.1 Generative AI Applications in Aviation MRO

The innovative use of GenAI can potentially transform the aviation MRO sector by boosting efficiency and addressing workforce challenges. This advanced technology can streamline maintenance procedures, enabling technicians to engage with AI-driven assistants for troubleshooting and repair guidance, thereby reducing time spent on research and manual documentation. Using language models, AI can sift through volumes of data from maintenance records and manuals to swiftly offer technicians precise information, ultimately enhancing overall productivity downtime (Langer *et al.*, 2024).

In addition to streamlining operations, generative AI predicts maintenance needs by analyzing sensor information. This helps optimize maintenance schedules and reduce unplanned repairs (Canaday, 2023). AI technological advancements also offer the potential to enhance supply chain management by foreseeing and addressing issues, ultimately boosting dependability and effectiveness. However, as AI advances, the aviation industry must strike a balance between pushing boundaries with ideas and being careful of accuracy and regulatory compliance to fully capitalize on liabilities (Langer *et al.*, 2024).

The broader impact of generative AI in aviation extends beyond MRO, influencing various aspects of the industry. Hanneke Weitering (2023) explored the influence of generative AI on the aviation sector, highlighting its role in streamlining operations, increasing efficiency, and reducing pilot workload. Over time, AI has progressed beyond autopilot functionality to autonomous flight control systems. Furthermore, AI solutions are ready to transform the business by producing digital twins (Xiong and Wang, 2022) and optimizing predictive maintenance operations, resulting in cost savings and shorter development cycles (Weitering, 2023).

A prime example of the use of generative AI in the aviation industry is AviationGPT. This model is constructed on open-source architectures like LLaMA-2 and Mistral, utilizing a two-stage domain-specific training framework that includes pre-training on extensive aviation-related datasets and subsequent instruction fine-tuning to enhance its efficacy in specialized tasks (Wang *et al.*, 2023). According to Dettmers et al. (2024), AviationGPT improves domain adaptation while minimizing computing cost by using parameter-efficient fine-tuning (PEFT) approaches like QLoRA (Dettmers *et al.*, 2024). Furthermore, the use of RAG techniques helps the model to process aviation information in real-time, which helps reduce the chances of AI hallucination and increases the accuracy of the response (Lewis *et al.*, 2020). The model was evaluated experimentally to prove its effectiveness, which showed that the model performed more than 40% better than the rule-based approach in important tasks like extracting Digital Automatic Terminal Information Service (DATIS) information and analyzing National Traffic Management Log (NTML) data (Wang *et al.*, 2023). In addition, the model has been designed to enhance its interpretability and response quality through the use of advanced prompt engineering methods such as chain-of-thought prompting and structured role-based instructions (Wei *et al.*, 2022). The integration of AviationGPT into the aviation environment improves performance by providing automated document analysis, interactive data exploration, and real-time report querying.

These AI-driven innovations are projected to improve aviation operations' performance, efficiency, and safety. Creating a balance between embracing innovation and exercising caution is critical to developing leadership in the field of AI, given its impact on all aspects of the aviation business (Waddell and Peterson, 2023).

2.2.2 Content Marketing in the Aviation MRO Industry

The aviation MRO sector is experiencing challenges in transitioning to a next-generation business model that integrates digital technology and AI solutions to increase efficiency, security, transparency, customer engagement, and return on investment (Cheung, Li and Lei, 2023). In 2021, Aviation Marketing Consulting (AMC) highlighted the need for aviation MRO firms to be active on social media by producing media releases and publications. This technique helps to build trust and confidence while establishing competence in the business. They also discussed the benefits of creating content, which can improve consumer interaction, lower bounce rates, and ultimately lead to conversion rates and sustained value compared to paid search marketing (AMC, 2021).

Figure 2.1 shows how maturity and digital advancement occur within the MRO sector, demonstrating the route from initial reluctance to becoming a digital market leader. The visual representation implies that achieving a level of process maturity is required before incorporating digital technologies such as AI repairs, big data analytics, and blockchain (Langefeld, 2021). This initial progress lays the groundwork for content marketing campaigns highlighting these innovations to an audience.

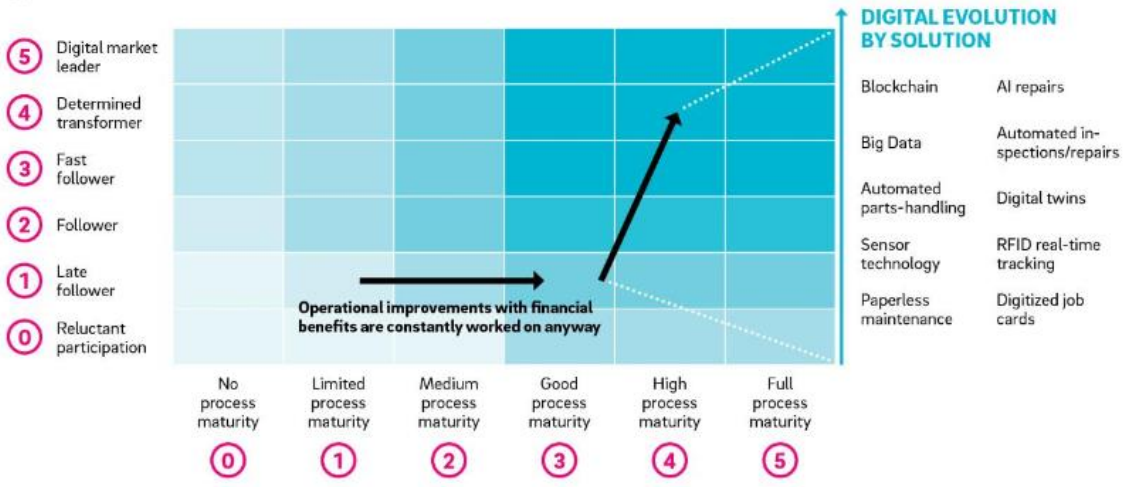

Figure 2.1
Advancing Process and Digital Maturity in the MRO Industry (Langefeld, 2021)

Creating content for the aviation MRO industry must emphasize organizations' expertise and innovative problem-solving skills. For example, ABCI's Aviation Marketing approach emphasizes clarity and precision. This involves explaining maintenance operations and sharing consumer feedback and testimonials. This approach builds trust and differentiates MRO services in a competitive market (ABCI, 2021). The Marketing team at Off the Ground (2023) released an article that looks at starting and promoting an aviation MRO business. The article emphasizes the importance of content marketing in establishing a brand identity and crafting an online image. Key strategies for content marketing involve in-depth market analysis, tailored marketing tactics, and crafting captivating content that connects with the intended audience (Off the Gound Marketing, 2023).

Furthermore, content marketing helps to highlight the benefits of digital transformation in MRO operations. According to STS Aviation Group, addressing challenges and industry trends through strategic data-driven content can help MRO businesses position themselves as market leaders. Sharing expertise on advancements such as AI inspections and predictive maintenance allows firms to demonstrate their commitment to simplifying procedures and supporting innovation. This technique not only attracts new consumers but also helps to maintain existing ones (Shaw, 2024).

To sum it up, content marketing plays an important role in the aviation maintenance, repair, and overhaul sector. It contributes establishing and reinforcing brand identity by demonstrating expertise and presenting solutions, thereby building trust and credibility within the industry. Also, MRO companies can boost customer engagement and loyalty by creating engaging and informative content and nurturing lasting business relationships. Furthermore, educational content helps simplify technologies and encourages their adoption, empowering customers to make informed choices. By

displaying progress, MRO firms position themselves as industry frontrunners, drawing in technology clientele. Additionally, content marketing aids operational efficiency by offering information that anticipates customer queries and supports sales efforts with effective lead-generation strategies (Canaday, 2023; AVIATION BUSINESS NEWS, 2024).

2.3 Theoretical Framework

The marketing concept has been developed from theoretical models which have changed the way of looking at consumer behavior, market segmentation and value creation. Thus, the implementation of creative technologies, particularly AI technologies has also altered marketing activities by enhancing personalization, automation and data-driven decision-making. The growth of marketing theories started from the transactional marketing to relational marketing, then digital content marketing, and is currently in the final stage of using tactics backed by artificial intelligence.

2.3.1 Foundations of Marketing Mix Models

The classical economic models had acted as the early foundations of marketing theory in the period 1900s–1950s. Marketing was viewed as a means of facilitating the exchange between buyers and sellers, and business activities were mainly firm focused, on production related efficiency and the mass communication channels of newspapers, radio and television (Akchurina, 2024).

From the past to present, the marketing mix models have offered a systematic way of thinking about marketing strategy, for instance the AIDA Model, is one of the oldest classical promotional theories which originally developed in 1898 by St Elmo Lewis for advertising. However, it still remains applicable and considered as the fundamental approach in digital marketing. It concentrates on capturing “Attention/Awareness,” building “Interest,” generating “Desire/Decision,” and prompting “Action”

(Cahyaningsih and Yulianti, 2024). Another important marketing mix is the 4Ps model introduced by McCarthy (1960). It is around Product, Price, Place, and Promotion, (Jain, 2013) and its expanded version, also contain People, Process, and Physical Evidence to address contemporary marketing challenges (Nur, 2023).

The 1980s–1990s were the period in which consumer expectations began to change and the focus of marketing theories shifted from transactional marketing to Relationship Marketing (RM). It was based on the concept of customer retention instead of just making one-time sales and building long term engagement and brand loyalty. Consequently, newer frameworks have been developed to fit this transformation and new consumer behaviors.

2.3.2 Relationship Marketing and Customer-Centric Principles

The growth of the Internet in the late 1990s and early 2000s brought about digital marketing frameworks like Electronic Customer Relationship Management (E-CRM) and Content Marketing frameworks. The first content marketing framework was introduced by Joe Pulizzi emphasizing on audience segmentation, valuable content creation, and strategic distribution across multiple channels to enhance brand engagement (Pulizzi, 2013).

Morgan and Hunt's (1994) Commitment-Trust theory of relationship marketing is among the most basic conceptual frameworks in marketing and states that relationship marketing effectiveness depends on two key elements: trust and commitment. The framework suggests that trust and commitment lead to cooperative behavior, reduce uncertainty, and produce long-term relationships between firms and their customers, suppliers, and strategic partners. These factors contribute to increased customer loyalty, decreased transaction costs, and improved competitive position (Hunt, Arnett and Madhavaram, 2006). Another prominent relationship marketing framework is the Service

Dominant (SD) logic, introduced by Vargo & Lusch (2004). The main principles were clear and uncomplicated. Marketing activities were considered as a service-for-service exchange rather than a goods-for-goods or goods-for-money transaction. The source of value is the specialized knowledge and abilities that people use to provide services to themselves and others, rather than the goods used in the process. It also emphasized the role of customer relationships, trust, and value co-creation (Vargo and Lusch, 2017).

The basis of DCM is content creation, which entails creating and sharing content that is relevant, valuable, and aligned with the preferences and needs of the target audience. Content can take several forms, including blog articles, videos, infographics, social media posts, and podcasts (Huotari *et al.*, 2015). Alongside relationship marketing and the customer-centric approach, three important principles drive the design of effective digital content, ensuring its success. Inbound Logic, Personalization, and Journey Facilitation (Fader, 2020). The first principle, the inbound logic approach in digital content creation, emphasizes the use of pull communications, in which corporations draw attention to their firm media space by providing useful and helpful information while avoiding unnecessary and destructive advertising. This concept is based on grabbing the audience's attention by giving valuable and informative content relevant to their interests and needs (Davidavičius and Limba, 2022). Businesses can attract and engage potential customers by focusing on providing inherently beneficial content to the audience, thus fostering a more positive and receptive environment for their marketing messages (Chandra *et al.*, 2022).

Personalization, the second principle in digital content creation, involves personalizing content to individual client interests and needs, strategically deploying personalized emails and content that directly addresses a customer's unique concerns, and building a stronger connection. Organizations may offer more engaging and relevant

content by tailoring to these variations (Kumar Dawn, 2014; Cavdar Aksoy *et al.*, 2021). However, with the rise of social media and its ability to foster real-time interactions, businesses began engaging with audiences more directly and personally. Organizations realized the importance of customer expectations in their marketing strategies and understood the role of customer experiences in defining brand perception. So, they start storytelling enabling the brands to tell their stories in a way that positions customers at the core of their narratives. By allowing customers to share their experiences, businesses are able to develop a more genuine, community-oriented brand presence that strikes a chord on an emotional level. Based on this customer-oriented approach the StoryBrand Framework was introduced with the customer as the hero and the brand as the guide, to create emotionally compelling narratives that enhance engagement (Mills and John, 2020).

Journey Facilitation is the third component in a customer-centric digital content creation method. It emphasizes creating efficient pathways to assist clients in their purchasing decisions. This principle highlights the significance of developing a logical and connected sequence of content pieces that respond to questions from customers at various phases of the decision-making process, offering a persuasive argument that facilitates their purchasing process. Businesses can effectively engage with customers at different phases of their purchasing process by using a journey facilitation approach. This will give customers the information and assistance they need to make data-driven decisions, ultimately improving customer experiences and results (Terho *et al.*, 2022).

Building on customer-centric principles in digital content creation, there are some prominent marketing mixes. The 4Cs framework (Consumer, Cost, Convenience, and Communication) is used instead of the 4Ps in consumer-centric marketing to make sure that the strategies are consistent with the customer's needs and wants (Wibisono and

Pasulu, 2022; Akchurina, 2024). It highlights factors important in today's digital market and adapts the marketing mix to prioritize meeting the consumer's needs and preferences, ensuring that products are affordable, easily available, and presented in a way that connects with the target audience. Integrating the 4Cs into marketing strategies can boost the effectiveness and impact of activities, aligning them more closely with changing consumer demands and behaviors (Zulfikar, Riyajana and Saepudin, 2023).

The STP+C framework (Segmentation, Targeting, Positioning, Customization) is also, critical for effectively engaging diverse customer segments. Traditional STP strategies support firms in identifying, focusing on, and catering to market groups (Jun 2011); however, adding customization results in more individualized experiences. Businesses can improve their marketing strategies by recognizing customers' unique tastes and demands which allows them to provide customized recommendations and information along the customer journey. This approach precisely fits with customer expectations, enhancing engagement and conversion while cultivating loyalty for long-term success (Nilplengsang and Pankham, 2023).

In addition to the STP+C and 4Cs frameworks, the SAVE marketing mix model presents an approach suitable for the modern digital era (Wani, 2013). With a focus on Solutions, Access, Value, and Education, SAVE moves away from product-centered perspectives to meet customer requirements directly. This model highlights the significance of creating content that informs, captivates, and offers practical solutions and convenient accessibility, enriching customer engagement and satisfaction (Firmansyah, Wahdiniwaty and Budiarti, 2023).

Furthermore, the 5As framework (Awareness, Appeal, Ask, Act, and Advocate) defines the customer journey in the digital age, and focuses on the engagement and advocacy (Polat, 2022). Also, the 4S model (Scope, Site, Synergy, and System) designed

for digital marketing, to achieve online presence and integration (Constantinides, 2002). Later, the PESO Model designed by Gini Dietrich, (Dietrich, 2014) integrates Paid, Earned, Shared, and Owned media and provides a comprehensive approach to multi-channel content amplification (ElSherbini, 2023).

These models are only a few of the numerous frameworks created to solve particular marketing issues and evolving consumer behaviors. From the current trends, the next wave of innovation in marketing is being driven by AI-powered frameworks that are appearing in the market.

2.3.3 AI-Driven Marketing Frameworks

As we moved into the 2020s and beyond, GenAI models is accelerating the development of content, personalization and customer interactions at unprecedented scale in marketing functions. This transformative shift requires the development of new theoretical perspectives that integrate machine learning algorithms, AI-driven automation and predictive analytics with traditional marketing theories.

In order to fully understand AI integration in marketing, we can look at various stages of its adoption process. Organizations first go through an acceptance phase where they consider how effective AI-driven tools and technologies might be. Davis (1989) presented the Technology Acceptance Model (TAM) and Venkatesh et al. (2003) suggested the Unified Theory of Acceptance and Use of Technology (UTAUT) that can help in understanding the adoption of new technologies (Davis, 1989; Venkatesh *et al.*, 2003). Additionally, the Diffusion of Innovations (DOI) model by Rogers (1962) and its newest editions in 2003 is also useful in explaining the adoption of innovative technologies such as AI based marketing strategies across various sectors (Rogers, 2003).

After that, they must understand how they can build up their technology capabilities as a strategic resource to create a competitive advantage. This realization

allows them to remain agile, data-driven, and customer-centric. The Resource-Based View (RBV) explains how firms can gain a sustainable competitive advantage by building up unique and difficult-to-imitate resources, including firm-specific AI algorithms, customer data, and automation. On the other hand, the Dynamic Capabilities Framework captures the idea that organizations must continuously adapt, integrate, and reconfigure their technological assets in response to rapidly changing market conditions (Teece, 2007, 2023; Madhani, 2010).

Finally, there is a need to understand the customer decision-making process with respect to the AI-enabled marketing strategies. Thus, knowing the impact of AI on consumer perception, trust and buying behavior will help organizations perfect their strategies for customer engagement, personalization, and long-term brand loyalty. In this regard, the Elaboration Likelihood Model (ELM) which introduced by Petty and Cacioppo, in 1986 explains how people make decisions based on either a central route or a peripheral route (Petty, 1986). In the central route, decisions are based on facts, and logic. On the other hand, there is the peripheral route, where some people make quick decisions based on surface level information. They could be influenced by aspects such as eye-catching packaging, celebrity endorsements, or even an emotional appeal, without so much thinking about the product (Segev and Fernandes, 2023). The ELM model can be used by marketers to identify how to influence consumers according to the level of deliberation they make when deciding (Shahab, Ghazali and Mohtar, 2021).

As AI is becoming more integrated into marketing activities, businesses will have to deal with ethical issues such as algorithmic bias, data protection, and consumer trust in order to implement AI responsibly. So, future work is likely to focus on ethical AI marketing frameworks to ensure transparency, bias mitigation and regulatory compliance of AI-enabled marketing decisions.

2.3.4 Preferred Theoretical Frameworks for the Study

In order to analyze systematically AviationGPT's role in creating and improving technical content for the aviation MRO industry, this study combines some theoretical frameworks in four layers. These frameworks were chosen for their ability to address the specific issues of AI content creation in a compliance intensive, knowledge intensive industry like aviation MRO. They provide a cohesive lens through which to analyze how AI tools relate to human expertise, industry standards, and audience expectations.

Technology Adoption Layer: The Technology Acceptance Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh *et al.*, 2003) provide important frameworks to understand effectiveness of the AI integration into organizational activities. In the aviation MRO sector, where precision, standardization, and safety are critical factors, these models help assess whether AI adoption is viewed as an added-value, or a potential risk.

Regarding to the evaluating the effectiveness of GenAI in content creation perceived usefulness, perceived ease of use and perceived ethical acceptability are the most critical factors which are about user opinions and attitudes, and influence whether they accept or reject a technology.

Since the industry's adoption of AI is dependent on its ability to deliver structured and high quality content, the perceived usefulness analyzes if the content produced by GenAI meets industrial requirements for the use of domain-specific language, technical correctness and regulatory compliance. Moreover, the perceived ease of use addresses to what extent the GenAI models can be easily incorporated into the current content creation processes, especially for identifying potential applications for automating the documentation process or supporting experts in writing and reviewing technical information. And, finally perceived ethical acceptability evaluates how users rate the

ethical implications of a technology in terms of issues like transparency, accountability, and compliance not merely its technical function.

Text Quality Layer: Natural Language Generation (NLG) and text quality evaluation frameworks are very essential in determining the reliability and efficiency of the AI written content especially in areas that require a high level of accuracy. Based on computational linguistics, NLG frameworks (Gatt and Krahmer, 2018) assess the machine-produced text in terms of linguistic features such as readability, coherence, and accuracy specific to the domain. These criteria are in line with a mixed-method evaluation strategy that entails both automated analysis and expert judgment to determine whether the technical documentation produced by AI is fit for use in the aviation industry. Automated metrics, such as Grammarly, capture linguistic precision by scoring grammar, sentence construction, and stylistic uniformity. On the other hand, expert assessments are based on qualitative features, which include: the ability to convey technical information clearly to engineers, technicians and safety inspectors, and conformity to important aviation organizations regulatory guidelines, such as European union Aviation Safety Agency (EASA) and Federal Aviation Administration (FAA). Through the use of NLG frameworks, organizations can guarantee that GenAI models output improves on the human-written draft, so that the end product is not only concise and clear, but also accurate, compliant and reliable.

Collaboration Layer: The Creativity Support Tools (CST) Framework (Shneiderman, 2002) changes the lens from "AI vs. humans" to "AI with humans," focusing on the potential of collaboration between AI and humans in enhancing creativity instead of substituting it. This is particularly important in the aviation MRO where human expertise is still vital due to the company's focus on accuracy, rules and safety. Thus, applying four main steps of CST framework, Collect, Relate, Create and Donate,

AviationGPT acts as a creative partner to refine human drafts through augmentation, offering better phrasing, enhancing readability, eliminating redundant words and structure, especially for complex things like step-by-step repair instructions. Furthermore, the framework offers ethical guardrails to address issues such as over reliance on AI, bias or errors that may be injurious to safety critical information. Thus, the CST framework for balancing automation with human oversight ensures that AI tools like AviationGPT are powerful co-pilots, not autonomous content creators, to improve efficiency and quality of the output while upholding the credibility of aviation MRO documentation.

Customer-Centric Layer: The Service-Dominant Logic is a theoretical paradigm that changes the marketing and service delivery mindset from a goods-dominated approach to one based on the concept of value co-creation, where the real value is created by how customers consume the service or content and not by the products themselves (Vargo and Lusch, 2004). In the context of aviation MRO, this framework offers a vital shift in focus to determine whether the use of AI-generated content like helps the end-users, for example, technicians, engineers, and operators to work more effectively and safely. The concept of Value-in-Use is central, which determines whether the AI-based maintenance guides, troubleshooting steps, or repair procedures are easy to implement and apt to the situation. Also, Customer-Centricity means that the AI-generated content is relevant to the needs and preferences of the consumer, but also that the technical detail is presented in a way that is understandable to different levels of user. Furthermore, Co-creation is also involved as AI is not presented as a competitor that replaces human talent but as a partner that helps content creators and thereby everyone else, by incorporating real-time feedback from the target audience. Thus, applying SD Logic, organizations can enhance the practical application of AI-generated content in MRO processes, so that AI-

supported documentation effectively enables and enhances operational efficiency, safety and learning.

2.3.5 Integrated AI-Enhanced Content Creation (IAECC) Framework

The IAECC framework is a structured, four-layer model designed to evaluate and optimize the use of GenAI models in creating and enhancing technical content for specialized industries like aviation MRO. It integrates technology adoption (TAM/UTAUT), text quality (NLG/Text Evaluation), human-AI collaboration (CST), and customer-centricity (SD Logic) frameworks to ensure AI-generated content is adoptable, accurate, collaborative, and impactful.

The TAM and UTAUT frameworks examine the adoption of AviationGPT in aviation MRO for content creation. A survey and interview of copywriters, engineers, and safety inspectors assess its usefulness, ease of use, and ethical concerns.

NLG and text evaluation frameworks assess AviationGPT's ability to produce high-quality aviation MRO documentation. Automated tools like Grammarly, evaluates the content samples including human-generated and AI-involved ones for grammar, clarity, and structure. Additionally, six industry experts review technical accuracy and compliance with aviation MRO regulation standards.

From CST collaboration frameworks, AviationGPT is evaluated for its impact on improving human-generated aviation MRO content, while keeping within the technical accuracy. Ethical concerns audits by experts by finding errors or biases, and guaranteeing clarity in safety critical documentation.

Finally, the SD Logic framework evaluates the potential of AviationGPT to contribute to the improvement of aviation MRO content by creating tangible value for technicians and engineers.

This integrated framework offers a holistic method of assessing how GenAI models can improve technical content, and also how to deal with various industry challenges and needs.

2.4 The Interdisciplinary Approach to Marketing Content Creation

In order to maximize the effectiveness of DCM practices to convey the messages, marketing content requires a combination of disciplines, including art and philosophy, sociology and psychology, technology and science. This broad blend adds value to information by connecting with a wide spectrum of individuals through creativity, philosophical ideas, data-driven approaches, science storytelling techniques, literature, and social viewpoints. For example, artistic features improve beauty, while philosophical principles add depth and meaning. Scientific tactics facilitate data-driven decision-making, literary skills improve storytelling quality, and sociological insights aid audience outreach (Rowley, 2008; Szwacka-Mokrzycka, 2015; Kosuniak, 2021).

Content creation aims to engage, inform, and persuade a target audience via attractive visuals, stories, and presentations. This approach makes the message remembered by the audience with the most emotional touch. However, the scope of marketing and its networks have expanded with the introduction of the Internet and the incorporation of digital technologies into the marketing process (Nguyen, 2021). This digital revolution marks a fundamental change in how brands talk to consumers, using their artistic toolsets to create a more dynamic interactive experience (Andrew-Essien, 2021).

2.4.1 Art and Philosophy in Digital Marketing Campaigns

For ages, art has been used as a conventional marketing strategy. In many media, the visual and performing arts have been utilized for marketing, advertising, and publicity. The most fundamental and historical classification divides artworks into three

categories: literary arts, which includes poetry, prose, and novels; visual arts, such as painting, photography, sculpture, and architecture; and performing arts, like theatre, dance, music, and cinema. It is essential to recognize that art segmentation, like its conceptualization, is not fixed and changes over time (Schelling et al., 2008). This dynamic evolution is especially evident in content marketing where digital technologies and traditional art forms merge seamlessly to produce multi-dimensional, interactive campaigns that are pushing the creative boundaries. Beyond that, this fusion not only redefines how art is seen, but also reveals its adaptability and modern digital ecosystem relevance.

In literary arts, a brand tagline slogan allows each company to promote its distinct value propositions (Jangga *et al.*, 2020). Blogs, e-books, and whitepapers are modern extensions that use textual content to educate, engage, and persuade audiences online. These formats are critical for providing detailed information, thought leadership, and knowledge and establishing trust and authority within a brand's domain (Holliman and Rowley, 2014).

In the visual arts, like painting, photography, sculpture, and architecture, digital marketing includes images, infographics, and virtual reality experiences. High-quality photos and infographics convert complex information into easily digestible, visually appealing content, which improves comprehension and retention (Milanesi and Guercini, 2020; Sunarso and Mustafa, 2023).

Performing arts, traditionally including theatre, dance, music, and cinema, have modern resembles in video content, podcasts, and webinars. Video marketing, for example, combines storytelling with visual appeal to provide a dynamic way to communicate products, services, and brand storylines while effectively catching the audience's attention and emotions (Sedej, 2019). Podcasts and webinars enable a more

intimate connection with audiences through audio engagement, allowing for the distribution of ideas, discussion of industry trends, and direct interaction with audiences (Lögdberg and Wahlqvist, 2020).

Incorporating philosophical aspects into content creation can profoundly enhance the depth and engagement of marketing strategies. Erwin Panofsky's iconographic method is a perfect example of this, outlining three steps: pre-iconographic, iconography, and iconology. The first pre-iconographic step, or primary or natural subject matter, entails identifying pure forms. Step 2, is locating a historical account, cultural narrative, or a piece of literature that explains what you observe. Step 3 reveals the underlying intrinsic meaning of an artwork concerning underlying ideological principles. This stage, which is referred to as iconology, is essentially an expansion of iconography (Panofsky, 2012, 1980). This method allows creators to infuse content with universally recognizable symbols and rich cultural narratives, thereby capturing attention on both emotional and intellectual levels.

Similarly, Rene Magritte's surrealist artwork "The Son of Man" exemplifies how art can elicit thought and interest. By covering a man's face with an apple, Magritte invites viewers to consider what is under the surface, representing his opinion that "everything we see conceals another thing; we always desire to uncover what is hidden by our sight" (Waligorska-Olejniczak, 2018). As Othman (2021) discusses, this strategy of capturing consumers through mystery and irregularity has been successfully used in advertising to create curiosity and deepen engagement. By evaluating the difference between image and word in Magritte's works, Othman explains how such innovative approaches affect advertising, showing the art and philosophy's power as a thought-provoking medium (Othman, 2021).

Advertising using such an approach can display images in which the product is cleverly hidden and tempt viewers to discover its qualities. Such visual storytelling evokes emotions and arouses the audience's curiosity to discover the hidden information that simple textual content cannot do, creating a strong connection between consumers and the brand. This method increases audience engagement by persuading through communication, and content increases the effectiveness of marketing strategies and leaves an impression (Lim and Childs, 2020).

Doing so would create a new organizational opportunity based on philosophical thinking alongside artistic marketing principles. Marketers' opportunities to transcend traditional lines and start campaigns are not just seen but felt, fostering a deeper sense of brand allegiance among consumers (Pugalia, 2023).

Storytelling a Powerful Tool in Modern Marketing: The art of literature conveys brand stories beautifully and distinctively, incorporating a company's values and legacy into a narrative that resonates with its audience on an emotional level. Consequently, storytelling emerges as a powerful tool in content creation, combining narrative structure with artistic expression to create a unique brand identity. By creating compelling and relevant storylines, brands can establish a bond with their audience through storytelling. This strategy goes beyond the promotion of products and enables businesses to leave an impression. Telling stories that reflect a company's values, authenticity, and mission strengthens the relationship between companies and consumers by fostering trust and loyalty (Kemp *et al.*, 2023).

Businesses that use storytelling in their marketing can set a connection with their target audience that increases client retention and brand loyalty. Storytelling can evoke feelings, shape attitudes, and influence consumer purchasing decisions, all contributing to a brand's success in the marketplace (Kvítková and Petrů, 2021).

Brands can engage their audiences through various storytelling tactics, such as those that focus on data, philanthropy, or customer experiences. Data is incorporated into stories through data-driven storytelling to offer insights and boost audience participation. Environmental concerns, ethics, and values are highlighted in philanthropic storytelling. Conversely, customer-led storytelling puts the customer front and center and allows them to become the ones who narrate a company's success (Suryana, 2024).

In conclusion, storytelling's impact on influencing customer purchasing decisions is highly complex. First, storytelling allows consumers to relate to the company by seeing themselves reflected in its tale. Second, it adds value by generating emotions that resonate with individuals personally. Third, storytelling encourages engagement behaviors, prompting consumers to interact with the brand (Júnior *et al.*, 2023).

2.4.2 Cultural, Historical, Psychological, and Sociological Insights

Regarding content marketing, considering culture, history, psychology, and sociology can help the content have a greater impact. Cultural and historical context insights enable marketers to adjust content to the beliefs and customs of certain audience groups, making it more relevant and approachable (Бокшань, 2023). Understanding psychological and sociological principles helps create information that elicits emotions and motivates actions using narrative and social proof tactics (Basu *et al.*, 2023). Sociological viewpoints enable marketers to tap into dynamics and community trends when creating content that promotes a sense of belonging and social identity. They can also use social proof to develop content that resonates and promotes sharing. This entails consumers being swayed by the behaviors of others and realizing the importance of social relationships (Carlson, Suter and Brown, 2008; Dairy, 2023).

Viral and Influencer Marketing through Strategical Insights: Viral marketing and influencer marketing are the outcomes of effectively leveraging cultural, historical, psychological, and sociological insights in content creation

Viral marketing utilizes social networks, blogs, and other online platforms to spread marketing messages, a concept popularized by Jeffrey Rayport in 1996 as "word-of-mouth." It is a low-cost method that, like biological viruses, spreads exponentially. It is also known as "word-of-mouse" for its online form (Guyot, 2016). The effectiveness of viral marketing depends on developing shareable, emotionally engaging content that appeals to universal motivations, as defined in Wilson's criteria, which include offering free content, enabling easy sharing, and leveraging existing communication networks (Wilson, 2000).

Jonah Bergers' STEPPS approach emphasizes social currency, triggers, emotion, public, practical value, and stories, presents a framework for understanding the components contributing to viral content and how marketers may adapt their messages to share potential (Chang *et al.*, 2023). Strategic selection of social media channels like LinkedIn, X, and YouTube is also crucial, as each platform caters to different professional audiences (Cartwright, Liu and Raddats, 2021).

Additionally, the role of influencers in viral marketing is significant, where leveraging their credibility and following can significantly extend content reach. Engaging influencers should be strategic and aligned with brand values, enhancing the effectiveness of viral messages in the digital domain (Crisafulli and Singh, 2022; Mero, Vanninen and Keränen, 2023).

Moreover, optimizing the reach of these marketing strategies involves overcoming challenges in identifying key influencers within vast networks. Identifying influential users, for maximum influence spread is a hurdle in viral marketing referred to

as Influence Maximization (IM) (Azaouzi, Mnasri and Romdhane, 2021). Conventional approaches, such as greedy heuristic algorithms, prove ineffective for networks due to their high computational demands and lack of scalability when dealing with large-scale data (Chen, Wang and Yang, 2009). The Golden Ratio Optimization Method (GROM) is a technique that tackles this challenge by leveraging the approximately 1.618 ratio to enhance IM efficiency. It integrates the expected diffusion value function to ensure the estimation of influence spread (Venunath, Sujatha and Koti, 2024).

Furthermore, AI methods, like deep learning and reinforcement learning, improve the identification of nodes by adjusting to network variations and refining seed selection dynamically. For example, DeepIM utilizes graph networks to analyze connections and enhance predictions of influence propagation more effectively (Ling *et al.*, 2023). Similarly, systems such as GraMeR and ToupleGDD employ meta-reinforcement learning to enhance scalability and efficiency in objective influence maximization tasks (Munikoti, Natarajan and Halappanavar, 2022; Chen *et al.*, 2024).

2.4.3 The Role of Data and Scientific Research in Content Marketing

The digital age has brought about an overwhelming amount of information. We are hit with generic marketing messages everywhere we look, making it hard for brands to stand out. In this noisy landscape, personalization has become the secret formula to developing deeper connections with customers (Babatunde *et al.*, 2024).

Analyzing customer data allows for the creation of customer-focused marketing initiatives that improve user experience while strengthening brand loyalty and satisfaction (Rosário and Dias, 2023). By diving deep into data, marketers can uncover insights about customer behaviors and preferences that would otherwise go unnoticed. This means they can create content that really speaks to customers, making their interactions with brands more meaningful (Adaga *et al.*, 2024).

Moreover, scientific research offers a foundation for understanding the concepts and practical applications of data-driven marketing, ensuring that strategies are both innovative and rooted in proven methodologies. This integration of data and research aids businesses in gaining an edge by making informed decisions that align with consumer desires and market trends (Donthu *et al.*, 2021).

In summary, when businesses combine data analysis with excellent research, they can make better decisions, generate content that is both informative and engaging, and position themselves as industry leaders. This intelligent strategy enables organizations to cut through the noise, engage closely with customers, and succeed in the competitive digital environment.

Data-Driven Thought Leadership: Using data-driven and informative content in marketing not only enhances decision-making but also establishes a brand as a thought leader. This approach allows companies to offer fresh perspectives and practical solutions to industry challenges, setting them apart in a crowded market (Neuhaus, Millemann and Nijssen, 2022). Thought leadership, defined as expertise and credibility in a specific topic, has gained popularity in academia and business, particularly in B2B content marketing (Aapola, 2012; Pelkonen, 2020). While academic thought leadership remains narrowly focused on scientific research and theory, its business application is broader, involving firm executives and organizations sharing insights and driving industry transformation (Barry and Gironda, 2019).

Thought leadership is regarded as the summit of professional performance, emphasizing individual merit and corporate strategy. It involves being recognized as a credible authority and offering new, forward-thinking perspectives (Barry and Gironda, 2019). Establishing thought leadership requires a strategic approach, concentrating on

distinctiveness and competitive advantage while using communication methods for reach, engagement, authority, and longevity (Klein, 2011).

Effective thought leadership content does more than just inform, it engages and inspires action. By diving deep into data to understand market trends and customer behaviors, brands can create content that is highly relevant and resonates with their audience. This not only demonstrates the brand's expertise but also its commitment to providing real value (Neuhaus, Millemann and Nijssen, 2022).

2.5 Theoretical Concepts of GenAI and LLMs

Advancements in GenAI models over the last decade have transformed content marketing efforts into highly personalized, one-to-many experiences. These technologies have an impact on Business Process Management (BPM) by streamlining tasks, enhancing both customer and employee satisfaction levels, and identifying potential avenues for process innovation in creative domains (Beverungen *et al.*, 2021; Haase and Hanel, 2023). They can generate video, music, text, and graphics of high quality resembling the data on which they were trained (Epstein et al., 2023; Feuerriegel et al., 2024). Figure 2.2 shows the various types of GenAI for different purposes.

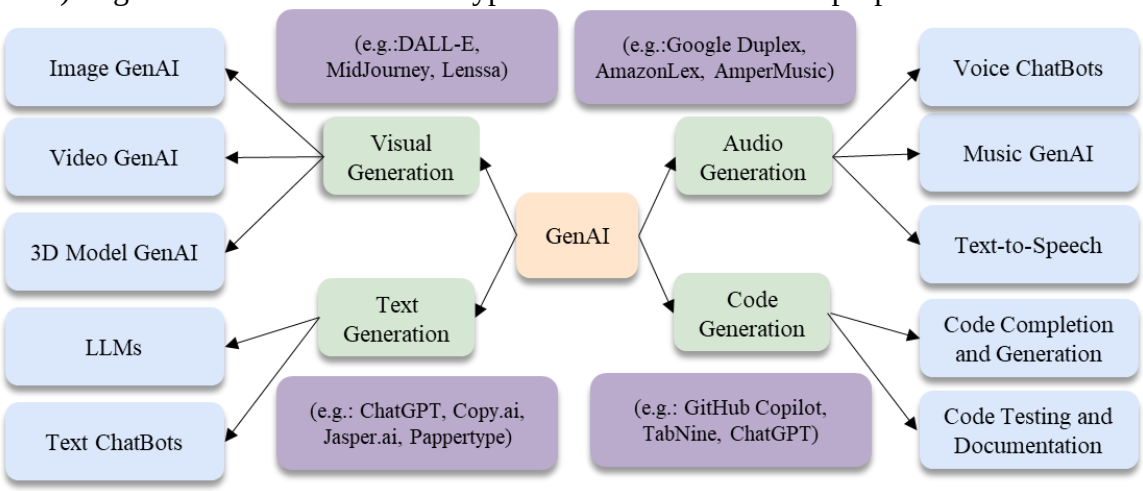

Figure 2.2
Generative AI Types

GenAI models come in various formats, one of the most common structures is Generative Adversarial Networks (GANs), which are powerful tools for automated information processing in areas including NLP, computer vision, creative art, and design (Bhatt and Bhatia, 2020). These models utilize a pair of neural networks, a generator to create material, and a discriminator to assess its authenticity. The networks repeat the generate/discriminate cycle until the generator delivers information that cannot be differentiated between real and manufactured (Jovanovic and Campbell, 2022). The Variational Autoencoder (VAE), which consists of an encoder and a decoder, is another valuable structure. The data is input into the encoder, transforming it into a set of latent space parameters, the decoder then reconstructs and understands the data patterns using these hidden representations. VAEs are helpful for content generation and data structure interpretation in various disciplines. They are used for image generation, anomaly detection, feature extraction, recommendation system development, and other tasks (Doersch, 2016). DALL-E 2, Stable Diffusion, and Midjourney, popular AI tools for turning textual prompts into realistic images, leverage the diffusion model. Figure 2.3 shows the GANs, VAEs, and Diffusion models.

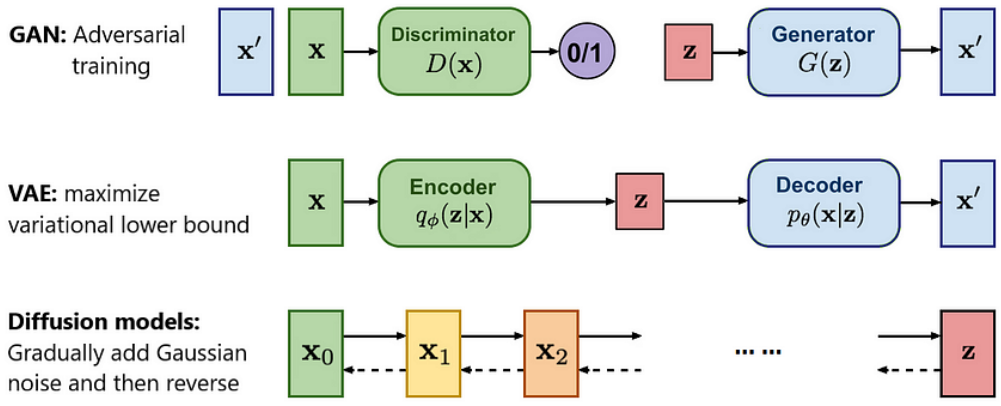

Figure 2.3
GAN, VAE, Diffusion Models (Gainetdinov, 2023)

This model gradually applies noise to data through a process known as forward diffusion, then, by iteratively removing noise, the model learns how to duplicate the data or generate new samples with a similar distribution (O'Connor, 2022). This approach, which relies on Markov chains and variational inference, enables a highly flexible generation of various sorts of data, such as images, sounds, and complicated structures (Ho, Jain and Abbeel, 2020). One of the key innovations behind the generative AI models is the introduction of transformers. This architecture has significantly changed the landscape of NLP, including natural language understanding (NLU) and Natural Language Generation (NLG) (Fanni *et al.*, 2023). The transformer, as displayed in Figure 2.4 uses an encoder-decoder structure. The encoder translates an input sequence into a set of representations, and the decoder utilizes the output from the encoder and its own past output to generate a sequence of results. It also integrates attention mechanisms (Vaswani *et al.*, 2017), along with self-attention layers, to overcome the limitations of early neural networks, such as Recurrent Neural Networks (RNNs) and Long Short-Term Memory (LSTM) networks, with long-term dependency. Transformers can process entire sequences of data simultaneously rather than sequentially, providing a richer, more nuanced understanding of the context (Wolf *et al.*, 2020). This advancement paved the way for the development of advanced language models such as OpenAIs Generative Pre-Trained Transformers (GPT) and Google Bidirectional Encoder Representations from Transformers model (BERT) (Ghojogh and Ghodsi, 2020). Apart from using transformers in NLP, this model has been expanded to generate images through AI, leading to a transformation in visual data management. For instance, Vision Transformers (ViT) leverage transformer principles to categorize images as sequences of patches, displaying that a pure transformer applied directly to images can yield outcome (Dosovitskiy *et al.*, 2020).

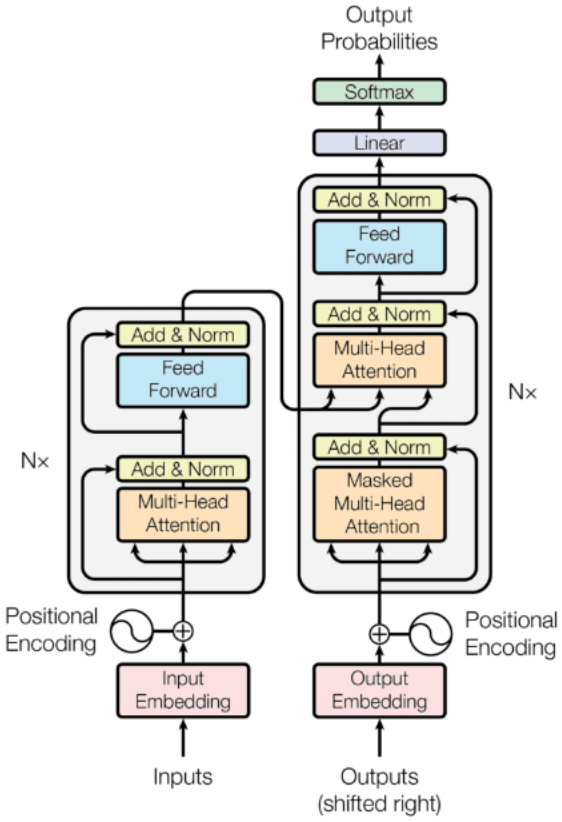

Figure 2.4
Attention Mechanism in Transformers' Structure (Vaswani et al.*, 2017)*

In addition to GenAI models, artificial intelligence includes LLMs as a separate category primarily focused on comprehending, interpreting, and generating human language. The evolution of LLMs can be traced back to early advances in neural network research, particularly in NLP. LLMs are trained on extensive text datasets to handle various language tasks such as translation, summarization, question-answering, and more (Ding *et al.*, 2023). LLMs can understand and generate natural language. They are trained extensively on a large amount of text data using DL methods to carry out a variety of tasks such as comprehending, processing, and generating natural language, summarizing, handling complex reasoning, and answering questions effectively (Myers *et al.*, 2024). During pre-training, the model learns to anticipate the next word in a sequence based on context, effectively capturing syntactic and semantic patterns in the language (Min *et al.*,

2023). The pre-trained model will then be fine-tuned on domain-specific datasets for downstream tasks such as text classification and language synthesis (Siddique, Oymak and Hristidis, 2020). DL approaches, improvements in neural architectures, better processing capabilities, and the widespread availability of internet-based training data have all contributed to recent advancements in this discipline. These breakthroughs have transformed language models, allowing the development of LLMs that approach human-level performance in specific benchmarks (Kaddour *et al.*, 2023).

However, the rapid evolution of these technologies raises ethical and social challenges, such as bias amplification and the creation of disinformation, needing a responsible approach to research and implementation (Naveed *et al.*, 2023).

2.6 Integrating Image GenAI and LLMs in Content Creation

A notable development in artificial intelligence technology is image-GenAI, which has been demonstrated by programs like Microsoft Bing's Image Maker and Gab's AI Image Generator (McGee, 2023). These advanced systems generate diverse, realistic visuals responding to user inputs using complex algorithms and DL approaches. By analyzing patterns and features in existing visual data, AI has proven that it can accurately produce a wide range of images, from landscapes to portraits (Martin-Rodriguez, Garcia-Mojon and Fernandez-Barciela, 2023). AI's ability to create images quickly and effectively has revolutionized several industries, including marketing, design, and the arts. However, issues like possible biases in training data, ethical considerations with content production, and the effects on conventional creative practices remain critical challenges (KIROVA *et al.*, 2023). Beyan et al. (2023) analyzed how AI tools has revolutionized the architectural sector, focusing on AI image generators such as DALL-E and Mid Journey (Beyan and Rossy, 2023). In this context, with these GenAI-based tools, text can be transformed into complex visual designs, significantly advancing design

creativity and efficiency (Maganga, 2022). Beyan and Rossy (2023) compared AI and human intelligence, highlighting AI's ability to share knowledge quickly while pointing out that AI lacks human creativity and empathy (Beyan and Rossy, 2023).

Additionally, LLM developments have created significant content creation and text generation opportunities, influencing various areas, including marketing content, scientific writing, and coding. These language models play a significant role in educational environments, offering insights into their potential in corporate training and development (Anderson *et al.*, 2023). LLMs are being investigated in educational settings for their ability to develop and analyze educational content and function as effective communication interfaces. For instance, this includes creating educational content and considering the ethical implications and the need for user-friendly interfaces, as noted by scholars such as (Moore *et al.*, 2023).

Wang et al. (2022) utilized LLMs to generate educational questions and tested various prompting tactics. Under some prompting settings, the produced queries were indistinguishable from those of a subject matter expert and human-made inquiries (Wang *et al.*, 2022). Building on this, Liu et al. (2023) reported on a study implementing an LLM-based agent system called CoQuest, which was aimed to help researchers formulate research questions (RQs) through human-AI collaboration (Liu *et al.*, 2023).

While LLMs such as GPTs have significant potential to support various writing processes, the success of LLMs in this role is heavily influenced by the task's complexity and the expected output quality (Gmeiner and Yildirim, 2023). LLMs' skills are more suited to tasks requiring lower output quality, such as word associations, summarization, and reformatting (Yang *et al.*, 2020). However, the limitations of LLMs become more evident for more challenging activities that require higher levels of creativity and originality, such as creating new content or sophisticated story plots (Yuan *et al.*, 2022).

Therefore, as represented in Figure 2.5, in designing experiences for LLM-based writing support, the task complexity, and the required output quality must be considered. This method helps identify the best use cases for LLMs in content development, ensuring that the outputs are meaningful and relevant to the specific writing assignment (Dove *et al.*, 2017).

Furthermore, Joon et al. (2023) studied using LLMs for text data generation, focusing on increasing diversity while keeping accuracy. They investigated approaches such as logit suppression and temperature sampling to improve the quality of the generated datasets. The study also included human interventions to guide the data-generating process toward more diversity. The results showed that label replacement could improve model accuracy; however, filtering out-of-scope cases had no significant positive influence. The study emphasized the significance of human-AI collaborations in text generation tasks and examined limitations such as dataset balance and model performance (Joon *et al.*, 2023).

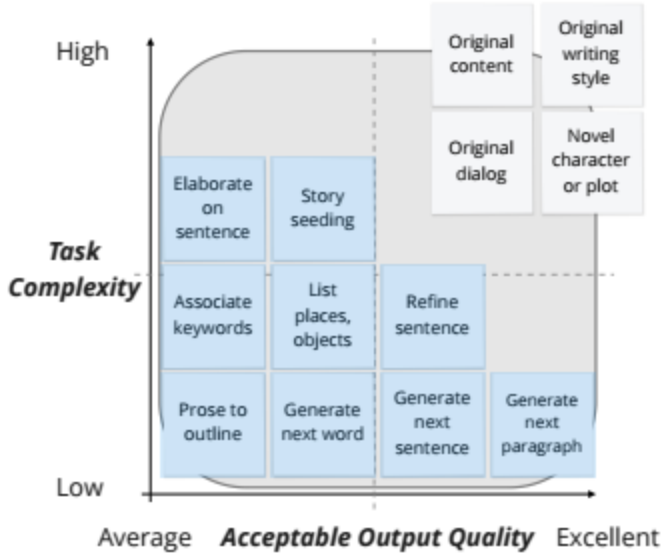

Figure 2.5
Task Complexity-Output Quality Matrix for LLM Capabilities (Gmeiner and Yildirim, 2023)

2.7 B2B Content Marketing

Content marketing is an effective marketing strategy that helps firms of all sizes and types establish their brands, engage with customers, increase website traffic, and produce a significant number of highly qualified leads. However, depending on whether a business is B2G, B2B, or B2C, content marketing may vary slightly (Nathaniela *et al.*, 2022).

B2G organizations supply products or services to government bodies through contracts or procurement procedures, which, in this study, was set aside due to its distinct nature, which involves unique regulatory requirements and require a grasp of rules and adherence to regulations (Krah, 2020). B2B interactions involve organizations selling products or services to other businesses. Conversely, B2C transactions entail selling from businesses to individual customers (Zhang and Du, 2020). Although the initial steps in developing content marketing strategies for all marketing environments are similar and mainly focus on defining the target audience and ensuring effective customer communication, they require strategies based on specific audience characteristics and buying habits (Djurakulovich, 2023). The differences in B2C and B2B content marketing are considerable, demonstrating the objectives, target audiences, purchasing paths, techniques, and communication styles required to connect with their specific readers. B2B content marketing primarily focuses on generating and nurturing leads to build lasting relationships and highlight the value of products or services to businesses. This includes sharing information and building trust. On the other hand, B2C content marketing centers around understanding consumer needs, encouraging engagement and sales, and building brand awareness and emotional connections (Neuhaus, Millemann and Nijssen, 2022). After considering ROI and long-term corporate benefits, B2B marketers concentrate on serving buyer personas that make purchase decisions. These personas look

for content that highlights accomplishments, industry insights, and domain knowledge. B2C personas, on the other hand, typically comprise customers who make more subjective and emotionally motivated purchases. They search for information that emotionally connects with them (Caerels, 2023). When assessing how GenAI is incorporated into B2B and B2C marketing strategies, it is crucial to grasp the distinctiveness between these two marketing methods. These variations play a role in deciding which sector is best suited for examining AI's potential in content marketing.

Table 2.1 shows some key differences between B2B and B2C marketing.

Table 2.1

Key Differences Between B2B and B2C Marketing Approaches

Aspect	**B2B Marketing**	**B2C Marketing**
Decision-Making Process	Longer sales cycles involving multiple stakeholders	Shorter sales cycles with individual decision-makers
Content-Type	In-depth, technical content like whitepapers and case studies	Short, engaging content like social media posts and ads
Personalization	High-level, based on detailed personas and specific business needs	Broader, based on consumer trends and demographics
Purchase Motivation	Rational, focusing on ROI and long-term benefits	Emotional, focusing on immediate needs and desires
Customer Relationship	Relationship-driven, emphasizing trust and long-term engagement	Transactional, focusing on brand loyalty and repeat purchases
Marketing Channels	Professional networks, industry-specific platforms	Mass media, social media, and consumer-focused platforms
Content Frequency	Lower frequency but higher quality and detail	Higher frequency with a focus on engagement and reach
Use of Analytics	Advanced analytics for lead scoring, account-based marketing	Analytics for customer behavior and preference tracking

Choosing to focus on the B2B industry rather than the B2C sector to evaluate generative AI's capabilities and effectiveness in content marketing is a strategic move backed by various compelling reasons. B2B marketing involves sales processes and multiple decision makers, necessitating tailored content like whitepapers and case studies (Sharma, 2022). This field also calls for approaches based on buyer personas and specific business requirements, enabling a thorough evaluation of AI's potential to create highly personalized and impactful content (Kirk *et al.*, 2023). Moreover, B2B buying decisions are predominantly rational and centered on ROI and long-term gains aligning well with AI's proficiency in crafting data-driven and informative content (Eriksson and Heikkilä, 2023). Building enduring relationships and trust is pivotal in B2B marketing, demanding delivery of high-quality content that AI can assist in producing (Taiminen and Ranaweera, 2019). Additionally, the advanced analytics utilized in B2B for lead scoring and account-based marketing present an opportunity to explore how AI integrates with these tools to enhance content strategies (Shi, 2023).

In the area of B2B interactions, content marketing mostly involves textual content. Written content such as papers, case studies, and in-depth articles allows businesses to research topics, demonstrate their skills, and provide important insights to their target audience. These textual formats are essential for establishing authority and knowledge in the sector by offering analysis and problem-solving techniques for business challenges (Edwards, 2023; Stahl, 2023; Baker, 2024). Focusing on these types of content, we seek to assess how GenAI models including LLMs can create quality, impactful content that caters to the specific demands of the B2B sector.

2.7.1 B2B Content Creation Main Steps

Creating a B2B content marketing strategy entails steps aimed at capturing the target audience and converting them into customers or clients. The first and most critical

step is to specify the content's goals, including building thought leadership and credibility, engaging the audience, generating leads, or promoting conversions (Strong, 2020). The second step is to identify the audience by developing a complete buyer persona that reflects their qualities and needs (Jansen *et al.*, 2024). Then, establishing marketing objectives using the S.M.A.R.T. Framework to ensure they are specific, measurable, achievable, relevant, and time-bound (Latham, 2020), or follow the OKR (Objectives and Key Results) technique, which focuses on setting goals and defining key results for progress tracking in agile thinking (Stray *et al.*, 2022). Understanding the buyer's journey involves structuring content based on awareness and consideration to meet their changing needs. Following that, content concepts should be created using information from buyer personas, and distribution channels such as LinkedIn for B2B lead generation and other platforms should be chosen to broaden outreach (Rangaswamy *et al.*, 2020). Finally, success can be assessed by monitoring performance indicators and KPIs for changes and improvements to the strategy (TAVŞAN and ERDEM, 2021). By adhering to these rules, businesses may create a content marketing plan that creates a competent brand personality, attracts leads, and engages customers in the competitive B2B industry (Aagerup, Andersson and Awuah, 2022).

2.7.2 Internal and External Characteristics of Effective B2B Content

The most effective content types in content marketing provide essential insights, solve specific difficulties, and inform the target audience about the firm and its solutions (Yaghtin, Safarzadeh and Zand, 2020). For example, according to industry insights, top-performing marketing content includes blogging, podcasts, email newsletters, and infographics (Ananth, 2016). Moreover, emphasizing the significance of user-generated content, downloadable templates, interactive content, and long and short-form content improves content marketing strategies even further (Koob, 2021).

Effective marketing content is a dynamic combination of internal and external characteristics, working in harmony to engage and deliver value. On the internal side, it offers useful, easily comprehensible, and interesting information and always tries to be original, clear, accurate, and relevant (Holliman and Rowley, 2014). Externally, it is specifically created for the target audience, optimized for the particular platform, and delivered through the most suitable channels for maximum exposure (Agnihotri *et al.*, 2016). In today's competitive landscape, this balance is a reliable way to guarantee that content not only grabs the attention, but also speaks directly to the decision-makers, and leads to real engagement and real impact.

To achieve this balance, marketing content must include key internal characteristics. First and foremost, it must be informational and valuable, providing in-depth industry insights and business solutions (Stephanie Stahl, 2023). Equally important, Dawn (2014) underlines that personalization is critical, with stages such as customer identification and tailored content production (Kumar Dawn, 2014). Additionally, relevancy is also essential, with content that addresses current and hidden market concerns (Gajanova, 2021). Engaging and interactive content that encourages active audience participation is also necessary (Balaji *et al.*, 2023). Furthermore, readability and clarity are crucial, emphasizing accessibility and effective communication (Sakhuja *et al.*, 2021). Coupled with this, accuracy and credibility, as demonstrated by data-backed evidence and reliable sources, build confidence and reliability (Pehlivanoglu *et al.*, 2021). Consistency is another critical factor as noted by Tyrona Health (2023) and Cortez et al. (2020) who both point out that consistency in brand components improves brand recognition (Mora Cortez, Gilliland and Johnston, 2020; Tyrona Health, 2023). Finally, aligning content with the sales funnel and business goals ensures an innovative and

effective marketing content strategy (Venermo, Rantala and Holopainen, 2020). Figure 2.6 shows the SEO content types keyword funnel (WorldStream, 2023).

Figure 2.6
Content Keyword Funnel (WorldStream, 2023)

Equally important as internal characteristics, effective marketing content also combines various external characteristics critical for engaging audiences and increasing conversions. For instance, search Engine Optimization (SEO) is necessary for optimizing reach and involves designing content to rank for specific queries, focusing on educational and technical keywords (Papagiannis, 2020).

Additionally, format-driven platforms and multichannel access emphasize the use of appropriate content formats and distribution channels to engage target audiences (Donchak, McClatchy and Stanley, 2022). Influencer partnerships and social proof, such as testimonials and case studies, boost content credibility and trust (Parasala and Jagadeesan, 2023).

From a user-centric perspective, user experience-driven content, which prioritizes accessibility, visual appeal, and usability, is essential for audience engagement (Luther, Tiberius and Brem, 2020). Moreover, omnichannel techniques allow seamless and consistent channel interaction while adapting content to customer needs (Harrison *et al.*,

2021). To enhance efficiency, an agile approach to content development that combines AI and human strategy allows for rapid content production and optimization (Michael Brito, 2023). Finally, organic search availability guarantees that information is discoverable and relevant to audience search queries (Rebecca Riserbato, 2022). Together, these factors work together to increase the effectiveness of marketing content in today's digital market. To summarize, Table 2.2 lists the internal and external characteristics of effective marketing content and their primary components.

Table 2.2

Internal and External Characteristics of Effective B2B Content

Characteristic	**Main Components**
Internal Characteristics	
Informative and Valuable	- In-depth analysis of industry trends, best practices, and new solutions - Providing comprehensive and relevant information for informed purchasing decisions - Establishing the company as an industry thought leader
Personalizing	- Client identification - Understanding client requirements - Encouraging consumer engagement - Customizing content based on individual needs
Relevancy	- Addressing current industry difficulties and trends - Displaying understanding and agility in a volatile business environment - Incorporating current industry data and trends
Engaging and Interactivity	- Including interactive components like polls, surveys, quizzes, and multimedia presentations - Facilitating user-generated content and comments for increased engagement
Readability and Clarity	- Adjusting tone and style to the comprehension level of the audience - Using visuals such as charts and graphics to explain complex concepts

Accuracy and Credibility	- Citing credible sources and presenting data-backed evidence - Building credibility through consistent, high-quality content writing
Consistency	- Consistent use of distinctive brand colors, forms, and sounds - Establishing a recognizable brand identity for improved consideration and communication effectiveness
Alignment with Sales Funnel and Business Goal	- Tailoring content for each stage of the sales funnel (TOFU, MOFU, BOFU) - Addressing the awareness phase with instructive and exciting content - Providing in-depth information in the consideration phase, highlighting expertise through case studies and webinars - Offering focused and convincing content in the decision phase, displaying unique value propositions - Incorporating post-purchase content for customer satisfaction, retention, and upselling
External Characteristics	
Search Engine Optimization (SEO)	- Incorporating desired phrases in content for improved organic search results - Complementing content marketing efforts for increased organic traffic and higher conversion rates
Format-Driven Platforms & Multichannel Access	- using a range of content types, including images, videos, and user-generated content - Distributing content on diverse online platforms and channels - Ensuring seamless availability across various channels through multichannel accessibility
Influencer Collaboration and Social Proof	- Collaborating with industry influencers and thought leaders - Incorporating social proof elements like testimonials, case studies, and success stories
User Experience-Driven	- Focusing on elements like accessibility, visual attractiveness, and usability - Creating user-friendly website design and navigation - Incorporating visually appealing content with eye-catching visuals and well-designed graphics

Omnichannel	- Integrating omnichannel strategies for seamless and consistent contact across multiple channels - Providing personalized content tailored to the specific needs and preferences of business clients
Agile Approach	- Implementing agile techniques for scalable and strategic content creation - Combining AI efficiency with human teams for dynamic and iterative content development
Organic Search Availability	- Showing up in organic search engine results on platforms like Google, Yahoo, LinkedIn, etc. - Drawing users who are actively looking for relevant information, goods, or services - Utilizing advanced algorithms for developing new web pages and increasing organic search traffic

2.7.3 Metrics to Measure Effectiveness of B2B Content

Content marketing metrics include quantitative (numerical) and qualitative (descriptive) data points, allowing organizations to assess the success and impact of their content. The effectiveness of marketing content is a multidimensional process considering a wide range of KPIs. Specifically, in the context of social media marketing, there is a significant focus on the critical demand for proactive client engagement on social media platforms, which involves complicated interactions with numerous stakeholders. Given the complexity of this process, this process is distinguished by its complexity, necessitating a thorough evaluation of metrics' quantitative and qualitative components to get insights about the performance and impact of content (Balaji *et al.*, 2023).

To structure these efforts effectively, the following metric categories are considered to evaluate the effectiveness of digital content on social media platforms.

Visibility and Brand Awareness Metrics: Visibility and brand awareness are critical KPIs in content marketing and include metrics such as organic search traffic,

impressions and reach, keyword rankings, total website traffic, unique visitors, and share of voice (SOV).

For example, organic search traffic, an essential metric of a website's reach and visibility, demonstrates the effectiveness of SEO efforts and draws high-quality, intent-driven visitors (Jung *et al.*, 2019; Prakash, 2020). Impressions and reach on social media platforms evaluate total views and unique viewers of content, respectively, providing information about content performance and audience engagement (Mui and Ming, 2020).

In terms of SEO performance, Keyword rankings in Search Engine Results Pages (SERPs) show content relevancy and visibility to target audiences, which is especially significant for companies targeting specific technical industries (Michael Brenner, 2022). Total website traffic overviews a site's audience and visitor behavior patterns (Semerádová *et al.*, 2020). In contrast, unique visitors count the number of persons visiting a site, showing the site's capacity to attract new viewers (Awichanirost and Phumchusri, 2020). Complementing these metrics Share of Voice (SOV) is a comprehensive metric that measures a brand's market presence compared to competitors across several channels, such as social media, organic search, and paid advertising. It is calculated by dividing the brand's metric count by the total metric count, multiplied by 100, assessing how much a brand's presence dominates the entire conversation within a specific market or industry, particularly when compared to its competitors (Anderson, 2023).

$$\boldsymbol{SOV}\ (\%) = \left(\frac{\boldsymbol{Brand's\ Metric\ Count}}{\boldsymbol{Total\ Metric\ Count}}\right) \times \mathbf{100} \qquad 2.1$$

This approach provides businesses a quantitative understanding of their market share, enabling strategic decision-making and resource allocation. Regularly monitoring and adapting share of voice calculations contribute to a brand's agility and competitiveness in the ever-evolving digital marketing landscape (Harsel, 2021).

Together, these metrics provide a holistic view of a brand's online presence and efficiency, supporting firms in enhancing their content marketing approach.

Engagement and Interest Metrics: In content marketing, engagement and interest metrics refer to user activities and indicators reflecting audience interaction with online content. Key indicators in this category include, social sharing, which includes shares, mentions, and comments, reveals how information resonates with the audience, allowing organizations to modify their strategy for increased engagement (Gümüş, 2017). Additionally, The Click-Through Rate (CTR) is a measure that calculates the ratio of link clicks to views, indicating content relevance and interest. However, it should be combined with other indicators to provide a holistic view of performance (Dean, 2023). Other important metrics include, backlinks indicate how valuable and trustworthy content influences SEO and brand authority (Nurkasanah *et al.*, 2022). The bounce rate, representing the percentage of single-page views, helps evaluate website engagement and user experience, with specific ranges suggesting varied levels of efficacy (Poulos, Korfiatis and Papavlassopoulos, 2020). The engagement rate represents the level of interaction with content across platforms and is critical for determining content resonance with the target audience (Sehl and Tien, 2023). Longer average time on the page indicates higher user attention and relevancy to content (Bekavac and Garbin Praničević, 2015). Lastly, Net Promoter Score (NPS) measures customer loyalty and satisfaction, which is essential for assessing the impact of content on consumer advocacy in B2B situations (Otto, Szymanski and Varadarajan, 2020).

When analyzed together, these metrics provide complete insights into user engagement, allowing B2B marketers to optimize their content strategies.

Lead Generation Metrics: Lead generation metrics are essential in digital content marketing for analyzing and enhancing business growth. Key metrics in this

category include conversion rate, which indicates how effective content is at converting leads into customers (Gupta and Nimkar, 2020), and the Cost per Lead (CPL), which represents the cost required to acquire each lead (Khimich and Perfilova, 2020). In addition, Client Lifetime Value (CLTV) provides information on the long-term value of customer relationships and data-driven marketing decisions (Gupta and Nimkar, 2020).

Further metrics include, Customer Acquisition Cost (CAC) measures the total cost of converting consumers through marketing activities (Livne, Simpson and Talmor, 2011). Sales Cycle Length (SCL) measures the time between lead generation and ultimate sales conversion, revealing how content affects the sales process (Bilro, Loureiro and Souto, 2023). The average deal size measures the effectiveness of marketing strategies in terms of transaction values (Yaghtin, Safarzadeh and Karimi Zand, 2022). Finally, Return on Investment (ROI) thoroughly assesses the profitability and effectiveness of marketing initiatives, which is essential for strategic decision-making (Mardiani, Utami and Mujahid, 2023).

Collectively, these KPIs work together to provide a comprehensive view of lead generation performance, supporting business owners in optimizing their strategies for maximum impact and growth.

2.7.4 Tools for Measuring B2B Content Marketing Success

In the B2B content marketing environment, proper software and analytical tools are important for assessing and improving digital marketing campaign effectiveness. Among the most widely used solutions, Google Analytics is a good choice for monitoring data such as organic search traffic, total website traffic, and unique visitors, which provide insights into user engagement and marketing ROI (Clifton, 2012). Additionally, tracking keyword ranks and backlink quality with SEO tools like Ahrefs and SEMrush helps improve content for search engine exposure (Sudhakar *et al.*, 2019).

Beyond SEO metrics, social media analytics tools such as Hootsuite and Sprout Social are crucial for analyzing interactions on sites like Facebook, LinkedIn, and X (Al-Qurishi *et al.*, 2015). These insights allow marketers, to refine their strategies by understanding which content resonates most with their target audience.

In terms of sales performance tracking, CRM applications, like Zoho CRM and Salesforce, track sales KPIs to determine how content marketing affects sales and customer relationships (Suutari, 2023). Moreover, real-time feedback on content marketing activities can be obtained through survey platforms such as GoogleForms, SurveyMonkey, and TypeForm, which can be used to measure customer satisfaction and loyalty, including Net Promoter Score (NPS) (Neves, Augusto and Terra, 2020).

Expanding beyond traditional analytics, Data analytics platforms like Tableau and Microsoft Power BI integrate data from various sources to thoroughly study content marketing performance across multiple factors (Libby, Schwebke and Goldwater, 2022). Additionally, neuro lab tools offer invaluable insights into the nuances of human interaction and sentiment towards content. These tools provide a unique perspective, revealing more profound layers of engagement and emotional response (Singh, 2020). Neuromarketing research has shown great potential in evaluating the efficacy of content by employing techniques like Electro Encephalo Graphy (EEG) and functional magnetic resonance imaging (fMRI). Specifically, EEG studies can explain the degree of emotional involvement, and attention spans that viewers experience, providing insightful information about the content's ability to captivate viewers and motivate them to act (Morin, 2011). Comparably, functional magnetic resonance imaging (fMRI) can identify the precise brain regions stimulated by various information, suggesting potential effects on retention and decision-making processes (Plassmann *et al.*, 2008).

Complementing these insights, the integration of eye-tracking technology expands the assessment tools by providing extensive data on how viewers browse and engage with content, identifying parts that receive the most attention and others that may be neglected. This is particularly important for optimizing layout and design to increase content visibility and interaction (Duchowski, 2007). Additionally, using facial coding and Galvanic Skin Response (GSR) measures, marketers may determine the emotional impact of their content and modify it to attract the appropriate responses. By incorporating these techniques broadens the scope of analysis to include emotional reactions and excitation brought on by content (Westerink *et al.*, 2008).

Ultimately, integrating neuro lab findings with data from CRM applications, SEO tools, and social media analytics can provide a comprehensive view of content marketing performance. Marketers can better understand their content's impact by correlating neurological and physiological responses with behavioral metrics like engagement rates, and conversion. This multifaceted approach not only aids in optimizing content for desired outcomes but contributes to developing more persuasive and customer-centric marketing strategies (Zulfiqar, Lakho and Nizam, 2022).

2.8 Summary

In this chapter, an extensive review of the literature on AI-driven content marketing was undertaken, with a particular emphasis on the aviation MRO industry, and the key roles of GenAI and LLMs. The discussion reviewed various theoretical frameworks, including technology adoption models (TAM, UTAUT), text generation and evaluation (NLG), collaboration between humans and AI (CST) and customer-centric principles (SD Logic) which, in combination, constitute the Integrated AI-Enhanced Content Creation (IAECC) framework. Aviation MRO content creation with the aid of AI was evaluated together with its impact on automation of technical documentation,

enhancement of predictive maintenance, optimization of the supply chain, and enhancement of compliance with industry regulations. Despite the fact that AI enhances efficiency and accuracy, bias, transparency, and human oversight require a structured evaluation model like IAECC. The chapter also distinguished between B2B and B2C content marketing with the emphasis that B2B strategies need rational decision making, long-term engagement, and data-driven personalization, all of which are in harmony with AI's ability to develop structured, insightful and compliance-focused content. Furthermore, the study identified key performance measurement metrics which include brand visibility, levels of engagement, conversion rates, and lead. It also details how common analytics tools (Google Analytics, SEMrush, CRM software) and neuromarketing techniques (EEG, fMRI, eye-tracking) can help give a full understanding of the effectiveness of AI-generated content. The multidisplinary nature of AI-driven content marketing was also discussed, revealing how art, philosophy, sociology and psychology affect storytelling, branding and audience participation. Finally, the chapter was concluded with a statement that, while using AI in content development in the aviation MRO industry has many benefits, it is important not to overdo the automation and to maintain the proper level of human expertise. Ethical issues, legal aspects, and the interface between AI-generated insights and human imagination are still major problems that organizations have to deal with. This comprehensive review provides the basis for future empirical research and offers a clear guide for incorporating AI into the B2B content strategy in compliant and factual domains such as the aviation MRO sector.

CHAPTER III:

METHODOLOGY

3.1 Overview of the Research Problem

The fast evolution of DCM has reshaped how businesses interact with their audience in every industry including the aviation MRO sector. The integration of GenAI and LLMs marks a significant shift offering to improve content creation efficiently and creatively. However, this technological progress brings about both challenges and opportunities that need exploration. The main research challenge is understanding how GenAI technologies, (GPT4 and AviationGPT, as our selected GenAI models in this study) can be effectively used to create informative and engaging marketing content tailored for the B2B environment of aviation MRO. This involves investigating the synergy between human creativity and emotional intelligence alongside AI's data processing capabilities. It is also crucial to consider issues such as data privacy, biases and the impact of these factors on roles in content creation.

Therefore, this study aims to assess how well AI-generated content compares to that created by humans. It presents a plan for enhancing content quality in the aviation MRO sector through the collaborative efforts of humans and AI. The ability of AI to generate content will be evaluated in the main steps of content marketing in terms of generating content ideas and titles (first case study) and content creation (second case study). Finally, this study aims to create a comprehensive framework enhancing AI-human collaboration for more impactful and relevant content creation.

3.2 Operationalization of Theoretical Constructs

This section demonstrates how the key theoretical concepts were operationalized in order to capture and assess content quality and efficiency. Many businesses use a number of technologies to know the performance of their marketing content. Google

Analytics for example in analyzing user engagement, website traffic, and conversion rates, HubSpot and Adobe Analytics for tracking customer journeys and behavior, and social media platforms for understanding the effectiveness in terms of audience interactions, are some of the examples of technologies that organizations use. They also may use CRM and tools like Hotjar and Crazy Egg, tracking leads and customer retention while providing additional information, showing how users engage with webpages and thus enabling businesses to optimize their content and increase user engagement.

This study aimed at evaluating the efficacy of GenAI in content ideation and copywriting with the help of evaluation metrics and criteria as the theoretical constructs of the study. In order to operationalize these ideas, there are several tools and data analytic approaches below.

Metrics: For the content ideation stage, three metrics were chosen: trendiness, to make sure that the ideas are relevant to the current trends in the industry and are of interest at the given time, relevance to the industry, to make sure that the content meets the particular requirements and issues of the target group, and the appropriateness for the content type, to make sure that the ideas are relevant to the format that is going to be used in the article, case study or white paper.

In order to assess GenAI's capability of creating and enhancing written content, several metrics were used. The readability checked how easy it is for the target audience to understand the content, ensuring accessibility and comprehension. Clarity emphasized the logical flow and coherence of ideas, to make sure the message was delivered successfully. Informativeness evaluated the depth and relevancy of the content, determining whether it provided useful insights or addressed critical industry needs. Engagement measured the content's capacity to capture and hold the reader's attention, whereas reach evaluated its ability to connect with a larger audience. Additionally,

essential and advanced grammatical difficulties were examined in order to retain professionalism and avoid errors. Unique and uncommon terms were evaluated to ensure vocabulary diversity and minimize repetitive wording. Sentence length based on word count was utilized to balance complexity and readability, while metrics such as accuracy, delivery issues, and clarity problems identified areas for improvement, ensuring the content was polished and ready for publishing.

Evaluation Tools and Data Analysis Methods: To analyze the quality and effectiveness of GenAI in content creation and improvement, this study integrated machine learning algorithms with expert comments in order to provide a fair and comprehensive evaluation. Grammarly was utilized as an automatic evaluation tool to assess important criteria such as readability, clarity, grammar, and overall correctness. Besides Grammarly, the expert feedback was also important in providing the human perspective. The content was assessed by the experts in relation to industry requirements, readers' interest and strategic objectives of the given goals. Their input enriched the analysis and made it more comprehensive to include both the technical accuracy and the context.

3.3 Research Purpose and Questions

The main purpose of this study was to investigate how effective and efficient the GPT4 and AviationGPT are in creating B2B content for the aviation MRO industry. The focus was on developing a strategy and a framework for collaboration between humans and AI in content creation by leveraging AI data processing capabilities alongside human creativity and emotional intelligence that highlight expertise, authority, trustworthiness, credibility, and leadership within the industry. By comparing AI-generated/enhanced and human-generated content on subjects this research desires to determine the performance indicators like content quality, innovation level, potential user feedback impact and

production efficiency. This study addresses two significant research questions to discover GenAI to modify content production techniques and improve corporate communication results in aviation MRO content marketing.

Research Question 1 (RQ1): What are the differences between AI-generated/enhanced and human-generated content in B2B settings in the aviation MRO industry regarding performance measures like accuracy, relevance, engagement, and alignment with company objectives?

Research Question 2 (RQ2): What is the most effective human-AI collaboration framework in content creation utilizing the strengths of each to enhance content quality and strategic influence?

3.4 Research Design and Methodology

This section presents the research logic, methods, and approaches used in this study, divided into five key concepts: research intention, research approach, research methodology, data sources, and statistical analysis techniques. All these elements together provide a solid and coherent approach to assess the efficiency of GenAI in content creation and to outline a detailed framework for the integration of human and AI collaboration (Barcik and Provodnikova, 2022; Silic, 2022).

3.4.1 Research Intentions

The study employs a combination of exploratory, descriptive, and explanatory intentions. Exploratory to investigate innovative approaches to AI-human collaboration, particularly in developing a framework that optimally integrates AI-generated and human-generated contributions. Descriptive to systematically document and analyze the performance of AI-generated, AI-enhanced, and human-generated content across multiple metrics. Explanatory to explain the relationships and differences between content types, using statistical methods to identify cause-and-effect dynamics.

3.4.2 Research Approach

The research approach is the logical structure of the study that shows how conclusions are made. This study was mainly deductive in its approach since it starts with hypotheses and theories about GenAI's function in content creation which are then analyzed with the data gathered. For instance, the study measures certain parameters including the readability, engagement and relevance of the AI generated, AI enhanced and human generated content.

3.4.3 Research Methodology

This study utilized a mixed-methodology, combining both qualitative and quantitative techniques in the holistic evaluation of effectiveness related to GenAI for content creation and in designing a robust human-AI collaboration framework. To collect the data, quantitative methods were used in measuring metrics like readability, grammatical accuracy, and engagement through Grammarly. At the same time, qualitative methods involved using experts feedback to evaluate the specific strategic and contextual characteristics of the content, emphasizing the role of qualitative parameters, including tone, target audience, and content depth. This way, the study provided a comprehensive analysis of the technical quality and contextual relevance by employing these approaches and creating practical recommendations for developing the theoretical and practical understanding of AI and human collaboration in the content creation processes.

3.4.4 Data Sources

Primary data collected for this study consists mainly of experts' judgments, surveys, and automated scoring using Grammarly. Secondary information obtained from the literature reviews was used to create the theoretical framework and identify the critical evaluation metrics.

3.4.5 Statistical Methods

Advanced statistical methods were used throughout the analyses, such as AHP (Analytic Hierarchy Process), ANOVA (Analysis of Variance), and Tukey's HSD (Honestly Significant Difference), thus allowing investigation into the details of the features of content quality in an organized manner (Basak and Saaty, 1993; Tsyganok, Kadenko and Andriichuk, 2012). AHP is beneficial in prioritizing and weighting the evaluation metrics, whereas ANOVA and Tukey's HSD provided detailed insights into the significant difference in performance by AI-generated, AI-enhanced, and human-generated content. Graphs and other charts were made via Python and Excel to clearly state the data. This ensures rigor and comprehensiveness in addressing the research objectives and providing actionable insights into the use of GenAI in content creation and its integration into human workflows through a blend of theoretical exploration and empirical validation.

3.5 Participant Selection

We selected the participants from backgrounds in the aviation MRO industry and marketing to thoroughly assess AI-generated content concepts. We included experts from a variety of fields such as audit expert, content marketing expert, copywriting expert, flight educator, flight engineer and SEO expert to ensure a comprehensive analysis. We used this approach to cover a range of viewpoints and make sure that the assessment considered the requirements and criteria of each position effectively. We benefited from their knowledge in their areas to receive insights that guaranteed the results were relevant and comprehensive, for use, in the aviation MRO industry sector.

3.6 Population and Sample

The population for this study was defined as the entire set of content ideas that GPT4 could potentially generate across all industries, topics, and content types. This

broad definition encompasses the full range of possibilities and capabilities that GPT4 has in content generation. During this study a particular group was selected to assess how appropriately GPT4 and AviationGPT responses were in a specialized area.

The sample in the first case study consists of 90 content ideas created with GPT4 and focused on the aviation MRO industry. The ideas were carefully evaluated to ensure they aligned with the study's objectives, assessing GPT4's ability to produce meaningful, industry-specific content ideas within a highly technical and specialized industry. For the second case study, the sampling procedure was designed as follows: A total of 60 short, informative articles were crafted by human copywriters, while another 60 articles were generated directly by GenAI using AviationGPT. Additionally, the 60 human-generated articles were refined and enhanced using AviationGPT, resulting in 180 samples distributed across three categories: human-generated, AI-generated, and AI-enhanced content. To ensure uniformity and comparability, a comprehensive content brief was provided to both the human copywriters and AviationGPT. This brief outlined critical elements such as the subject matter, target audience, content length, tone, and key points to cover, guaranteeing that all content met consistent standards and requirements. The content samples were meticulously evaluated using Grammarly, which offered quantitative assessments across key dimensions such as readability, clarity, grammatical accuracy, and sentence complexity. In parallel, six experts conducted qualitative evaluations, concentrating on critical metrics like engagement, relevance, informativeness, and alignment with industry requirements. This dual-layered evaluation approach provided a comprehensive and standardized analysis of content quality, ensuring an in-depth comparison across the three content generation methods.

In this study, we employed two different GenAI models: GPT4 for general idea processing and AviationGPT for specific content development. GPT4 was deliberately

chosen for content idea generation to make the brainstorming process more creative, innovative and generic before moving to more specific content creation. As a general-purpose AI, GPT4 has knowledge across many industries, so it can develop ideas beyond the topics specific to aviation. This keeps ideas broad and open, allowing more possibilities to be explored. For instance, GPT4 can come up with interdisciplinary ideas like sustainability aviation MRO, AI-based aircraft maintenance, blockchain in the aerospace supply chain, digital twins for predictive maintenance, and more recent technologies that have not yet been integrated into aviation. However, aviation-specific databases may have limited data on these emerging concepts, making it essential to first generate broad, cross-industry insights before leveraging AviationGPT for the content creation. This approach ensures that innovative ideas are not restricted by the existing scope of aviation data and can incorporate advancements from other industries.

3.7 Data Collection and Analysis Procedures

This section includes data collecting and analysis processes for case studies as well as the designing a human-AI collaboration framework in the subsections that follow.

3.7.1 Case Study 1: Content Idea Generation

This case study evaluated GPT4's ability as a GenAI to deliver accurate, high-quality content ideas for the aviation MRO sector.

3.7.1.1 Data Collection Procedures

The data collection process for the first case study involved three key steps: identifying the content types and evaluation criteria, generating content ideas, and scoring the AI-generated content ideas. Each of these steps is detailed in the sections that follow.

Selecting the Content Types and Evaluation Criteria (Step 1): Getting insight from the literatures, we collected most common content types and important evaluation factors then by consulting with some marketing and copywriter experts in aviation sector,

we identified three most effective content types for B2B content marketing in the aviation MRO industry. Following the insights, our top content types selected were “case studies,” “short informative articles,” and “white papers.” Also, we determined the “relevance to the industry,” “trendiness,” and “appropriateness for content type” as the top three most significant parameters to consider when developing content ideas and titles.

Generating Content Ideas Using GPT4 (Step 2): GPT4 was prompted to generate 90 unique content ideas with industry-related keywords. The process involved a series of structured steps to ensure the content ideas were appropriate, engaging, SEO-competitive, and unique.

Evaluation and Scoring of Content Ideas (Step 3): Six aviation MRO experts with different professional backgrounds evaluated and scored the generated content for each of the three content type categories on a scale of 1-5, and 5 being the highest score, considering three important criteria.

Industry Relevance: This criterion measured how closely the content idea aligns with the aviation MRO industry. The highest scores were given to ideas that incorporate key terms and focus specifically on the core aspects of MRO. A content idea received a score of 5 if it included highly relevant, niche industry terms that would strongly interact with the target audience.

Trendiness: This criterion assessed how new or trendy the content idea was in the industry. Content commanding the highest trendiness was characterized by keywords linked to new technologies, fresh industry initiatives, and top-of-mind topics. Trendy content raises the brand as an opinion leader within its industry.

Appropriateness for Content Type: This factor measured how appropriate the title was for the specific content type. For example, titles that contain “Advancements in” or “Comprehensive Guide to” or similar expressions work well for white papers, which

call for a more detailed, authoritative document. On the other hand, case study titles may use phrases such as “Implementation” or “Impact of,” representing a real-world application or deep-dive analysis of a specific instance. Short informative article headlines are like “Top 5 tips,” “How to,” or “Best practices,” which indicate that the content provides clear, actionable advice that is informative but quick to digest. Making sure the title suits the type of content sets the right expectation for the audience and makes the content being more efficient.

3.7.1.2 Data Analysis Procedures

In order to analyze the data, 90 content ideas generated by GPT4 for the aviation MRO industry were evaluated and ranked using the AHP approach to evaluate the effectiveness of using GenAI in content idea generation. AHP is an iterative method used in complex decision-making with multiple criteria and alternatives, which requires several structured steps to implement. Detailed AHP implementation steps for the content idea evaluation are as follows:

Create a Hierarchy and Criteria (Step1): Through the reviewing the recent literatures between 2022 and 2024, and expert consultation, we identified the most common content types and important evaluation criteria for B2B content marketing in the aviation MRO industry.

Pairwise Comparisons (Step2): The pairwise comparisons were conducted in the second stage of the AHP to prioritize the criteria previously defined in the first step. It compared each criterion to every other criterion to evaluate how important they were in reaching the overall aim of evaluating the content ideas. We compared relevance to industry, trendiness, and appropriateness for content type. We put this in a pairwise comparison matrix by giving numerical values to show how important one objective is compared to the other. This matrix transformed the qualitative response about the value

of each criterion to a quantitative format that we could then normalize and calculate the weights for all criteria. The normalization ensured that the comparisons were consistent and the sum of the weights equaled one. This weighting represented the importance of each criterion in the assessment, allowing for a fair and unbiased comparison of potential content ideas created by GenAI.

Consistency Check (Step3): The consistency check verified that the pairwise comparisons done in the 2nd step were consistent. Consistency in AHP means that the judgments are coherent and transitive. For example, if A is favored over B, and B is favored over C, then A should also be favored over C. In this test, we calculate the CI (Consistency Index) and CR (Consistency Ratio). The CI is based on the eigenvalues of the pairwise comparison matrix, while the CR evaluates how consistent this CI is with a Random Consistency Index (RI), which results from matrices of the same size but filled randomly. Generally, a CR of 0.1 (10%) or lower is acceptable, ensuring consistency among the judgments. However, if the CR is larger than this value, it implies there might be conflicts within the pairwise comparisons, requiring a review of the guidance process.

Synthesize Scores (Step4): In this step, we combined those ratings to measure the overall score for every content idea. For each potential piece of content, the scale values for “Relevance to Industry,” “Trendiness,” and “Appropriateness for Content Type” were multiplied by their respective weights. All the composite scores were combined to produce a single composite score for each content idea. This overall idea score was a composite of all the criteria and attempts to represent how effective the content idea was as a whole. This step ensured that the final assessment provided a fair and balanced view of how effective the GenAI was in generating high-quality, relevant content ideas for the aviation MRO industry.

Decision Making (Step5): Finally, based on the calculated scores in the previous step, we ranked the content ideas to determine the overall success of GPT4 in generating valuable and relevant content for the aviation MRO industry. This step involved not only recognizing the top-performing content ideas but also revealing the areas where GenAI excels or needs improvement. The insights gained from this decision-making process provided a comprehensive evaluation of GenAI's capabilities, guiding future enhancements and strategic decisions in content generation.

Figure 3.1 outlines the step-by-step process, from data collection to visualization of the results for the first case study.

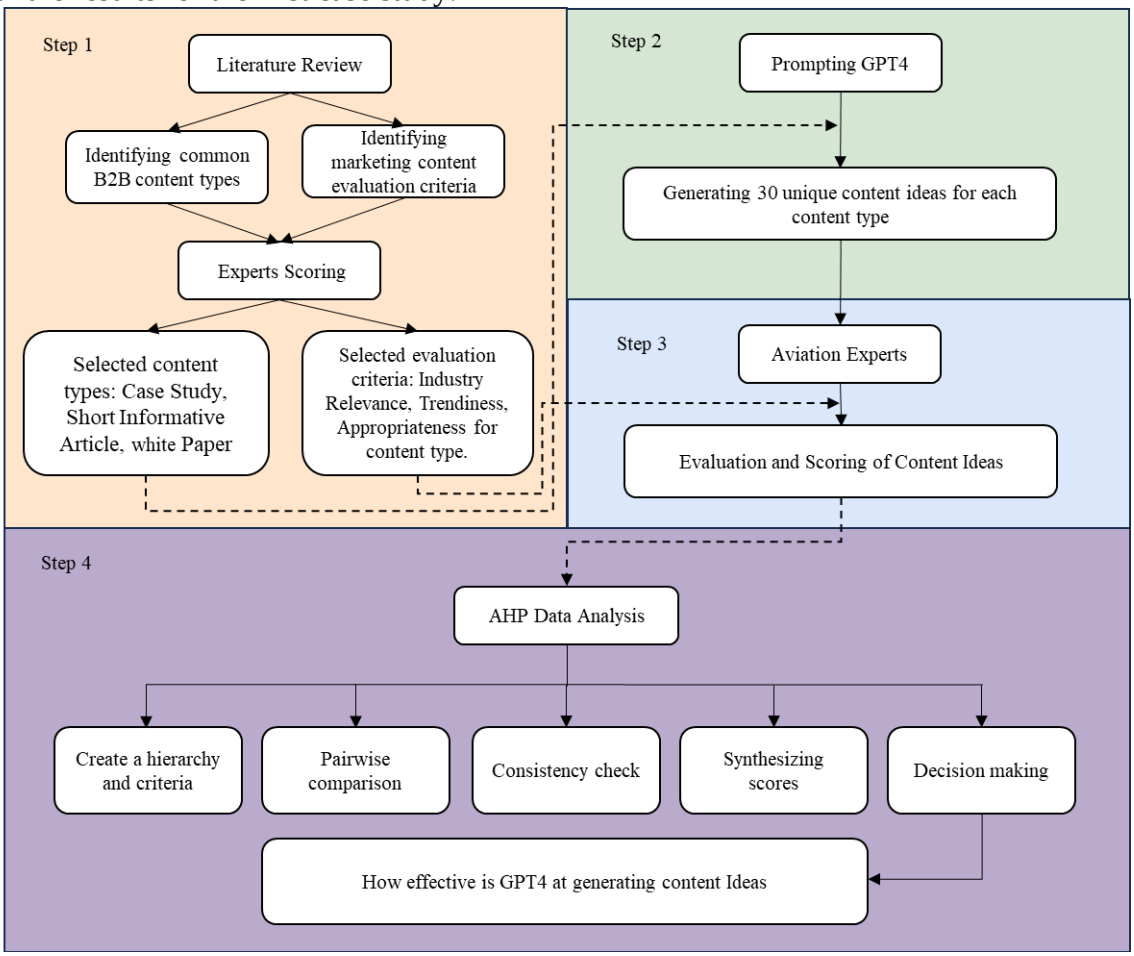

Figure 3.1
The Research Process for the First Case Study

In summary, this case study demonstrates a systematic and logical approach to assessing GPT4's output for creating high-quality content ideas for the aviation MRO industry. All the steps taken in the study, from incorporating expert insights, collecting the data in a structured manner, and using the AHP method for evaluating content relevance, trendiness, and appropriateness for different content types, were quite comprehensive.

3.7.2 Case Study 2: Content Generation and Editing

The second case study evaluated AviationGPT's ability to generate textual content based on a predesigned content creation brief and its capabilities to improve human-generated content. By comparing the AI-generated, human-generated, and AI-enhanced human-generated content using various evaluation criteria, valuable insights into the strengths and weaknesses of GenAI models in copywriting and content creation and improvement emerged, which helped shape approaches for designing a comprehensive AI and human collaboration framework to optimize content quality and productivity.

3.7.2.1 Data Collection Procedures

The data collection procedures for the second case study were designed to systematically assess the effectiveness of AviationGPT as a specific generative AI model in content creation and enhancement within the aviation MRO industry. The process began with the development of a detailed content brief to ensure consistency across all generated content. A professional human copywriter was tasked with creating a piece of content based on the brief. Simultaneously, AviationGPT was prompted to generate similar pieces of content using the same brief to maintain alignment in length, subject, and complexity. In the next step, AviationGPT was instructed to enhance the human-generated content, producing an AI-enhanced version. This process resulted in three

distinct versions for each content series: (1) AI-generated, (2) human-generated, and (3) AI-enhanced human-generated content. A total of 60 content series were created, yielding 180 samples for evaluation.

The evaluation phase was conducted using two distinct approaches. First, an automated evaluation was carried out using Grammarly, which assessed each content sample across several quantitative criteria: word count, critical and advanced issues, percentages of unique and rare words, sentence length, clarity issues, delivery issues, correctness issues, and an overall performance score summarizing these aspects. Second, a qualitative evaluation was performed by six experts from diverse professional backgrounds, who assessed the content based on its readability, clarity, informativeness, engagement, reach, and an overall total score reflecting the cumulative performance. These dual evaluation methods ensured a comprehensive assessment of the quality, coherence, and impact of the content, providing robust insights into the capabilities of AviationGPT in generating and enhancing content for the aviation MRO industry. At the end of data collection, we were able to gather three datasets. The first dataset was the Grammarly scores which included 180 data items. The second dataset was the human expert's evaluation which also had 180 data points. For this dataset, each content piece was evaluated by six experts, and the average of the scores given by these experts was taken as the final scores for each criterion. The third dataset brought together the overall Grammarly scores and the averaged overall expert scores. This dataset also included a calculated final score, which combined the overall scores from Grammarly and the human evaluations. These three datasets offered a solid base for a detailed and rigorous comparison of the AI-generated, human-generated, and AI-enhanced human-generated content.

3.7.2.2 Data Analysis Procedures

The data analysis procedures were developed in a way to help measure and understand the performance of AI-generated, AI-enhanced, and Human-generated content. Thus, both quantitative and qualitative research strategies were used to capture the advantages and limitations of the approach to content generation. The process included descriptive analysis, statistical testing, and calculation of effect sizes, so the findings were as exhaustive as possible.

Descriptive Statistics: In the first step, the descriptive statistics for each dataset was calculated. Key measures such as mean, median, standard deviation, and range were used to identify trends and performance patterns. The analysis found that AI-H produced the best results in terms of the average scores that it got on several metrics wherein it did best in the clarity and overall performance sub-scores. The AI came in second with slightly lower but equally constant scores. While producing H content, the lowest scores were observed and the scores were also fluctuating to the most significant extent.

ANOVA and Post-Hoc Analysis with Tukey's HSD: In order to evaluate the differences in performance among content generation methods, and to determine whether observed performance disparities were statistically significant or merely due to chance, ANOVA test was conducted. The findings indicated significant differences across all metrics ($p < 0.001$), demonstrating that the method of content generation had a meaningful impact on performance. To identify the sources of these differences, a follow-up Tukey's HSD test was conducted. This post-hoc analysis is particularly effective for studies involving multiple group comparisons, as it highlights which specific groups differ and adjusts for potential errors arising from multiple comparisons. The test results showed that both AI and AI-H content outperformed H content significantly across all key metrics. However, the difference was not statistically significant for AI and AI-H content, which means that the quality of both methods was similar to each other.

Therefore, this combined approach of ANOVA and Tukey's HSD offered a systematic and accurate comparison of the performance of the different groups.

Effect Size Analysis: The analysis also focused on the practical importance of the differences in content generation methods using effect size metrics for the key findings. Eta-squared (η^2) was used to determine how much of the variance in overall scores could be explained by the chosen method, and it was seen that more than 50% of this variance was caused by the content creation method. While Cohen's d measured the relative differences in means between each of the groups, namely AI vs human, AI vs AI-enhanced human, and AI-enhanced human vs human. The findings also revealed large effect sizes for all the comparisons made between AI based methods and human based method. These findings highlight the significant differences that can be made in content creation when AI is implemented in the content creation process as AI driven and AI assisted approaches consistently produced better results than the human alone.

Results Presentation and Visualization: The results were presented with a focus on clarity and accessibility, catering to a diverse audience. To achieve this, a combination of visual aids and detailed tables was employed to highlight the key findings effectively. Boxplots provided a clear visualization of score distributions and variability among the three content groups, showcasing the consistency of AI-generated content compared to the wider variability seen in human-generated content. Complementing this, summary tables outlined descriptive statistics, ANOVA results, and Tukey's HSD comparisons, systematically illustrating the performance metrics across groups. This well-structured presentation made it easier to grasp the nuanced differences between content generation methods, highlighting the distinct strengths and areas for improvement within each approach.

Figure 3.2 displays the mind map for the second case study data analysis.

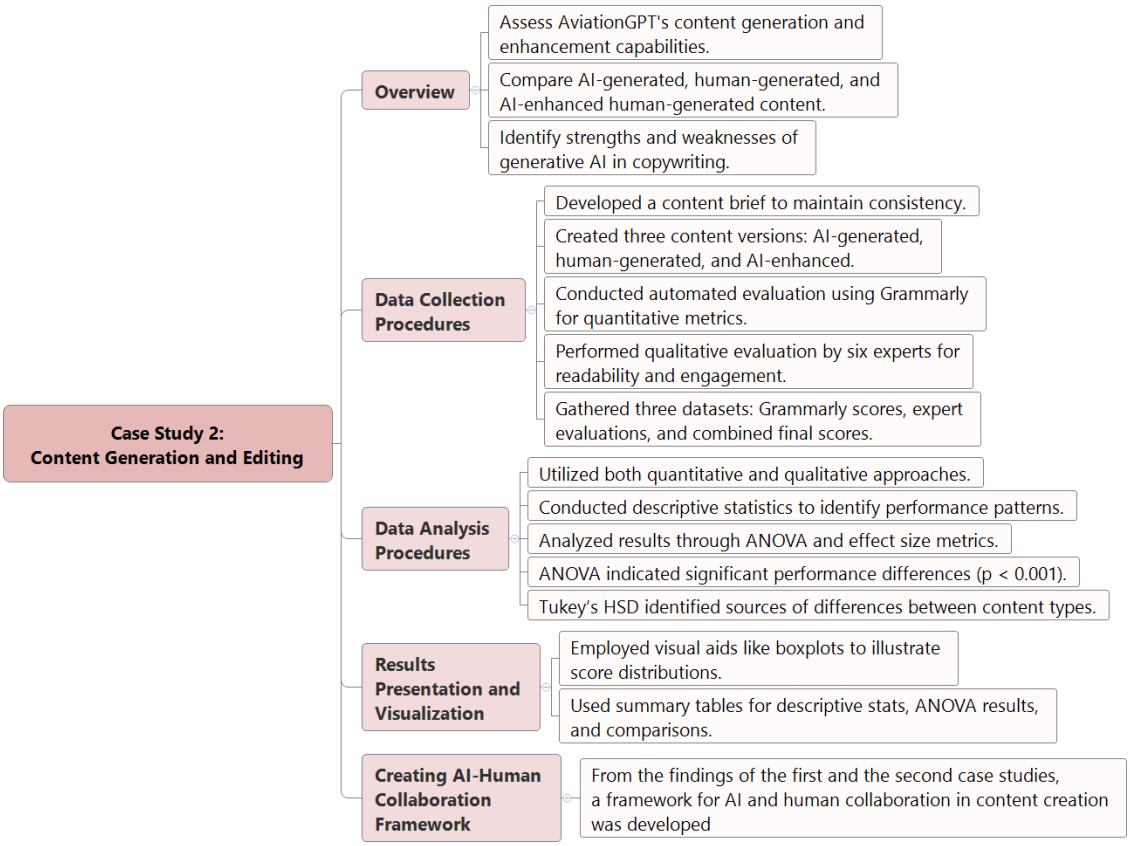

Figure 3.2
Second Case Study Data Collecting and Analysis

In conclusion, the data analysis techniques used in this case study have been chosen in order to help the research provide a rich and detailed examination of the performance differences between the different content generation methods. Through the use of descriptive statistics, parametric tests and effect size measures, the approach taken was both robust and sensitive in the analysis of the data. All of these methodologies have been enhanced with clear and understandable graphics to stress the role of a proper analysis in the process of finding essential information. The detailed findings of this analysis are reported in Chapter 4, thus providing a platform for the discussion.

3.7.3 Designing an AI-Human Collaboration

Building on the insights gained from the first and the second case studies, a framework for AI and human collaboration in content creation was developed. This framework capitalizes on the strengths of AI in terms of accuracy and efficiency as well as the strengths of humans in terms of creativity and context-specific knowledge to improve efficiency as well as quality of output. In this way, the framework seeks to harmonize the strengths of both for the purpose of improving the content generation process in a way that will meet the needs of the industry and be relevant, unique, and interesting. The specifics of this framework and how it can be put into practice are outlined in the following chapters.

3.8 Research Design Limitations

During this study assessing how well GPT4 can come up with content concepts and evaluating the effectiveness of AviationGPT in creating the textual content, for the aviation MRO field we faced with several limitations, but some strategic solutions were implemented to mitigate their impact, ensuring the reliability and relevance of our findings.

3.8.1 Small Size of the Expert Group

The most critical challenge we encountered was the small size of our expert group responsible for evaluation. We had six members in total due to the specialized nature of the aviation MRO sector, which posed challenges in finding more qualified individuals to join us. In response to this constraint, we broadened our assessment by creating a total of 180 ideas for content spread across three types.

3.8.2 Subjectivity in Expert Evaluations

Another challenge we faced was the nature of expert assessments. Biases and professional experiences could impact how AI-generated content ideas were rated. To tackle this issue effectively and ensure an evaluation process, for all ideas presented we

implemented the AHP method, it's pairwise comparisons and consistency checks helped reduce individual bias and ensured that judgments were coherent across the board.

3.8.3 Time-Sensitive Nature of Trendiness

Trendiness as a measure of evaluation presented a difficulty because of its changing nature in the aviation MRO sector, where trends evolve swiftly. Addressing this challenge involved selecting experts deeply engaged in the industry to provide assessments that capture the most up-to-date trends.

3.8.4 Narrow Focus on Evaluation Criteria

We focused on three main criteria, industry relevance, trendiness, and appropriateness for content type, while leaving out other factors like creativity or long-term strategic alignment. Although this was a limitation, it also served as a strength by streamlining the evaluation process and allowing us to concentrate on the most critical aspects of B2B content marketing for aviation MRO.

3.8.5 Initial Doubt Towards Content Created by AI

Initial doubts were raised by experts regarding content produced by AI in an industry that greatly values data and safety. To address this and guarantee evaluations, we decided not to reveal whether the content came from AI or humans to maintain fairness in assessments. Experts could then evaluate the content based on its quality without any biases related to its source or creation process.

This ultimately helped to alleviate their skepticism, as the experts began to recognize AI's potential in producing valuable and relevant B2B content for the aviation MRO industry, regardless of whether it was purely AI-generated or AI-enhanced.

3.9 Ethical Assurance

This study's ethical considerations were crucial in ensuring the research was conducted with integrity, fairness, and transparency. All participants, including the

experts involved in the evaluations, were fully informed about the study's purpose, methods, and responsibilities before providing their consent to participate. To guarantee neutrality, the content was blindly evaluated, so the experts had no idea whether it was AI-generated, AI-enhanced, or created by humans.

Data privacy was carefully maintained, with all information securely stored and used strictly only for research purposes. The study also upheld academic integrity by properly citing sources and ensuring that the research framework and methodologies were original. Efforts to minimize biases, such as subjective opinions during expert evaluations, were addressed through structured methods like AHP and consistency checks. Finally, the study itself, we considered the broader impact of AI in content creation, emphasizing the importance of respecting intellectual property, fostering inclusivity, and avoiding bias. These efforts highlight our dedication to responsible, ethical research that can positively shape the future.

3.10 Conclusion

This chapter provided a detailed and structured roadmap for investigating the role of generative AI in B2B content marketing within the aviation MRO industry. By integrating theoretical constructs, evaluation metrics, and methodological rigor, the study ensures a robust framework for assessing AI's capabilities and its collaboration with human creativity. Through the two case studies, content ideation and content creation, the research not only evaluates GPT4 and AviationGPT's efficiency but also highlights the strengths of combining AI's data-driven precision with human expertise and emotional intelligence. The incorporation of tools like Grammarly and advanced statistical analyses such as AHP, ANOVA, and Tukey's HSD ensures both qualitative depth and quantitative rigor in evaluating content quality across various dimensions. The challenges faced, including expert group size, potential biases, and the dynamic nature of trendiness, were

addressed strategically to preserve the study's validity and reliability. This comprehensive methodology establishes a solid foundation for systematically exploring AI's potential in transforming content marketing practices and advancing collaborative frameworks that maximize the strengths of both AI and human contributors.

CHAPTER IV:

RESULTS

4.1 Research Questions

Research Question 1 (RQ1): What are the differences between AI-generated/enhanced and human-generated content in B2B settings in the aviation MRO industry regarding performance measures like accuracy, relevance, engagement, and alignment with company objectives?

Research Question 2 (RQ2): What is the most effective human-AI collaboration framework in content creation utilizing the strengths of each to enhance content quality and strategic influence?

4.2 Summary of Findings

This section summarizes the findings from three parts of the study, including two case studies and designing framework. The complete tables containing all data are available in Appendix C for further reference.

4.2.1 Case Study 1: Evaluating the GenAI on Content Ideation

In the first phase of the first case study through the literature review we identified seven common content types used in B2B sectors. Then through a survey we asked 38 experts in marketing and aviation industry to rank the identified content types and content evaluation criteria. The average score for each content type and evaluation criteria were calculated, which are displayed in Tables 4.1 and 4.2.

Table 4.1
Average Score for Content Types

Content type	**Average Score**
Short Articles	3.81
Case Studies	3.42
White Papers	3.31
Expert Interviews	3.28
News Updates	3.22

Infographics	3.03
Webinars/Podcasts	2.83

Table 4.2
Average Score for Evaluation Criteria

Evaluation Criteria	**Average Score**
Relevance	3.94
Appropriateness for content type	3.65
Trendiness	3.60
Conciseness	3.50
Uniqueness	3.34
Informational Value	3.31
Engagement Potential	3.28
Audience Reach	3.26
SEO Optimization	3.23
Clarity	3.11
Visual Appeal	3.07

Based on the findings, we continued to evaluate GPT4's capacity to generate content ideas using three evaluation criteria (Industry relevance, Appropriateness for content type, and Trendiness) for three content types (Short articles, Case studies, and White papers).

In the second phase of this case study, six experts evaluated each content idea on a 1-5 scale based on three selected criteria. Data from all experts were cleaned and combined in one table. All the text data were converted into lowercase letters, and duplicate titles were removed. The final clean dataset contains 486 records, including 168 data points for "case study" content type, 162 data points for "short informative article" content type, and 156 data points for "white paper" content type.

Mean scores from six experts for each content idea were calculated to determine how effective the content created by GPT4 was. This method provided a viewpoint by reducing biases and score differences, allowing us to assess how well AI-generated content idea corresponds more precisely with market standards and expectations.

The pairwise comparison matrix was designed, as shown in Table 4.3. Each criterion was compared against the others to determine its relative weight in the overall evaluation process. In the matrix, each cell represents a comparison between two criteria, with a value indicating the relative importance of one criterion over the other. For instance, relevance to industry was considered equally important as trendiness and appropriateness for content type, hence the value "1" in the corresponding cells. However, when comparing trendiness to appropriateness for content type, trendiness was deemed slightly less critical, as reflected by the value "0.5" in the matrix. This indicates that while trendiness was important, it was considered slightly less essential than ensuring the content was appropriate for its type.

Table 4.3

Pairwise Comparison Matrix

	Relevance to Industry	**Trendiness**	**Appropriateness for Content Type**
Relevance to Industry	1	1	1
Trendiness	1	1	0.5
Appropriateness for Content Type	1	2	1

We divided each element by its column sum and created a normalized comparison matrix to ensure consistency in our assessments. The priority vector, calculated from the average of each row in the matrix, shows the importance of each criterion, industry relevance (0.328), trendiness (0.261), and appropriateness for content type (0.411). This methodical approach established a measurable way to evaluate the quality and appropriateness of content ideas within an industry context. Tables 4.4 and 4.5 display the normalized pairwise comparison matrix and priority vector.

Table 4.4

Normalized Pairwise Comparison Matrix

	Relevance to Industry	**Trendiness**	**Appropriateness for Content Type**
Relevance to Industry	0.333	0.25	0.4

Trendiness	0.333	0.25	0.2
Appropriateness for Content Type	0.333	0.5	0.4

Table 4.5
Priority Vector

Criterion	Priority Vector
Relevance to Industry	**0.328**
Trendiness	**0.261**
Appropriateness for Content Type	**0.411**

The consistency check step calculated a Consistency Index (CI) and its Consistency Ratio (CR) to verify our pairwise comparisons. Our calculation results (CI= 0.02681078793948588, CR= 0.04622549644738945) showed a CR below the acceptable threshold of 0.1, indicating that the pairwise comparisons were consistent. This consistency confirmed that the weights assigned to the criteria accurately represented their relative importance, thereby ensuring the credibility of our evaluation results.

Then, we calculated the final scores for each content idea by using weights for all evaluation criteria. A singular score for each content idea was calculated by multiplying the average scores for industry relevance, trendiness, and appropriateness for content type by their respective weights and summing them up. These scores provide insight into the quality of each concept. Subsequently, we documented these scores.

In the decision-making process, we evaluated the efficiency of each content idea by dividing the weighted scores by the highest potential score of 5 and multiplying by 100. This percentage serves as an indicator of the quality of each content idea. We grouped these effectiveness percentages based on content categories to determine which types generally performed better. We found that white papers had the highest effectiveness, followed by short informative articles and case studies.

Table 4.6 shows the final results of evaluating the effectiveness of GPT4 in generating content Ideas.

Table 4.6
Effectiveness of GPT4 in Generating Content Ideas for Three Content Types

Content Type	Effectiveness (%)
case study	86.878
short informative article	90.441
white paper	93.127

This analysis highlights the strengths of the GPT4 as a GenAI in generating highly relevant content ideas for the aviation MRO industry.

In the bar graph shown in Figure 4.1 the strengths and weaknesses of GenAI, in coming up with content ideas, for the aviation MRO sector were illustrated, and the complete results of this case study are presented in ApendixD.

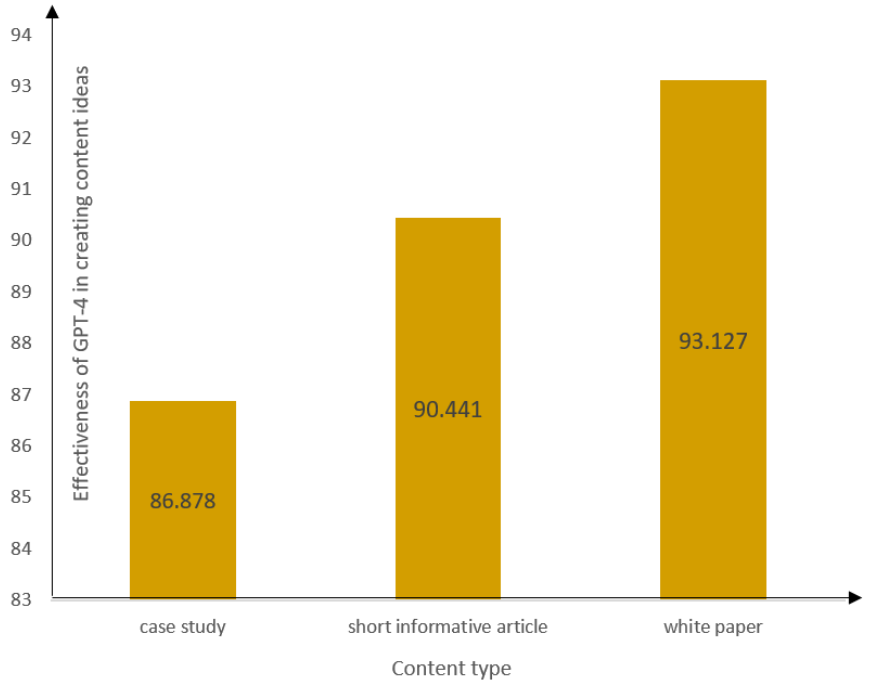

Figure 4.1
Effectiveness of GPT4 in Generation Content Ideas by Content Type

4.2.2 Case Study 2: Evaluating the AviationGPT in Copywriting

The second case study was designed to evaluate AviationGPT in writing textual content. The following sections summarize the data analysis results for all evaluation

approaches, including automated assessment via Grammarly scores, human assessment by Experts, and the Overall scores dataset containing all overall scores.

4.2.2.1 Analyzing the Grammarly Scores

This section explores the quality of content created through three different methods using the Grammarly platform. The analysis provides a deeper understanding of how these approaches perform by examining key factors such as readability, grammar, communication effectiveness, vocabulary diversity, and complexity. Using Grammarly scores, statistical tests like ANOVA, and visual tools, the study focuses on six important metrics: overall quality score, clarity (how easy the content is to read), delivery (how effectively the message is communicated), correctness (accuracy in grammar and syntax), vocabulary richness (unique word usage), and sentence complexity (measured by sentence length). This evaluation offers valuable insights into the strengths and weaknesses of each approach.

Table 4.7 displays the descriptive statistics for selected Grammarly metrics.

Table 4.7

Descriptive Statistics for Grammarly Scores

AI-Generated (AI)	**Overall Score**		**Clarity Issues**		**Delivery Issues**	
	mean	**std**	**mean**	**std**	**mean**	**std**
	86.917	3.490	28.767	12.165	3.833	3.669
	Correctness Issues		**Unique Words (%)**		**Sentence Length (words)**	
	mean	**std**	**mean**	**std**	**mean**	**std**
	2.817	2.460	34.783	6.378	16.077	1.782
AI-Enhanced (AI-H)	**Overall Score**		**Clarity Issues**		**Delivery Issues**	
	mean	**std**	**mean**	**std**	**mean**	**std**
	87.933	3.940	21.667	8.426	3.833	6.997
	Correctness Issues		**Unique Words (%)**		**Sentence Length (words)**	
	mean	**std**	**mean**	**std**	**mean**	**std**
	2.717	1.678	39.317	6.508	15.800	2.294
Human-Generated (H)	**Overall Score**		**Clarity Issues**		**Delivery Issues**	
	mean	**std**	**mean**	**std**	**mean**	**std**
	80.300	5.060	29.217	14.401	8.733	9.586

	Correctness Issues		Unique Words (%)		Sentence Length (words)	
	mean	**std**	**mean**	**std**	**mean**	**std**
	18.200	12.034	38.150	5.602	22.985	8.893

The results show that AI-enhanced content performed the best overall, with an impressive average score of 87.933, slightly ahead of AI-generated content, which scored 86.917. In contrast, Human-generated content scored much lower, with an average of 80.300, reflecting a clear gap in quality. Additionally, human content was the most inconsistent, with a standard deviation of 5.060, while AI content proved to be the most consistent, with a smaller variation of 3.490.

The charts in Figure 4.2 show the distribution of Grammarly total scores across AI, AI-H, and H content.

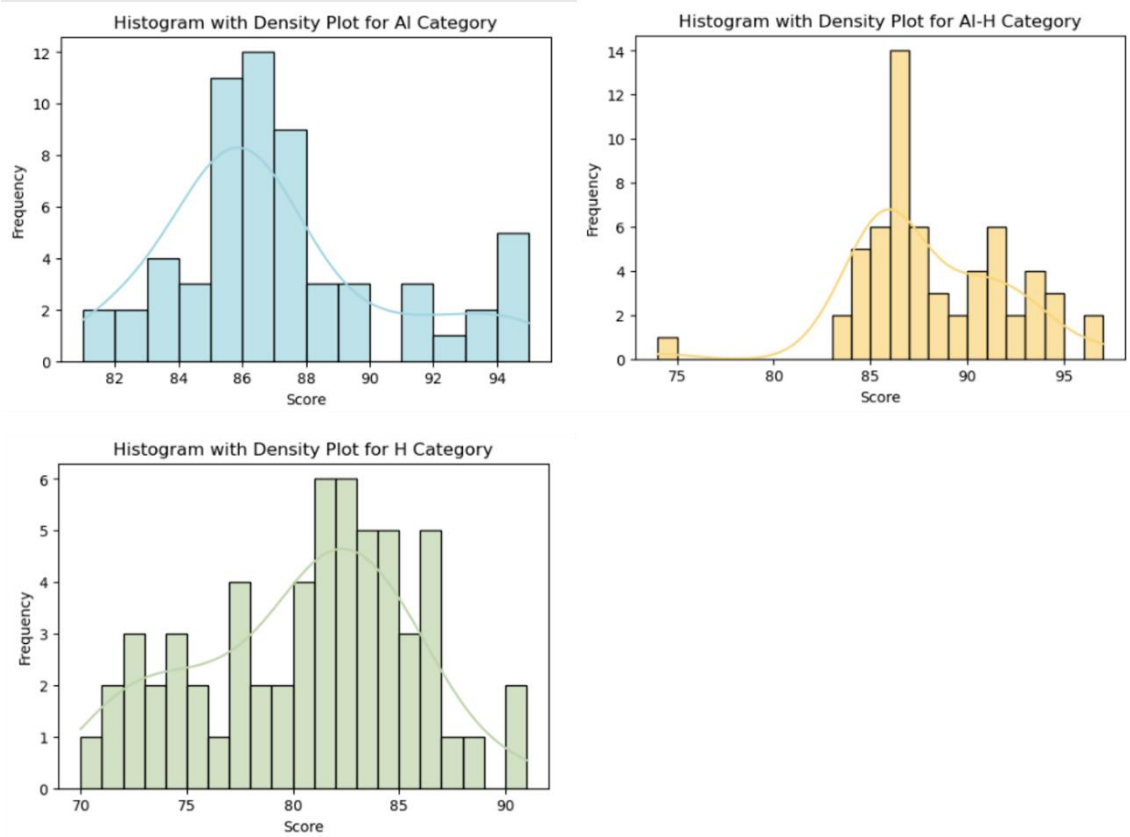

Figure 4.2
Histogram with a Density Plot of Grammarly Overall Scores for AI, AI-H and H Categories

The blue chart focuses on the AI-generated content, the histogram of the AI category shows that the distribution is rather compact and most of the scores are situated somewhere in the mid-80s to low-90s. The density curve is also smooth and unimodal, which means that AI-generated content produces fairly consistent scores with low variation. There are no extreme outliers which means that the AI has a stable performance level across different documents and thus is reliable in achieving high grammatical and structural accuracy.

The orange chart shows the score distribution for AI-enhanced human-generated content (AI-H), which is a hybrid category that incorporates both AI assistance and human intervention. The histogram shows a similar peak to the AI category around the mid-80s to high-80s, but with a slightly narrower distribution. The density plot shows a more precise distribution with less extreme variations, which means that the quality of the AI-H content is always very high with less chances of extreme fluctuations.

The green chart shows the score distribution for human-written content (H), and it has a clearly wider and more diverse range of scores. It can be clearly seen that scores are, ranging from the low 70s to the mid-80s. The density curve looks like a more irregular and less predictable one, which means that human-written content is more likely to vary in quality. The presence of a longer tail towards the low scores means that some of the human-written documents are quite poor, which could be due to problems in the style of writing, grammatical mistakes, or the influence of a writer's physical and emotional state.

Evaluating the three distributions, content created by AI (blue) and human content enhanced by AI (orange) have higher and more consistent scores than human-generated content (green). AI-generated text is the least volatile, lying for the most part between mid-80s and low-90s, which guarantees good grammatical and structural

integrity. The same applies to AI-H but with a slight improvement due to the human touch which makes it a bit more volatile. On the other hand, human-generated content (H) has a more dispersed scores where some documents are good but others are as low as 70. The long tail to the left indicates that some of the human-generated documents have structural and grammatical errors or were written by a fatigued and emotionally charged author. Therefore, it can be concluded that AI support may be useful for improving the overall level of writing and making it more consistent.

Looking at other metrics, AI-H stood out in clarity, with the fewest clarity issues (21.667 on average), making it more readable than both AI (28.767) and human content (29.217). In terms of delivery, AI and AI-H were similar, with an average of 3.833 delivery issues, while human content faced significantly more challenges, with an average of 8.733. AI-H and AI also led in correctness, showing far fewer grammar errors (2.717 and 2.817, respectively) compared to human content, which had an average of 18.200 issues. When it came to vocabulary diversity, AI-H once again excelled, achieving the highest percentage of unique words (39.317), and it balanced readability with concise sentence lengths (15.800 words on average). These results highlight AI-H as the most consistent and well-rounded option for producing high-quality, engaging, and error-free content.

As shown in Table 4.8, the ANOVA results reveal clear and significant differences between the three content groups, AI-generated, Human-generated, and AI-enhanced, across all the metrics evaluated. The high F-statistic values and extremely low p-values (all well below 0.05) confirm that these differences are statistically significant, meaning the variations in performance among the groups are not due to chance.

The F-statistic in ANOVA is a ratio that assists us in determining if the variations observed between the group means are significant or merely the outcome of

chance. This is done by examining two types of variances. The first one is the variance between the group means and the second one is the variance within the groups. If the F-value is high, it implies that the variations between the means of the groups are much higher than the variations observed within the groups. This may be because the groups are actually different and the differences not an off-shoot of chance (Stoker, Tian and Kim, 2020). Similarly, the p-value in ANOVA is used to determine the probability of the differences between group means just being due to chance. The p-value allows us to determine whether or not the differences group between means are significant. For instance, if the p-value is 0.05 or smaller, then it can be said that the probability of the differences occurring by chance is very low. In other words, a small p-value indicates that at least one group is different from the other groups, whereas a large p-value indicates that the differences are probably spurious (Stoker, Tian and Kim, 2020).

Table 4.8

ANOVA Test Results for Grammarly Scores

	F-statistic	**p-value**
Overall Score	58.01570259	4.20465E-20
Clarity Issues	7.571818137	0.000699411
Delivery Issues	9.33563991	0.000139794
Correctness Issues	93.00021875	2.47657E-28
Unique Words (%)	8.71696017	0.000245081
Sentence Length (words)	34.07919585	3.01714E-13

After the ANOVA test confirmed significant differences between the groups, we conducted Tukey's HSD test to pinpoint which specific groups, AI, AI-H, and H content, differed in their mean scores. This test was well-suited to our data because it allows for accurate pairwise comparisons while controlling for potential errors when analyzing multiple groups. The results in Table 4.9 show that AI-H performed significantly better than Human-generated content, with a significant mean difference of -7.633 ($p < 0.001$), making it clear that this difference is not due to chance. Similarly, AI also outperformed

human-generated content, with a mean difference of -6.616 ($p < 0.001$), further emphasizing the gap in quality between AI-based methods and human-generated content. However, there was no significant difference between AI and AI-H (mean difference of 1.016, $p = 0.385$), suggesting that their performance is pretty similar. These results highlight the clear advantage of AI-based methods, with AI-H slightly leading in overall performance. Grammarly scores and analyzing Python code of this score can be found in Appendix C.

Table 4.9

Tukey's HSD Results for Overall Scores of Grammarly

Group1	Group2	Meandiff	p-adj	Lower	Upper	Reject
AI	AI-H	1.0167	0.3854	-0.8023	2.8357	FALSE
AI	H	-6.6167	p < 0.001	-8.4357	-4.7977	TRUE
AI-H	H	-7.6333	p < 0.001	-9.4523	-5.8143	TRUE

4.2.2.2 Analyzing the Experts' Scores

This section highlights the findings from the expert evaluation, where key metrics such as readability, clarity, informativeness, engagement, and reach were assessed. The scores, carefully averaged from the assessment of six expert raters, offer a well-rounded and human-centered perspective on content quality. The analysis began with a thorough review of the dataset to ensure it was complete and well-structured, confirming that all expert scores were intact. Next, the content was categorized into three groups: AI-generated, AI-enhanced, and human-generated. Then, the descriptive statistics were calculated and summarized in Table 4.10.

Table 4.10

Descriptive Statistics for Expert Scores

AI	**Readability**			**Clarity**			**Informativeness**		
	mean	**std**	**count**	**mean**	**std**	**count**	**mean**	**std**	**count**
	8.770	0.322	60.000	9.032	0.169	60.000	9.277	0.156	60.000
	Engagement			**Reach**			**Total Score**		
	mean	**std**	**count**	**mean**	**std**	**count**	**mean**	**std**	**count**
	8.605	0.312	60.000	8.702	0.249	60.000	44.428	0.853	60.000
AI-H	**Readability**			**Clarity**			**Informativeness**		

	mean	**std**	**count**	**mean**	**std**	**count**	**mean**	**std**	**count**
	8.183	0.268	60.000	8.453	0.375	60.000	8.598	0.452	60.000
	Engagement			**Reach**			**Total Score**		
	mean	**std**	**count**	**mean**	**std**	**count**	**mean**	**std**	**count**
	8.043	0.533	60.000	8.110	0.333	60.000	41.248	2.057	60.000
H	**Readability**			**Clarity**			**Informativeness**		
	mean	**std**	**count**	**mean**	**std**	**count**	**mean**	**std**	**count**
	7.698	0.626	60.000	7.843	0.792	60.000	8.053	0.821	60.000
	Engagement			**Reach**			**Total Score**		
	mean	**std**	**count**	**mean**	**std**	**count**	**mean**	**std**	**count**
	7.585	0.975	60.000	7.523	0.706	60.000	38.568	3.982	60.000

The results show that AI-generated content stood out, scoring the highest across most metrics. It excelled particularly in readability (average score of 8.770) and total score (an impressive 44.428 out of 50). On the other hand, human-generated content scored the lowest, with metrics like total score averaging 38.568. AI-enhanced content bridged the gap, with total score reaching 41.248, demonstrating the potential of AI collaboration. As shown in Table 4.11, the analysis revealed significant differences across all the evaluated metrics, with ANOVA tests showing p-values below 0.001 for every category, which underscores the notable variations between groups.

Table 4.11

ANOVA Test Result for Expert Scores

	F-statistic	**p-value**
Readability	91.2958183	5.70803E-28
Clarity	79.81247451	1.9642E-25
Informativeness	74.94497728	2.63691E-24
Engagement	35.2490091	1.30178E-13
Reach	93.01791519	2.4553E-28
Total Score	74.40711921	3.53007E-24

After performing the ANOVA test and confirming significant differences between the groups, we used Tukey's HSD test to explore where these differences lie. The results displayed in Table 4.12 clearly show how the three groups compare.

The scores for AI-generated content were notably higher than those for AI-enhanced content, with a mean difference of -0.5867 ($p < 0.001$). This shows that while AI-enhanced content improves upon human efforts, it still doesn't quite reach the level of fully AI-created work. The difference between AI and human-generated content was even larger, with a mean difference of -1.07 ($p < 0.001$), highlighting that AI content consistently outshines human-created material. On the other hand, AI-enhanced content significantly outperformed human-generated content, with a mean difference of -0.485 ($p < 0.001$), showing how AI tools can help elevate human writing to a higher standard.

These results highlight the value AI brings not just as a creator but also as a collaborator, helping to bridge the gap between human effort and AI's full potential.

Table 4.12

Tukey's HSD Test for Expert Scores

Group1	**Group2**	**Meandiff**	**p-adj**	**Lower**	**Upper**	**Reject**
AI	AI-H	-0.5867	0	-0.7744	-0.3989	TRUE
AI	H	-1.0717	0	-1.2594	-0.8839	TRUE
AI-H	H	-0.485	0	-0.6727	-0.2973	TRUE

Figure 4.3 presents a boxplot that gives a direct comparison of the expert total scores for the three groups: AI, AI-H and H. The AI-generated group has the highest median score of 44.2 and a narrow interquartile range, which shows low performance variability and consistency. It also has some high performing outliers which show that it has the potential of producing excellent output. The AI-H group that is a combination of best practices refined by AI and human intelligence sits between the AI and H groups with a median score of 41.3 and a more spread out score distribution indicating reasonable performance variability. Last is the human-generated content (H) which has the lowest median score of 40.7 and the highest range of scores, with scores as low as 30.5 and as high as 42.7. This group has the most variability indicating some challenges in ensuring that the output is consistent without the help of AI. The boxplot therefore

confirms that AI is capable of producing quality outputs consistently, AI-H provides some form of balance between the two in terms of consistency and creativity, while the human-generated content is more variable in quality.

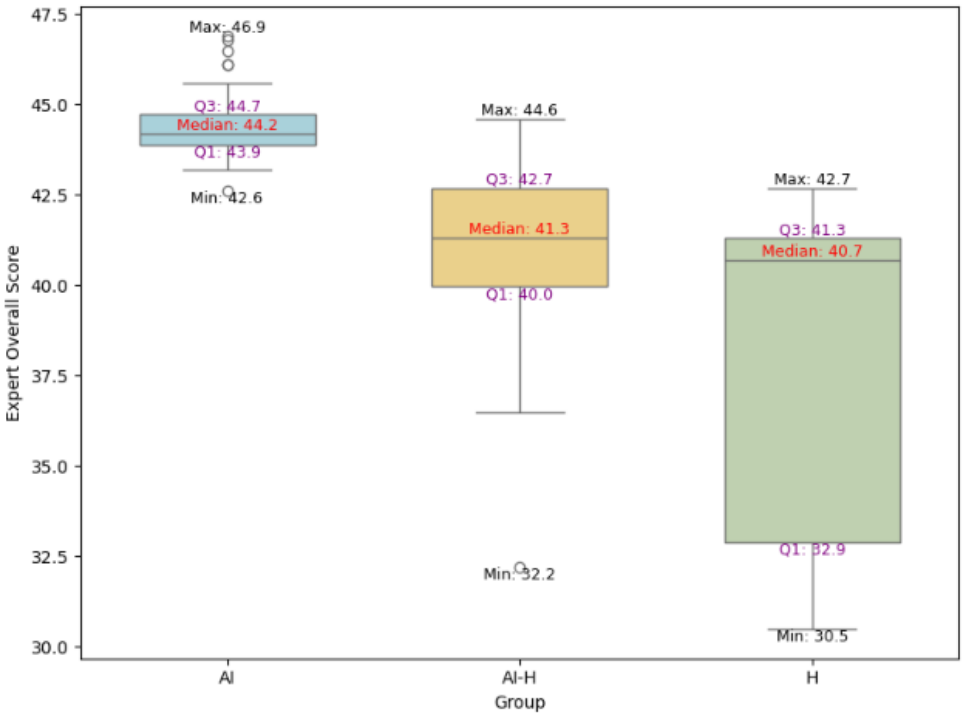

Figure 4.3
Boxplot for Expert Overall Scores

4.2.2.3 Analyzing the Overall Scores

This section provides a detailed analysis of the Overall scores for three content generation methods: AI-generated, AI-enhanced, and human-generated. The analysis is structured into three parts: descriptive statistics, ANOVA with Tukey's HSD, and effect size analysis, providing both statistical and practical insights into the performance differences.

Descriptive Statistics Analysis: In the first part, we calculated the descriptive statistics of the three content generation categories. As shown in Table 4.13, the AI-

generated group had the highest mean score of 131.345 with the lowest standard deviation of 3.582, which shows that it is highly performing. Then the AI-H category had a mean score of 129.182 and standard deviation (SD = 4.514), and finally, the human-generated category had the lowest mean score of 118.868 and the highest standard deviation of 7.065 which indicates low performance and high unreliability. These results show that AI and AI-H categories outperform human-generated category in terms of overall performance and consistency.

Table 4.13

Descriptive Statistics for Overall Scores

	Grammarly Overall Score (100)			**Expert Overall Score (50)**			**Total Evaluation Score (150)**		
	mean	**median**	**std**	**mean**	**median**	**std**	**mean**	**median**	**std**
Category									
AI	86.917	86.000	3.490	44.428	44.200	0.853	131.345	130.550	3.582
AI-H	87.933	87.000	3.940	41.248	41.300	2.057	129.182	128.850	4.514
H	80.300	81.000	5.060	38.568	40.700	3.982	118.868	120.950	7.065

Figure 4.4 displays a grouped bar chart with error bars for the descriptive statistics of total evaluation scores.

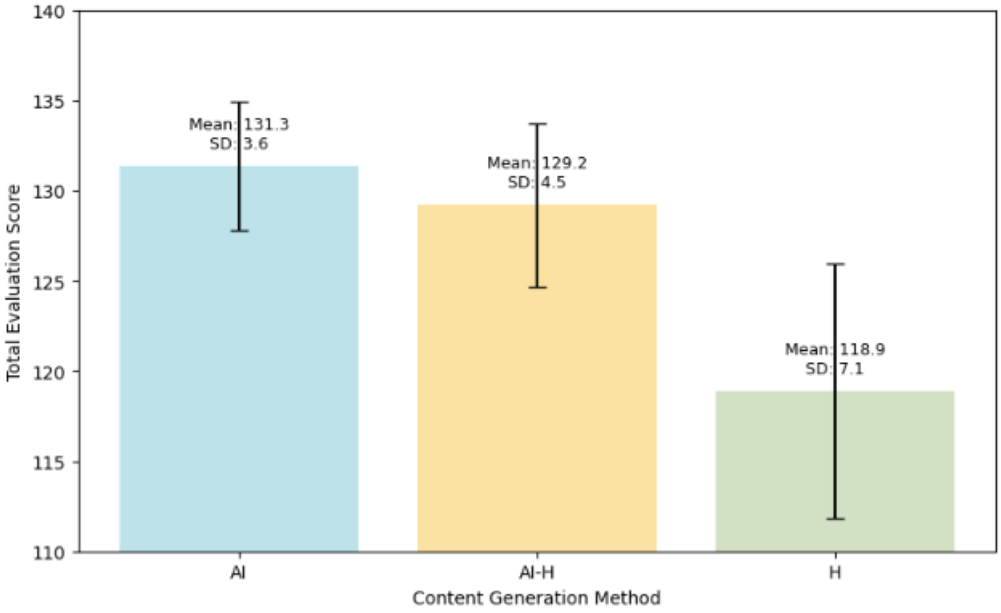

Figure 4.4
Grouped Bar Chart with Error Bars for the Descriptive Statistics of Total Evaluation Scores

ANOVA and Tukey's HSD Test: ANOVA results in Tables 4.14a and 4.14b indicate a significant difference in overall scores among the three categories, indicating that the method of content generation has a strong impact on performance. Tukey's HSD post-hoc analysis revealed significant differences between AI and H and AI-H and H ($p<0.001$), with both AI and AI-H significantly outperforming H. However, the difference between AI and AI-H was not statistically significant ($p=0.0656$), suggesting comparable performance between these two methods. These results confirm the superiority of AI and AI-H over H but do not strongly distinguish between AI and AI-H.

Table 4.14a
ANOVA Test Result for Overall Scores

	F-Stat	**P-Value**
Grammarly Overall Score (100)	58.01570259	4.20465E-20
Expert Overall Score (50)	74.40711921	3.53007E-24
Total Evaluation Score (150)	96.24848556	5.15313E-29

Table 4.14b
Tukey's HSD Test for Total Scores

Group1	**Group2**	**Meandiff**	**p-adj**	**Lower**	**Upper**	**Reject**
AI	AI-H	-2.1633	0.0656	-4.435	0.1083	FALSE
AI	H	-12.4767	p<0.001	-14.7483	-10.205	TRUE
AI-H	H	-10.3133	p<0.001	-12.585	-8.0417	TRUE

Effect Size Analysis: Effect size metrics are calculated to understand the magnitude of the obtained differences. As it is shown in Table 4.15a, the $\eta^2 = 0.521$ ($\eta^2 > 0.1$) indicates that the independent variable "content generation method" has a significant impact on the dependent variable "overall scores" (Richardson, 2011). Based on our results, the content generation method explains 52.1% of the variance in Overall Scores, representing a large effect size that can be classified as a significant effect.

Then we calculated Cohen's d, a measure of effect size that quantifies the standardized mean difference between two groups and evaluates how different one group

is from another in terms of their mean scores relative to the variability within the groups (Richardson, 2011). Table 4.15b displayed the Pairwise Cohen's d values. The d = 2.227 (d > 0.8) highlights the most substantial contrast between AI and H. d=1.740 (d > 0.8) for AI-H vs H also indicates large difference. The comparison between AI and AI-H yielded a medium effect size (d=0.531d), suggesting some performance differences, albeit less pronounced. These results emphasize the practical significance of using AI or AI-H over H for higher-quality content.

Table 4.15a

Eta-Squared of Effect Size Analysis

Metric	**Value**
Eta-Squared (η^2)	0.52097

Table 4.15b

Pairwise Cohen's d Values

Comparison	**Cohen's d**
AI vs AI-H	0.5309
AI vs H	2.2274
AI-H vs H	1.7396

Figure 4.5 depicts a radar chart for pairwise Cohen's d effect sizes of total evaluation scores, highlighting that the difference between AI-generated and AI-enhanced methods is relatively small, indicating comparable performance. In contrast, both AI methods exhibit a substantial difference when compared to human-generated content, underscoring the superior consistency and quality of AI-influenced approaches.

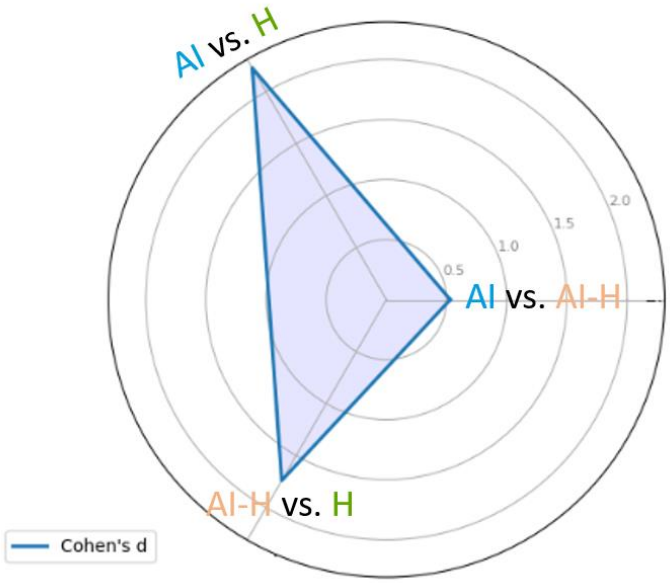

Figure 4.5
Radar Chart for Pairwise Cohen's d Effect Sizes of Total Evaluation Scores

4.3 AI-Human Collaboration Framework in Content Creation

Based on two case studies done on GPT4 and AviationGPT to see how they perform in content creation, we suggested a framework for using AI and humans in content creation and distribution. This Framework is intended to capture the best aspects of both AI and human capabilities to produce optimal, innovative, and effective content, backed by industry expertise and strategic direction. This section describes this framework in three key processes: content ideation and writing, content distribution and continuous improvement.

4.3.1 Idea Generation: Creating Content Aligned with MRO Industry Needs

The foundation of successful content creation in any industry is to come up with the right ideas that are aimed at solving the problems and addressing the needs of stakeholders. A compelling title also increases engagement by capturing people's attention and making them want to read the rest of the message right from the beginning.

AI Contributions: General purpose GenAI models like GPT4 are able to create content ideas for any industry including aviation MRO. This is because they are very efficient in data mining and synthesis and were trained on vast and diverse data across different industries thus they can produce interdisciplinary insights to inform creativity and innovation. GenAI models such as GPT4 can be strategically prompted to analyze aviation-specific sources like reports from the International Air Transport Association (IATA), advisories from the Federal Aviation Administration (FAE), regulations from the European Union Aviation Safety Agency (EASA), and MRO market studies. From these sources, GenAI can extract insights that correspond to current industry trends. Furthermore, it can improve content strategy through audience profiling by leveraging social media sentiment analysis to understand the preferences of the target demographics and keyword research to determine the high impact industry related phrases to optimize content for relevance and engagement.

Also, AI's gap analysis helps in determining the topics that have not been discussed much, for instance, the use of blockchain in MRO supply chain or AI-based management of spare parts. All these capabilities are strategic in generating a strong base for the creating of meaningful and targeted content ideas for the MRO sector.

Human Contributions: While AI is capable of creating data-driven content ideas, it is important to note that the human touch has to be involved in order to make sure that the ideas generated are in line with the organization's objectives and the audience's expectations. Beyond validation, humans bring creativity and depth by drawing on their knowledge of aviation history, technical expertise, and personal industry experience, refining AI-driven topics into meaningful and engaging content. Additionally, ethical oversight is crucial to maintain compliance with industry regulations and to avoid sensitive or misleading claims. Thus, the human inputs guarantee that the

content is not only meaningful and valuable but also credible and coherent with the company's purpose.

4.3.2 Content Writing: Developing Technical and Engaging MRO Content

The second step is generating content that addresses industry needs. Again, we investigate the role of AI and humans in this critical step.

AI Contributions: Specifically trained GenAI models such as AviationGPT, with their vast knowledge base and domain-specific training, have a very important place in the creation of technical and precise content for the Aviation MRO industry. It can create drafts for specific areas like aircraft maintenance processes, engine overhauling processes, or even compliance checklists, which is useful in saving time and ensuring that the information is technically correct. Also, AI is extremely helpful in creating summaries of the regulations by breaking down a large amount of information. To ensure that content gets to the right audience, AI SEO tools help enhance the use of keywords related to aviation, thus increasing the ranking of a particular page. In addition, AI makes it easy to modify the language and structure of the content, which can be easily adapted to the particular conditions of various markets around the world. This capability makes it possible to ensure that technical information is relevant and easily available to various areas and sectors.

Human Contributions: Human expertise is essential in refining AI-generated content to ensure it meets the high standards of the aviation MRO industry. Technical validation is a critical step, where experts verify the accuracy of content to align with industry-specific standards and terminology, ensuring credibility. Beyond accuracy, humans add value by crafting compelling narratives, such as success stories about predictive maintenance preventing costly Aircraft on Ground (AOG) situations, making complex topics relatable and engaging. Maintaining the brand's voice is another vital

contribution, as humans ensure that all content reflects the company's professionalism, expertise, and dedication to safety, innovation, and sustainability. Additionally, thought leadership is key in positioning the organization as an industry pioneer by developing impactful white papers or case studies on emerging innovations like digital twins or hydrogen fuel systems, showcasing the company's vision and capabilities.

4.3.3 Content Distribution and Continuous Improvement in Content Marketing

Although content distribution and monitoring the feedback for improvement can be considered as a subdiscipline of a broader scope of content marketing, it is an important factor when designing an AI-human collaboration framework in content marketing. In this research, the performance of GenAI in content creation was evaluated, also insights from the literature were obtained to know how AI tools can help in identifying the right channels for distribution and to gather feedback for improving the content marketing strategies. With the help of AI in sending content to specific audience and monitoring their reactions, companies can enhance their efforts and make sure that they are always evolving. The following paragraphs explain how AI and human collaboration can enhance the process of content distribution as well as the iterative approach to strategy development in the context of aviation MRO.

AI Contributions: AI significantly enhances content distribution and continuous improvement by leveraging its ability to analyze data, automate tasks, and optimize strategies (Dhawan, 2024). For distribution, AI tools can recommend the most effective platforms for aviation audiences, such as LinkedIn for B2B engagement, industry forums like Airline Suppliers, or webinars for technical discussions (Čergić and Mehanovic, 2024). Additionally, AI enables automation of content scheduling on various platforms through tools like Hootsuite or Buffer, saving time and ensuring consistency (Kubovics, 2024). By conducting A/B testing, AI identifies which headlines, formats, or post timings

resonate best with stakeholders such as airline operators and MRO experts (Elkhatibi and Benabdelouhed, 2024). Moreover, AI can personalize content delivery, tailoring email newsletters or messaging to specific audience segments, including procurement managers, engineers, and maintenance professionals (Dhawan, 2024). Beyond distribution, AI supports continuous improvement by tracking key performance indicators (KPIs) like click-through rates, social media engagement, and whitepaper downloads (Sood and Dhull, 2024). Sentiment analysis powered by NLP can further evaluate audience feedback from forums or social media, providing actionable insights (Elkhatibi and Benabdelouhed, 2024). AI also suggests updates to existing content based on user behavior, ensuring relevance and alignment with audience interests (Kubovics, 2024).

Human Contributions: While AI offers data-driven precision, human expertise is essential for strategic refinement and relationship-building. Humans play a critical role in tailoring distribution strategies to meet specific objectives (Massoudi, Fatah and Jami, 2024), such as promoting regulatory compliance expertise, educating stakeholders on emerging technologies, or securing new airline contracts. Engagement management is another key area where humans excel by interacting with audiences, answering technical questions, and fostering professional relationships on platforms like LinkedIn or during discussions on industry forums (Stone *et al.*, 2020). When it comes to continuous improvement, humans provide strategic adjustments by interpreting AI-generated metrics and aligning content strategies with business goals (Agu, Obiki-Osafiele and Chiekezie, 2024). They gather cross-functional feedback from engineers, regulatory experts, and marketing teams, ensuring content is both technically accurate and industry-relevant. Through personalized responses to comments or inquiries, humans build trust and credibility, turning feedback into actionable improvements that resonate with the Aviation MRO community (Agu, Obiki-Osafiele and Chiekezie, 2024).

4.3.4 Proposed AI-Human Collaboration Framework

The findings of this study indicate that AI-generated content outperformed both AI-enhanced human content and purely human-generated content in most of the evaluation criteria. So, to optimize content creation, the best way is to let a domain-specialized GenAI model create the first draft, followed by an industry expert refinement and validation. When the GenAI model starts the process, it combines diverse creative ideas from a vast dataset, providing a foundation that humans later refine with industry expertise, narrative depth, and strategic alignment. Additionally, AI can rapidly analyze huge amounts of information, identify relevant trends, and generate comprehensive and data-driven content. On the other hand, if a human expert takes the lead in writing and AI would be used only for enhancements, the content remains limited to the writer's personal knowledge and creative capacity, potentially missing out on broader industry insights.

Although human originality and emotional depth clearly surpasses artificial intelligence, AI is a great tool to open creative horizons. GenAI models have access to a vast knowledge base encompassing many unique ideas generated by many fields, businesses, and people. This lets them expose the human writers to more creative ideas, different points of view, and best practices they might not have thought of them. Instead of displacing human imagination, AI can assist human writers in refining their craft, adding their own unique voice, and strategically designing their work for maximum impact.

The Aviation MRO business can benefit from an autonomous agent that can be built on top of this workflow to aid in content development, dissemination, and enhancement. The agent can manage the entire content life cycle, including trend analysis, content ideation and generation, platform optimization, and performance monitoring, and combine it with human validation, storytelling, and strategic oversight. This way the collaboration can

result in creation of high-quality, most relevant and engaging content which is further improved with the help of data and human input.

Figure 4.6 displays this proposed AI-driven content development workflow.

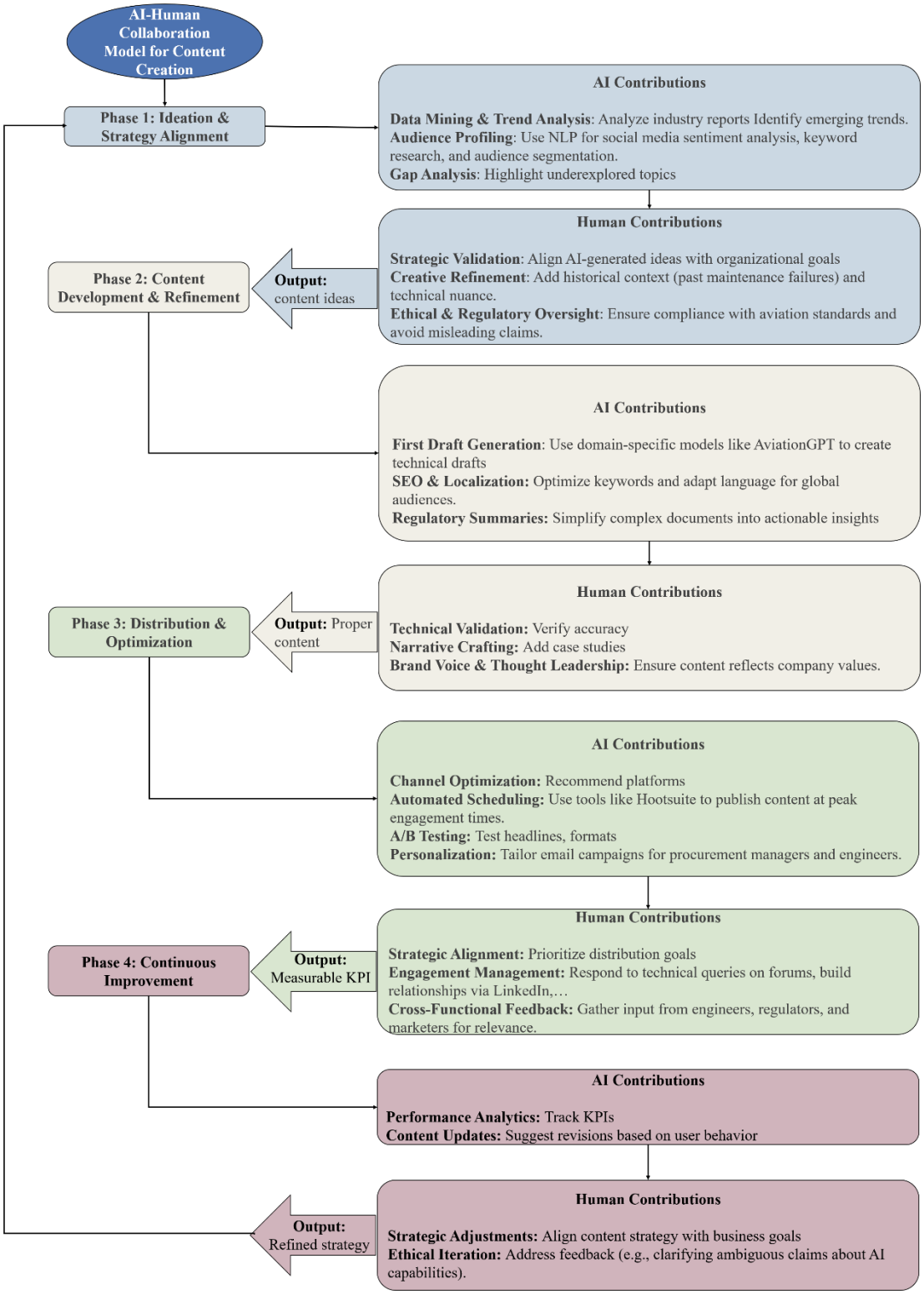

Figure 4.6
AI-Driven Content Development Workflow

4.4 Conclusion

This chapter delves into the role of AI in aviation MRO content development, examining the positive and negative aspects of AI-generated, AI-enhanced, and human-generated content. In two extensive case studies, we examined the performance of GPT4 in content ideation and the usefulness of AviationGPT as a domain-specific GenAI in copywriting for Aviation MRO industry. Our findings provide insight into how AI may be strategically used to enhance content quality, engagement, and overall effectiveness. The results clearly indicate that AI-generated content consistently outperformed human-generated content across various evaluation metrics, including clarity, accuracy, and readability. AI-enhanced human content served as a middle ground, offering a balanced approach that combined AI's efficiency with human expertise. The application of statistical analyses, including ANOVA, Tukey's HSD, and effect size measurements, confirmed that these differences were not only significant but also practically meaningful. Notably, while AI-generated content achieved the highest scores in most categories, the collaborative approach of AI-enhanced content demonstrated the best potential for strategic storytelling, industry alignment, and audience engagement.

We presented an AI-human cooperation framework to put these findings into action by allowing humans to continue providing strategic oversight while AI is optimally integrated into the content creation process. There are four main steps to this model: coming up with ideas and aligning strategies, developing and refining content, distributing and optimizing it, and continuously improving it. Businesses can take advantage of AI's efficiency without risking the credibility, accuracy, or industry relevance of their content by arranging AI and human collaboration throughout different phases.

This chapter concludes by highlighting the revolutionary power of AI in aviation MRO content marketing. The true potential of generative AI is to support human creativity and knowledge, even though it may greatly enhance accuracy and efficiency. Instead of a “AI versus human” argument, the future of content production in technical industries will have humans and AI working together to create engaging, high-quality material that has strategic significance.

CHAPTER V:

DISCUSSION

5.1 Discussion on Different Content Creation Approaches

This research aimed to assess the efficiency of general-purpose AI models (GPT4) and domain-specific GenAI models (AviationGPT) for the content development process in highly regulated B2B sectors such as aviation MRO. Two thorough case studies were implemented to assess the GPT4 in content ideation, and the copywriting effectiveness of AviationGPT. In the following paragraphs, firstly, we discussed the advantages and disadvantages of three major content creation approaches which may be present in the current scenario in the aviation MRO industry and other B2B sectors while creating content. Then, we compared these approaches with our proposed AH-Human collaboration method highlighting its strength against other methods.

Fully Human-Driven Approach: The aviation MRO industry and other B2B sectors may still depend on human-driven methods, which rely on marketing teams, technical experts, and professionals in the field to create high-quality content pieces. Human copywriters have a strong contextual understanding, proper industry experience, regulatory awareness, and strategic insight to produce technically accurate content that aligns with the company's goals and marketing strategies. A professional copywriter is able to craft content that ensures a compelling and consistent brand voice in specialized industries where reputation and trust are of the utmost importance. This is accomplished by aligning the message with the company's values, values, and future goals, while simultaneously engaging target audiences through sophisticated storytelling and narrative depth.

However, there is still a way to go before the market recognizes this human-driven, manual method of content generation as efficient, scalable, and favorable to

resource allocation. It could take a lot of time since there are a lot of steps to this process, including research, writing, editing, and reviewing. As a consequence of this, the development of content could be delayed, particularly in companies that demand quick market insights. There is also the possibility of inconsistency in marketing materials due to the fact that different individuals have varying degrees of experience and writing skills. This can result in variations in the quality and consistency of the content. One more issue is that there is no data-driven optimization process that occurs in real time. For the purpose of tracking results, engaging audiences, and optimizing keywords, human writers frequently rely on their gut feelings and previous experiences rather than using analytics driven by artificial intelligence.

Fully AI-driven Approach: A completely AI-driven content production methods allow companies to quickly produce a lot of text-based materials including blog entries, product details, and social media updates. Using cutting-edge language models like GPT4 and GenAI models designed for certain sectors would not only streamline content generation but also help firms to react to new trends by considering real-time data and keyword insights. Since textual content produced by language models is rather constant in terms of its structure, grammar, and readability, the requirement of human professionals editing and proofreading information would therefore be reduced. AI's SEO optimization techniques, which examine keyword trends, search engine algorithms, and audience interaction patterns, can help in fine-tuning content for digital exposure and discoverability. These advantages make artificial intelligence-generated content a strong fit for companies looking to rapidly scale content production and improve the operational effectiveness of their marketing and communication plans.

While GenAI models are efficient at producing basic information, they frequently struggle with technical domains, regulatory and ethical compliance particularly in

industries governed by strict safety protocols and legal requirements where in-depth knowledge and expertise, accuracy and precision are crucial and even small inaccuracies can lead to serious problems. Consequently, due to these concerns, this strategy is not often seen as dependable in most businesses.

AI-assisted Approach: Augmenting Human Writing with AI Tools: In an AI-assisted approach, as an intermediary approach between fully human-driven and fully AI-driven content creation, human copywriters compose initial drafts, then by using AI-powered tools such as Grammarly, and AI-driven SEO platforms they may fix and improve the content in terms of grammar, readability, search engine optimization, and audience engagement.

Additionally, AI tools can provide real-time recommendations for sentence structure, tone, and keyword integration, guaranteeing that content follows the digital marketing and content strategy objectives. These capabilities can be beneficial to companies that want their human-generated content to be more effective without sacrificing authenticity or identity.

Nevertheless, these benefits are still not enough to make AI-assisted content enhancement approach a viable alternative to human-driven content creation method. This approach does not significantly cut down on content generation time since writers still need to come up with ideas, undertake research, and organize the information by hand before AI tools can improve it. While it offers a step toward greater efficiency and optimization, it does not fully capitalize on AI's potential to automate ideation and drafting, making it less effective for businesses aiming to scale content production without significantly increasing human workload.

AI-Human Collaboration: The AI-Human Collaboration Model combines human ingenuity, strategic direction, and knowledge of the industry with AI's scalability,

optimization, and speed to create appropriate content. Producing an efficient content is a team effort, AI helps with brainstorming, writing, and structural refining, and human experts check for correctness, engagement, and compliance with regulations. However, to make the best possible use of time and resources without sacrificing the quality of the content, it is important to assess each stage of the content creation process to see if it is better handled by humans or by artificial intelligence.

5.2 Discussion of Research Question One

To address the first research question about the differences between AI-generated/enhanced and human-generated content, we conducted two case studies in order to evaluate the GenAI capabilities in generating the proper content ideas and copywriting.

Through the first case study, we found that GPT4 delivered a strong performance in the first case study when producing content ideas for aviation MRO, especially for white papers achieving the highest effectiveness rating of 93.13%. This outcome emphasizes various significant benefits of utilizing a general-purpose AI model for content ideation rather than depending on an industry specialist. The first and foremost benefit is the speed. Unlike human experts, GPT4 can come up with a large number of content ideas in a matter of seconds after conducting research, brainstorming, and refining. AI integrates knowledge from several industries, incorporating innovative insights from technology, sustainability, business strategy, and other relevant domains. This interdisciplinary approach fosters the generation of more diversified and new ideas than those produced by an individual expert relying just on their personal expertise. Furthermore, AI excels at monitoring and evaluating trends in real time. It can analyze vast quantities of online data, swiftly discovering emerging issues, market challenges, and audience interests more rapidly than any human can. Conversely, industry

professionals frequently depend on historical experiences and industry data, which may not consistently reflect the most recent changes in market dynamics. Moreover, AI guarantees uniformity and scalability by organizing content concepts in a coherent, systematic, and SEO-optimized manner, whereas human brainstorming may occasionally exhibit inconsistency, prejudice, or be constrained by subjective perspectives.

According to the findings of our second case study, using AviationGPT as a domain-specific language model for copywriting, the total evaluation score for AI-generated materials was 131.345 , which exceeded both AI-enhanced human content with total score of 129.182 and human-generated content with the score of 118.868 out of 150. This result shows how using domain-specific GenAI as the leading writer outperforms human-centered methods in terms of efficiency, accuracy, time, and consistency, even when they use AI tools to enhance their content. Integrating insights from many disciplines, such as technical terminology, compliance standards, business trends, and digital transformation initiatives, is a significant advantage of domain-specific GenAI. As a result, AI-generated content is more comprehensive, data-driven, and in sync with market trends than human-written material, which is frequently constrained by specific knowledge and requires human research. Unlike human writers, who vary in experience, attention to detail, and writing style, AI ensures uniformity in tone and professionalism across all materials. Another major benefit is AI's built-in SEO and readability enhancements, which help businesses automatically optimize content for digital performance, integrating high-ranking keywords and improving clarity—tasks that require additional effort in human-written content.

Although human expertise is crucial for final validation, brand alignment, and creative storytelling, our research demonstrates that domain-specific GenAI significantly improves efficiency, accuracy, and consistency. By delegating drafting and structuring

tasks to AI, businesses can allocate human experts to strategic enhancements, guaranteeing that content is both technically precise and captivating.

5.3 Discussion of Research Question Two

The second research question was about how to create a comprehensive and appropriate framework for AI-human collaboration in content creation and distribution. based on the findings of our research we designed a framework to strategically integrate AI's strengths with human expertise, ensuring a seamless, optimized workflow for content creation and distribution. In contrast to other approaches that over-rely on AI or are primarily manual, this framework assigns responsibilities based on efficiency and ability, optimizing quality and productivity.

Its systematic approach assures that the best AI or human handles each stage of content generation. This avoids the time-consuming and inconsistent nature of totally human-driven content creation and the constraints of fully AI-generated material, which typically lacks contextual richness, and regulatory awareness. Additionally, by dividing the process into four distinct phases, ideation, development, distribution, and continuous improvement, our model ensures an iterative and adaptive workflow. AI analyzes trends and generates data-driven insights, while human oversight ensures that material is relevant, technically valid, and strategically aligned with the company's objectives.

Furthermore, the integration of AI-driven automation in distribution and optimization makes this model highly scalable, allowing businesses to maximize reach and engagement without increasing human workload. At the same time, human involvement in narrative crafting, brand voice consistency, and audience interaction ensures that content remains authentic and engaging. Another key strength of this framework is its continuous improvement cycle, where AI tracks performance metrics while humans refine strategies based on real-world engagement and industry feedback.

This creates a data-driven yet human-guided approach to content enhancement, making the model highly adaptive and capable of evolving alongside industry trends.

By effectively balancing automation with human evaluation, this framework avoids the pitfalls of both fully AI-driven and fully human-driven content strategies, making it the most effective approach for AI-Human collaboration in industries that require both technical precision and strategic engagement.

CHAPTER VI:

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

This research explored the effectiveness of GenAI models in content ideation and copywriting for the aviation MRO industry and what is the best AI-human collaboration to integrate GenAI and human distinct capabilities. Through two comprehensive case studies, we assessed GPT4's ability to generate content ideas and AviationGPT's performance in technical copywriting, comparing their outputs to human-created content. We found that the use of AI for content creation outperformed human writing in terms of efficiency, consistency, and scalability especially for structured, compliant to regulation, and SEO optimized content. However, AI did not have a deep contextual understanding of the content, creativity, and strategic thinking which means that there is still a need for human evaluation and editing of the content produced by AI. In order to solve these issues, we proposed an AI-Human collaboration Model in four phases to ensure that AI is used for automation and data analysis and human experts are used for checking for accuracy, engagement, and brand consistency. This model was found to be the most suitable for content creation as it enhances both speed and precision as well as strategic thinking. Our findings present the possibility of AI-human collaboration in improving content marketing and technical communication particularly in the B2B sector that requires both efficiency and expertise due to regulatory requirements.

6.2 Implications

This research has important implications for businesses, developers, content creators, and industries that need exact, strategic, and regulated content especially in the B2B aviation MRO industry. The study shows that GenAI can increase effectiveness in content creation, so companies can create correct and compliant materials quickly while

keeping up quality standards. While AI writing has its limitations especially in areas that call for in-depth understanding of the industry, strategic thinking and human innovation, GenAI models are not very good at regulatory details, contextual understanding, and business goal alignment which means that human oversight is necessary. This is where AI-human collaboration emerges as the optimal strategy. Businesses can use AI to create draft content and improve it and human experts can check for compliance and ensure brand consistency. The study also shows that organizations have to spend on AI capabilities and training in order to enable their teams just to edit and finalize the GenAI-generated content. Furthermore, the rising use of AI in content creation means that there is a need for good ethical governance. This means that businesses could end up with incorrect information, prejudice, and non-compliance with regulations in their AI-generated content when there is no human check. As a result, organizations should establish ethical principles for AI content creation, which include human supervision as a vital element for accuracy, credibility, and compliance across industries.

6.3 Recommendations for Future Research

Further research may concentrate on developing AI agents that mix GenAI models, especially those trained for a particular industry, with internal company data to generate more precise, strategic, and compliant content. Several companies now offer domain-specific models, like FinGPT, a community-driven project usually developed on top of OpenAI's GPT models, suited for financial uses including market analysis and trading. Another example is developed by researchers at the University of Washington and Allen Institute, as a BERT variant fine-tuned on legal texts for tasks like contract analysis and legal research and many more fine-tuned language models in fields like science, education, healthcare, and energy (Yang, Liu and Wang, 2023; Takeda, 2024).

Today's AI systems depend mainly on publicly accessible data sources yet fail to understand context deeply which prevents them to generate content that conforms both to organizational goals and proprietary knowledge and regulatory demands. Future AI agents could extract information from internal databases and industry guidelines using advanced technologies such as retrieval augmented generation (RAG) and reinforcement learning to produce content that is both factually correct and strategically aligned.

More research is needed to determine the effectiveness of domain-specific GenAI models for real-world applications so businesses can make data-driven decisions about performance and accuracy as well as operational efficiency. Comparative research across different industries will help organizations understand the return on investment (ROI) of AI adoption and whether or not integrating such GenAI models into their workflows will deliver tangible business value. With concrete performance data, companies can make informed, data-driven decisions on how to best implement GenAI in their content creation and communication strategies.

6.4 Conclusion

This research provides a thorough assessment of GPT4 as a general-purpose language model and AviationGPT as a domain-specific model designed for the aviation MRO industry, evaluating their efficacy in technical content ideation and copywriting, an area that has not been extensively explored. This research claimed that during the content ideation phase, GPT4 can generate content ideas in seconds with a 93.13% effectiveness regarding trendiness, appropriateness for content type, and industry relevance. Furthermore, by conducting a comparative analysis between AI-generated, AI-enhanced, and human-generated content, our study provides valuable insights into how AviationGPT performs in the highly regulated aviation MRO industry, where accuracy, compliance, and strategic messaging are critical. Our findings show that AviationGPT

significantly improves content quality, consistency, and efficiency, surpassing human-generated content in terms of time, structural and informative accuracy, and readability. However, human oversight for contextual refinement and regulatory alignment is still needed.

In addition, this research also built upon different content creation approaches to develop a structured AI-Human collaboration framework that optimally integrates AI-driven automation with human expertise. This framework provides a scalable and strategic solution for aviation MRO companies to improve their content workflows in order to guarantee that the materials are technically precise, regulation-compliant and engaging to industry stakeholders. By tackling a critical gap in AI-driven content creation for technical industries, this research provides businesses with actionable insights that enable them to make data-driven decisions about adopting domain-specific AI models to streamline operations, ensure regulatory compliance and enhance market positioning. The strong foundation laid by this study will enable future advancements in AI content strategies applied to highly regulated industries as AI technology progresses.

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APPENDIX A

SURVEY COVER LETTER

Survey to define the content types and criteria to evaluate the content ideas

Thank you for participating in this survey. Your responses will help identify the most common content types used in B2B marketing and the key criteria for evaluating content titles. This survey will take approximately 5 minutes to complete.

Participant Information

- Name (optional): _____
- Email (optional): _____
- Occupation: _____

1. **Which content formats do you use most frequently in your B2B marketing strategy?** *(Select up to 3)*

    - Short Informative Articles
    - Whitepapers & eBooks
    - Case Studies & Customer Success Stories
    - Webinars & Podcasts
    - News Updates &Industry Reports
    - Infographics & Data Visualizations
    - Expert Interviews
    - Other (Please specify)

2. **How do you determine which content format to use for a specific marketing campaign?** *(Select all that apply)*

    - Audience Preferences & Buyer Persona Research
    - Stage in the Buyer's Journey (Awareness, Consideration, Decision)
    - Past Performance Data & Analytics
    - Competitive Benchmarking
    - Industry Trends
    - Other (Please specify)

3. **What are the most important criteria for evaluating the effectiveness of a content idea?** *(Rank from 1 to 5, where 1 = Least Important and 5 = Most Important)*

- Relevance to Target Audience & Industry
- Trendiness
- Uniqueness
- Conciseness
- Appropriateness for Content Type
- Informativeness
- SEO & Keyword Optimization
- Potential to Drive Engagement (Shares, Comments, Clicks, etc.)

4. **What are the most important characteristics of a high-performing B2B content title?** *(Rank from 1 to 5, where 1 = Least Important and 5 = Most Important)*

    - Clarity & Readability
    - Informativeness and Data-Driven Appeal
    - Engagement
    - Use of Keywords & SEO Optimization
    - Engagement (Compelling & Action-Oriented Language)
    - Relevance to Business Pain Points & Challenges

5. **Which headline style performs best in your B2B content marketing?** *(Select up to 2)*

    - Data-Driven Titles
    - Question-Based Titles
    - Listicles & "How-To" Guides
    - Industry Trend Titles
    - Pain Point Focused Titles
    - Other (Please specify)

6. **Which metrics do you use to evaluate the success of a content piece?** *(Select up to 3)*

    - Website Traffic & Time on Page
    - Engagement Metrics (Shares, Comments, Clicks)
    - Lead Generation & Conversion Rates
    - SEO Performance (Keyword Ranking, Organic Traffic)
    - Customer Feedback & Survey Responses
    - Other (Please specify)

9. **Which trends do you believe will shape B2B content marketing in the next 3 years?** *(Select up to 3)*

- AI-Generated & Automated Content
- Interactive & Personalized Content Experiences
- Video & Live Streaming for B2B Audiences
- Data-Driven & Predictive Content Strategies
- Sustainability & Purpose-Driven Storytelling
- Other (Please specify)

10. **Any additional comments or insights you'd like to share about content evaluation in B2B marketing?**
    (Open-ended response box)

Thank You for your Time and insights

Elham Biglar

APPENDIX B

INTERVIEW COVER LETTER

Invitation to Evaluate Content Ideas and their Developed Content in Aviation MRO Content Marketing

Dear ……,

I hope you are doing well. I am conducting a research study on the evaluation of the effectiveness of GenAI in content generation for aviation MRO marketing, and I would like to invite you to participate as an expert evaluator. Given your expertise in aviation concepts, your insights will be instrumental in assessing the quality, relevance, and impact of GenAI models in generating content ideas and strategies.

This study involves evaluating 80 content ideas generated by GPT4 and 180 content pieces produced through three different generation methods.

To ensure a structured evaluation process:

The evaluation of content ideas will be conducted in a single session, lasting approximately 20-30 minutes. Each idea will be assessed based on three key criteria: "Relevance to the Industry," "Trendiness," and "Appropriateness for the Content." Please rate each criterion on a 1-5 scale, with 5 representing the highest score.

The content pieces will be sent in series, with each set containing 9 pieces (3 per category). Each piece is approximately 1 to 2 pages long and covers various topics within the aviation MRO sector. You will have one week to review each series, ensuring a manageable and efficient process.

Each content piece will be evaluated based on the following criteria, using a 1-10 scale (10 being the highest score):

- **Readability:** How easily the content can be understood by its intended audience, considering language, structure, and complexity.
- **Clarity:** The effectiveness of the content in delivering a clear and well-structured message without ambiguity.
- **Informativeness:** The depth and accuracy of the information presented, including its relevance and value to the aviation MRO industry.
- **Engagement:** The ability of the content to capture interest, encourage interaction, and keep the reader invested.

- **Reach:** The potential for the content to attract a wide and relevant audience within the aviation MRO sector.

I truly appreciate your time and expertise in contributing to this research, which will provide valuable insights into the role of AI in aviation MRO marketing.

Best regards,

Elham Biglar

APPENDIX C:

THESIS DATA POINTS

Case Study 1: Evaluating the GenAI in Content Ideation

Table C1
Scores to Define the Criteria to Evaluate the Content Ideas

Expert/ Criteria	Relevance	Appropriateness for content type	Trendiness	Conciseness	Uniqueness	Informational Value	Engagement Potential	Audience Reach	SEO Optimization	Clarity	Visual Appeal
p1	4.000	2.000	2.000	1.000	2.000	2.000	4.000	4.000	3.000	3.000	2.000
p2	4.000	3.000	5.000	5.000	2.000	5.000	5.000	1.000	4.000	4.000	5.000
p3	4.000	5.000	5.000	2.000	4.000	4.000	3.000	5.000	2.000	2.000	1.000
p4	5.000	2.000	5.000	3.000	2.000	3.000	2.000	4.000	5.000	2.000	4.000
p5	5.000	4.000	5.000	1.000	5.000	4.000	3.000	3.000	5.000	3.000	5.000
p6	3.000	3.000	2.000	2.000	5.000	3.000	3.000	1.000	5.000	1.000	1.000
p7	4.000	2.000	5.000	2.000	2.000	3.000	2.000	1.000	2.000	2.000	2.000
p8	4.000	2.000	5.000	4.000	4.000	3.000	3.000	4.000	4.000	5.000	2.000
p9	4.000	3.000	2.000	5.000	4.000	5.000	2.000	3.000	3.000	2.000	1.000
p10	5.000	3.000	2.000	3.000	2.000	4.000	5.000	3.000	2.000	2.000	2.000
p11	5.000	3.000	2.000	1.000	5.000	2.000	5.000	5.000	3.000	1.000	1.000
p12	4.000	5.000	2.000	4.000	2.000	3.000	5.000	3.000	3.000	4.000	5.000
p13	4.000	5.000	5.000	5.000	4.000	3.000	4.000	3.000	4.000	2.000	5.000
p14	3.000	4.000	4.000	4.000	3.000	3.000	2.000	3.000	3.000	3.000	1.000
p15	5.000	5.000	4.000	5.000	5.000	4.000	2.000	2.000	3.000	4.000	5.000
p16	3.000	5.000	2.000	5.000	4.000	3.000	4.000	5.000	4.000	5.000	5.000
p17	5.000	4.000	4.000	3.000	2.000	5.000	4.000	1.000	3.000	1.000	5.000
p18	5.000	2.000	4.000	5.000	5.000	3.000	4.000	4.000	3.000	5.000	3.000
p19	2.000	5.000	2.000	4.000	2.000	4.000	3.000	1.000	3.000	4.000	4.000
p20	5.000	3.000	4.000	5.000	2.000	4.000	2.000	5.000	2.000	4.000	2.000
p21	3.000	5.000	5.000	3.000	3.000	3.000	4.000	4.000	2.000	4.000	3.000
p22	5.000	3.000	3.000	4.000	5.000	4.000	4.000	5.000	2.000	5.000	5.000
p23	5.000	3.000	3.000	4.000	5.000	3.000	2.000	3.000	4.000	4.000	1.000
p24	2.000	4.000	2.000	3.000	3.000	2.000	4.000	4.000	4.000	5.000	3.000
p25	2.000	4.000	4.000	2.000	4.000	3.000	3.000	3.000	3.000	4.000	4.000
p26	4.000	3.000	3.000	5.000	3.000	3.000	4.000	1.000	3.000	3.000	5.000
p27	4.000	3.000	5.000	2.000	5.000	4.000	2.000	1.000	3.000	4.000	2.000
p28	3.000	5.000	3.000	5.000	2.000	4.000	4.000	4.000	3.000	4.000	4.000
p29	5.000	3.000	2.000	4.000	2.000	3.000	2.000	4.000	2.000	2.000	5.000
p30	5.000	3.000	4.000	4.000	4.000	3.000	3.000	5.000	4.000	4.000	3.000
p31	4.000	5.000	4.000	4.000	2.000	3.000	3.000	5.000	4.000	2.000	2.000
p32	4.000	5.000	5.000	4.000	3.000	3.000	3.000	3.000	3.000	3.000	2.000
p33	4.000	2.000	4.000	4.000	3.000	3.000	3.000	4.000	2.000	1.000	4.000
p34	2.000	5.000	4.000	3.000	5.000	4.000	4.000	1.000	4.000	3.000	4.000
p35	3.000	5.000	2.000	3.000	5.000	2.000	3.000	5.000	4.000	4.000	1.000
p36	4.000	4.000	4.000	4.000	2.000	3.000	3.000	5.000	4.000	2.000	4.000
p37	4.000	4.000	5.000	3.000	2.000	3.000	4.000	2.000	2.000	2.000	2.000
p38	4.000	3.000	4.000	3.000	3.000	3.000	3.000	4.000	4.000	3.000	2.000
Average	3.947	3.658	3.605	3.500	3.342	3.316	3.289	3.263	3.237	3.105	3.079

Table C2

Scores to Define the Most Common Content Types

Expert/ Content type	Short Articles	Case Studies	White Papers	Expert Interviews	Infographics	News Updates	Webinars/ Podcasts
P1	4.000	5.000	1.000	5.000	2.000	2.000	3.000
p2	5.000	3.000	5.000	3.000	5.000	3.000	4.000
P3	3.000	5.000	5.000	4.000	4.000	2.000	3.000
P4	5.000	1.000	2.000	3.000	4.000	5.000	2.000
P5	5.000	2.000	5.000	3.000	4.000	2.000	3.000
P6	2.000	4.000	2.000	1.000	4.000	2.000	3.000
P7	3.000	1.000	1.000	3.000	4.000	3.000	4.000
P8	3.000	4.000	4.000	5.000	3.000	1.000	4.000
P9	4.000	2.000	4.000	3.000	2.000	2.000	1.000
P10	5.000	2.000	4.000	1.000	4.000	2.000	1.000
P11	5.000	1.000	5.000	5.000	2.000	4.000	2.000
P12	3.000	2.000	3.000	2.000	1.000	5.000	1.000
P13	5.000	5.000	5.000	3.000	1.000	2.000	3.000
P14	2.000	2.000	5.000	1.000	2.000	2.000	4.000
P15	4.000	4.000	3.000	2.000	3.000	3.000	2.000
P16	3.000	4.000	3.000	2.000	2.000	2.000	2.000
P17	4.000	4.000	3.000	4.000	4.000	5.000	2.000
P18	5.000	5.000	3.000	5.000	5.000	4.000	2.000
P19	4.000	5.000	4.000	3.000	2.000	2.000	3.000
P20	4.000	5.000	3.000	1.000	3.000	4.000	4.000
P21	4.000	3.000	3.000	4.000	3.000	3.000	2.000
P22	5.000	4.000	3.000	5.000	2.000	3.000	1.000
P23	4.000	3.000	3.000	4.000	5.000	2.000	4.000
P24	3.000	4.000	3.000	5.000	2.000	5.000	4.000
P25	3.000	3.000	3.000	4.000	3.000	4.000	2.000
P26	3.000	3.000	3.000	3.000	3.000	2.000	2.000
P27	3.000	4.000	5.000	4.000	4.000	3.000	2.000
P28	3.000	5.000	2.000	4.000	3.000	3.000	4.000
P29	5.000	2.000	2.000	4.000	2.000	3.000	5.000
P30	4.000	3.000	3.000	3.000	4.000	4.000	5.000
P31	3.000	4.000	4.000	3.000	2.000	3.000	3.000
P32	4.000	3.000	3.000	4.000	2.000	5.000	2.000
P33	4.000	2.000	4.000	2.000	2.000	5.000	2.000
P34	3.000	5.000	2.000	2.000	4.000	5.000	3.000
P35	4.000	4.000	3.000	4.000	4.000	4.000	4.000
P36	4.000	5.000	3.000	4.000	3.000	5.000	4.000
Average	3.806	3.417	3.306	3.278	3.028	3.222	2.833

Table C3

Expert Scores on Content Ideas

Content Type	Title	Relevance to Industry	Trendiness	Appropriateness for content type	Expert

case study	implementing aircraft repair in aircraft overhaul	5	4	5	Audit Expert
case study	implementing airline maintenance in aviation safety	5	4	5	Audit Expert
case study	implementing airline repair in aviation engineering	5	3	5	Audit Expert
case study	implementing aviation logistics in aircraft parts	5	4	5	Audit Expert
case study	implementing aviation supply chain in mro support	5	4	5	Audit Expert
case study	implementing aviation technology in aviation management	5	5	5	Audit Expert
case study	implementing mro consultancy in aircraft logistics	4	3	4	Audit Expert
case study	implementing mro industry in aviation maintenance	5	4	5	Audit Expert
case study	implementing mro operations in mro partnerships	5	4	5	Audit Expert
case study	implementing mro services in aircraft engineering	5	4	5	Audit Expert
case study	lessons learned from airline maintenance and aviation safety	5	4	5	Audit Expert
case study	lessons learned from aviation logistics and aircraft parts	5	4	5	Audit Expert
case study	lessons learned from aviation supply chain and mro support	5	4	5	Audit Expert
case study	lessons learned from aviation technology and aviation management	5	5	5	Audit Expert
case study	lessons learned from mro consultancy and	4	3	4	Audit Expert

	aircraft logistics				
case study	lessons learned from mro industry and aviation maintenance	5	4	5	Audit Expert
case study	lessons learned from mro services and aircraft engineering	5	4	5	Audit Expert
case study	real-world applications of aircraft repair in aircraft overhaul	5	4	5	Audit Expert
case study	real-world applications of airline maintenance in aviation safety	5	4	5	Audit Expert
case study	real-world applications of airline repair in aviation engineering	5	3	5	Audit Expert
case study	real-world applications of aviation logistics in aircraft parts	5	4	5	Audit Expert
case study	real-world applications of aviation supply chain in mro support	5	4	5	Audit Expert
case study	real-world applications of aviation technology in aviation management	5	5	5	Audit Expert
case study	real-world applications of mro consultancy in aircraft logistics	4	3	4	Audit Expert
case study	real-world applications of mro industry in aviation maintenance	5	4	5	Audit Expert
case study	real-world applications of mro operations in mro partnerships	5	4	5	Audit Expert
case study	real-world applications of mro	5	4	5	Audit Expert

	services in aircraft engineering				
short informative article	best practices for aircraft engineering and airline operations	5	4	5	Audit Expert
short informative article	best practices for aircraft logistics and mro software	5	4	5	Audit Expert
short informative article	best practices for aircraft overhaul and mro solutions	5	4	5	Audit Expert
short informative article	best practices for aircraft parts and aviation mro	5	4	5	Audit Expert
short informative article	best practices for aviation engineering and aircraft maintenance	5	4	5	Audit Expert
short informative article	best practices for aviation maintenance and aviation repair	5	4	5	Audit Expert
short informative article	best practices for aviation management and airline mro	5	4	5	Audit Expert
short informative article	best practices for aviation safety and aviation analytics	5	5	5	Audit Expert
short informative article	best practices for mro partnerships and aviation parts	5	4	5	Audit Expert
short informative article	best practices for mro support and aircraft support	5	4	5	Audit Expert
short informative article	key insights on aircraft engineering and airline operations	5	4	5	Audit Expert
short informative article	key insights on aircraft logistics and mro software	5	4	5	Audit Expert

short informative article	key insights on aircraft parts and aviation mro	5	4	5	Audit Expert
short informative article	key insights on aviation maintenance and aviation repair	5	4	5	Audit Expert
short informative article	key insights on aviation management and airline mro	5	4	5	Audit Expert
short informative article	key insights on aviation safety and aviation analytics	5	5	5	Audit Expert
short informative article	key insights on mro support and aircraft support	5	4	5	Audit Expert
short informative article	top 5 tips for effective aircraft engineering and airline operations	5	4	5	Audit Expert
short informative article	top 5 tips for effective aircraft logistics and mro software	5	4	5	Audit Expert
short informative article	top 5 tips for effective aircraft overhaul and mro solutions	5	4	5	Audit Expert
short informative article	top 5 tips for effective aircraft parts and aviation mro	5	4	5	Audit Expert
short informative article	top 5 tips for effective aviation engineering and aircraft maintenance	5	4	5	Audit Expert
short informative article	top 5 tips for effective aviation maintenance and aviation repair	5	4	5	Audit Expert
short informative article	top 5 tips for effective aviation management and airline mro	5	4	5	Audit Expert

short informative article	top 5 tips for effective aviation safety and aviation analytics	5	5	5	Audit Expert
short informative article	top 5 tips for effective mro partnerships and aviation parts	5	4	5	Audit Expert
short informative article	top 5 tips for effective mro support and aircraft support	5	4	5	Audit Expert
white paper	advancements in aircraft maintenance and mro operations	5	4	5	Audit Expert
white paper	advancements in aircraft support and aircraft repair	5	4	5	Audit Expert
white paper	advancements in airline mro and aviation supply chain	5	4	5	Audit Expert
white paper	advancements in airline operations and aviation logistics	5	4	5	Audit Expert
white paper	advancements in aviation analytics and mro industry	5	5	5	Audit Expert
white paper	advancements in aviation mro and mro consultancy	5	4	5	Audit Expert
white paper	advancements in aviation parts and mro services	5	4	5	Audit Expert
white paper	advancements in aviation repair and aviation technology	5	5	5	Audit Expert
white paper	advancements in mro software and airline maintenance	5	4	5	Audit Expert
white paper	advancements in mro solutions and airline repair	5	4	5	Audit Expert
white paper	enhancing aircraft maintenance with mro operations	5	4	5	Audit Expert

white paper	enhancing aircraft support with aircraft repair	5	4	5	Audit Expert
white paper	enhancing airline mro with aviation supply chain	5	4	5	Audit Expert
white paper	enhancing airline operations with aviation logistics	5	4	5	Audit Expert
white paper	enhancing aviation analytics with mro industry	5	5	5	Audit Expert
white paper	enhancing aviation mro with mro consultancy	5	4	5	Audit Expert
white paper	enhancing aviation parts with mro services	5	4	5	Audit Expert
white paper	enhancing aviation repair with aviation technology	5	5	5	Audit Expert
white paper	enhancing mro software with airline maintenance	5	4	5	Audit Expert
white paper	enhancing mro solutions with airline repair	5	4	5	Audit Expert
white paper	integrating airline mro with aviation supply chain for optimal performance	5	4	5	Audit Expert
white paper	integrating airline operations with aviation logistics for optimal performance	5	4	5	Audit Expert
white paper	integrating aviation analytics with mro industry for optimal performance	5	5	5	Audit Expert
white paper	integrating aviation mro with mro consultancy for optimal performance	5	4	5	Audit Expert
white paper	integrating aviation repair with aviation technology for optimal performance	5	5	5	Audit Expert

white paper	integrating mro software with airline maintenance for optimal performance	5	4	5	Audit Expert
case study	implementing aircraft repair in aircraft overhaul	5	3	5	Content Marketing Expert
case study	implementing airline maintenance in aviation safety	5	4	5	Content Marketing Expert
case study	implementing airline repair in aviation engineering	5	3	5	Content Marketing Expert
case study	implementing aviation logistics in aircraft parts	5	4	5	Content Marketing Expert
case study	implementing aviation supply chain in mro support	5	4	5	Content Marketing Expert
case study	implementing aviation technology in aviation management	5	4	5	Content Marketing Expert
case study	implementing mro consultancy in aircraft logistics	5	3	5	Content Marketing Expert
case study	implementing mro industry in aviation maintenance	5	3	5	Content Marketing Expert
case study	implementing mro operations in mro partnerships	5	4	5	Content Marketing Expert
case study	implementing mro services in aircraft engineering	5	3	5	Content Marketing Expert
case study	lessons learned from airline maintenance and aviation safety	5	4	5	Content Marketing Expert
case study	lessons learned from aviation logistics and aircraft parts	5	4	5	Content Marketing Expert

case study	lessons learned from aviation supply chain and mro support	5	4	5	Content Marketing Expert
case study	lessons learned from aviation technology and aviation management	5	4	5	Content Marketing Expert
case study	lessons learned from mro consultancy and aircraft logistics	5	3	5	Content Marketing Expert
case study	lessons learned from mro industry and aviation maintenance	5	3	5	Content Marketing Expert
case study	lessons learned from mro services and aircraft engineering	5	3	5	Content Marketing Expert
case study	real-world applications of aircraft repair in aircraft overhaul	5	3	5	Content Marketing Expert
case study	real-world applications of airline maintenance in aviation safety	5	4	5	Content Marketing Expert
case study	real-world applications of airline repair in aviation engineering	5	3	5	Content Marketing Expert
case study	real-world applications of aviation logistics in aircraft parts	5	4	5	Content Marketing Expert
case study	real-world applications of aviation supply chain in mro support	5	4	5	Content Marketing Expert
case study	real-world applications of aviation technology in aviation management	5	4	5	Content Marketing Expert
case study	real-world applications of mro consultancy in	5	3	5	Content Marketing Expert

	aircraft logistics				
case study	real-world applications of mro industry in aviation maintenance	5	3	5	Content Marketing Expert
case study	real-world applications of mro operations in mro partnerships	5	4	5	Content Marketing Expert
case study	real-world applications of mro services in aircraft engineering	5	3	5	Content Marketing Expert
short informative article	best practices for aircraft engineering and airline operations	5	4	5	Content Marketing Expert
short informative article	best practices for aircraft logistics and mro software	5	4	5	Content Marketing Expert
short informative article	best practices for aircraft overhaul and mro solutions	5	4	5	Content Marketing Expert
short informative article	best practices for aircraft parts and aviation mro	5	4	5	Content Marketing Expert
short informative article	best practices for aviation engineering and aircraft maintenance	5	4	5	Content Marketing Expert
short informative article	best practices for aviation maintenance and aviation repair	5	4	5	Content Marketing Expert
short informative article	best practices for aviation management and airline mro	5	4	5	Content Marketing Expert
short informative article	best practices for aviation safety and aviation analytics	5	4	5	Content Marketing Expert

short informative article	best practices for mro partnerships and aviation parts	5	4	5	Content Marketing Expert
short informative article	best practices for mro support and aircraft support	5	4	5	Content Marketing Expert
short informative article	key insights on aircraft engineering and airline operations	5	4	5	Content Marketing Expert
short informative article	key insights on aircraft logistics and mro software	5	4	5	Content Marketing Expert
short informative article	key insights on aircraft parts and aviation mro	5	4	5	Content Marketing Expert
short informative article	key insights on aviation maintenance and aviation repair	5	4	5	Content Marketing Expert
short informative article	key insights on aviation management and airline mro	5	4	5	Content Marketing Expert
short informative article	key insights on aviation safety and aviation analytics	5	4	5	Content Marketing Expert
short informative article	key insights on mro support and aircraft support	5	4	5	Content Marketing Expert
short informative article	top 5 tips for effective aircraft engineering and airline operations	5	4	5	Content Marketing Expert
short informative article	top 5 tips for effective aircraft logistics and mro software	5	4	5	Content Marketing Expert
short informative article	top 5 tips for effective aircraft overhaul and mro solutions	5	4	5	Content Marketing Expert

short informative article	top 5 tips for effective aircraft parts and aviation mro	5	4	5	Content Marketing Expert
short informative article	top 5 tips for effective aviation engineering and aircraft maintenance	5	4	5	Content Marketing Expert
short informative article	top 5 tips for effective aviation maintenance and aviation repair	5	4	5	Content Marketing Expert
short informative article	top 5 tips for effective aviation management and airline mro	5	4	5	Content Marketing Expert
short informative article	top 5 tips for effective aviation safety and aviation analytics	5	4	5	Content Marketing Expert
short informative article	top 5 tips for effective mro partnerships and aviation parts	5	4	5	Content Marketing Expert
short informative article	top 5 tips for effective mro support and aircraft support	5	4	5	Content Marketing Expert
white paper	advancements in aircraft maintenance and mro operations	5	4	5	Content Marketing Expert
white paper	advancements in aircraft support and aircraft repair	5	4	5	Content Marketing Expert
white paper	advancements in airline mro and aviation supply chain	5	4	5	Content Marketing Expert
white paper	advancements in airline operations and aviation logistics	5	4	5	Content Marketing Expert
white paper	advancements in aviation analytics and mro industry	5	4	5	Content Marketing Expert

white paper	advancements in aviation mro and mro consultancy	5	4	5	Content Marketing Expert
white paper	advancements in aviation parts and mro services	5	4	5	Content Marketing Expert
white paper	advancements in aviation repair and aviation technology	5	5	5	Content Marketing Expert
white paper	advancements in mro software and airline maintenance	5	5	5	Content Marketing Expert
white paper	advancements in mro solutions and airline repair	5	4	5	Content Marketing Expert
white paper	enhancing aircraft maintenance with mro operations	5	4	5	Content Marketing Expert
white paper	enhancing aircraft support with aircraft repair	5	4	5	Content Marketing Expert
white paper	enhancing airline mro with aviation supply chain	5	4	5	Content Marketing Expert
white paper	enhancing airline operations with aviation logistics	5	4	5	Content Marketing Expert
white paper	enhancing aviation analytics with mro industry	5	4	5	Content Marketing Expert
white paper	enhancing aviation mro with mro consultancy	5	4	5	Content Marketing Expert
white paper	enhancing aviation parts with mro services	5	4	5	Content Marketing Expert
white paper	enhancing aviation repair with aviation technology	5	5	5	Content Marketing Expert

white paper	enhancing mro software with airline maintenance	5	4	5	Content Marketing Expert
white paper	enhancing mro solutions with airline repair	5	4	5	Content Marketing Expert
white paper	integrating airline mro with aviation supply chain for optimal performance	5	4	5	Content Marketing Expert
white paper	integrating airline operations with aviation logistics for optimal performance	5	4	5	Content Marketing Expert
white paper	integrating aviation analytics with mro industry for optimal performance	5	5	5	Content Marketing Expert
white paper	integrating aviation mro with mro consultancy for optimal performance	5	4	5	Content Marketing Expert
white paper	integrating aviation repair with aviation technology for optimal performance	5	5	5	Content Marketing Expert
white paper	integrating mro software with airline maintenance for optimal performance	5	5	5	Content Marketing Expert
case study	implementing aircraft repair in aircraft overhaul	5	4	5	Copy Writer Expert
case study	implementing airline maintenance in aviation safety	5	4	5	Copy Writer Expert
case study	implementing airline repair in aviation engineering	4	3	4	Copy Writer Expert
case study	implementing aviation logistics in aircraft parts	4	3	4	Copy Writer Expert
case study	implementing aviation supply chain in mro support	4	3	4	Copy Writer Expert

case study	implementing aviation technology in aviation management	4	4	4	Copy Writer Expert
case study	implementing mro consultancy in aircraft logistics	3	3	4	Copy Writer Expert
case study	implementing mro industry in aviation maintenance	5	4	5	Copy Writer Expert
case study	implementing mro operations in mro partnerships	5	4	5	Copy Writer Expert
case study	implementing mro services in aircraft engineering	4	3	4	Copy Writer Expert
case study	lessons learned from airline maintenance and aviation safety	5	4	5	Copy Writer Expert
case study	lessons learned from aviation logistics and aircraft parts	4	3	4	Copy Writer Expert
case study	lessons learned from aviation supply chain and mro support	4	3	4	Copy Writer Expert
case study	lessons learned from aviation technology and aviation management	4	4	4	Copy Writer Expert
case study	lessons learned from mro consultancy and aircraft logistics	3	3	4	Copy Writer Expert
case study	lessons learned from mro industry and aviation maintenance	5	4	5	Copy Writer Expert
case study	lessons learned from mro services and aircraft engineering	4	3	4	Copy Writer Expert
case study	real-world applications of aircraft repair in aircraft overhaul	5	4	5	Copy Writer Expert
case study	real-world applications of airline maintenance	5	4	5	Copy Writer Expert

	in aviation safety				
case study	real-world applications of airline repair in aviation engineering	4	3	4	Copy Writer Expert
case study	real-world applications of aviation logistics in aircraft parts	4	3	4	Copy Writer Expert
case study	real-world applications of aviation supply chain in mro support	4	3	4	Copy Writer Expert
case study	real-world applications of aviation technology in aviation management	4	4	4	Copy Writer Expert
case study	real-world applications of mro consultancy in aircraft logistics	3	3	4	Copy Writer Expert
case study	real-world applications of mro industry in aviation maintenance	5	4	5	Copy Writer Expert
case study	real-world applications of mro operations in mro partnerships	5	4	5	Copy Writer Expert
case study	real-world applications of mro services in aircraft engineering	4	3	4	Copy Writer Expert
short informative article	best practices for aircraft engineering and airline operations	4	4	4	Copy Writer Expert
short informative article	best practices for aircraft logistics and mro software	4	3	4	Copy Writer Expert
short informative article	best practices for aircraft overhaul and mro solutions	5	4	5	Copy Writer Expert

short informative article	best practices for aircraft parts and aviation mro	5	4	5	Copy Writer Expert
short informative article	best practices for aviation engineering and aircraft maintenance	5	4	5	Copy Writer Expert
short informative article	best practices for aviation maintenance and aviation repair	5	4	5	Copy Writer Expert
short informative article	best practices for aviation management and airline mro	5	4	5	Copy Writer Expert
short informative article	best practices for aviation safety and aviation analytics	5	4	5	Copy Writer Expert
short informative article	best practices for mro partnerships and aviation parts	4	3	4	Copy Writer Expert
short informative article	best practices for mro support and aircraft support	4	3	4	Copy Writer Expert
short informative article	key insights on aircraft engineering and airline operations	4	4	4	Copy Writer Expert
short informative article	key insights on aircraft logistics and mro software	4	3	4	Copy Writer Expert
short informative article	key insights on aircraft parts and aviation mro	5	4	5	Copy Writer Expert
short informative article	key insights on aviation maintenance and aviation repair	5	4	5	Copy Writer Expert
short informative article	key insights on aviation management and airline mro	5	4	5	Copy Writer Expert

short informative article	key insights on aviation safety and aviation analytics	5	4	5	Copy Writer Expert
short informative article	key insights on mro support and aircraft support	4	3	4	Copy Writer Expert
short informative article	top 5 tips for effective aircraft engineering and airline operations	4	4	4	Copy Writer Expert
short informative article	top 5 tips for effective aircraft logistics and mro software	4	3	4	Copy Writer Expert
short informative article	top 5 tips for effective aircraft overhaul and mro solutions	5	4	5	Copy Writer Expert
short informative article	top 5 tips for effective aircraft parts and aviation mro	5	4	5	Copy Writer Expert
short informative article	top 5 tips for effective aviation engineering and aircraft maintenance	5	4	5	Copy Writer Expert
short informative article	top 5 tips for effective aviation maintenance and aviation repair	5	4	5	Copy Writer Expert
short informative article	top 5 tips for effective aviation management and airline mro	5	4	5	Copy Writer Expert
short informative article	top 5 tips for effective aviation safety and aviation analytics	5	4	5	Copy Writer Expert
short informative article	top 5 tips for effective mro partnerships and aviation parts	4	3	4	Copy Writer Expert
short informative article	top 5 tips for effective mro support and aircraft support	4	3	4	Copy Writer Expert

white paper	advancements in aircraft maintenance and mro operations	5	4	5	Copy Writer Expert
white paper	advancements in aircraft support and aircraft repair	5	4	5	Copy Writer Expert
white paper	advancements in airline mro and aviation supply chain	5	4	5	Copy Writer Expert
white paper	advancements in airline operations and aviation logistics	5	4	5	Copy Writer Expert
white paper	advancements in aviation analytics and mro industry	5	4	5	Copy Writer Expert
white paper	advancements in aviation mro and mro consultancy	5	4	5	Copy Writer Expert
white paper	advancements in aviation parts and mro services	5	4	5	Copy Writer Expert
white paper	advancements in aviation repair and aviation technology	5	4	5	Copy Writer Expert
white paper	advancements in mro software and airline maintenance	5	4	5	Copy Writer Expert
white paper	advancements in mro solutions and airline repair	5	4	5	Copy Writer Expert
white paper	enhancing aircraft maintenance with mro operations	5	4	5	Copy Writer Expert
white paper	enhancing aircraft support with aircraft repair	5	4	5	Copy Writer Expert
white paper	enhancing airline mro with aviation supply chain	5	4	5	Copy Writer Expert
white paper	enhancing airline operations with aviation logistics	5	4	5	Copy Writer Expert
white paper	enhancing aviation analytics with mro industry	5	4	5	Copy Writer Expert

white paper	enhancing aviation mro with mro consultancy	5	4	5	Copy Writer Expert
white paper	enhancing aviation parts with mro services	5	4	5	Copy Writer Expert
white paper	enhancing aviation repair with aviation technology	5	4	5	Copy Writer Expert
white paper	enhancing mro software with airline maintenance	5	4	5	Copy Writer Expert
white paper	enhancing mro solutions with airline repair	5	4	5	Copy Writer Expert
white paper	integrating airline mro with aviation supply chain for optimal performance	5	5	5	Copy Writer Expert
white paper	integrating airline operations with aviation logistics for optimal performance	5	5	5	Copy Writer Expert
white paper	integrating aviation analytics with mro industry for optimal performance	5	5	5	Copy Writer Expert
white paper	integrating aviation mro with mro consultancy for optimal performance	5	5	5	Copy Writer Expert
white paper	integrating aviation repair with aviation technology for optimal performance	5	5	5	Copy Writer Expert
white paper	integrating mro software with airline maintenance for optimal performance	5	5	5	Copy Writer Expert
case study	implementing aircraft repair in aircraft overhaul	5	4	5	Flight Educator
case study	implementing airline maintenance in aviation safety	5	5	5	Flight Educator
case study	implementing airline repair in aviation	4	4	4	Flight Educator

	engineering				
case study	implementing aviation logistics in aircraft parts	5	4	4	Flight Educator
case study	implementing aviation supply chain in mro support	5	4	4	Flight Educator
case study	implementing aviation technology in aviation management	4	4	4	Flight Educator
case study	implementing mro consultancy in aircraft logistics	4	3	4	Flight Educator
case study	implementing mro industry in aviation maintenance	5	5	5	Flight Educator
case study	implementing mro operations in mro partnerships	5	5	5	Flight Educator
case study	implementing mro services in aircraft engineering	5	4	5	Flight Educator
case study	lessons learned from airline maintenance and aviation safety	5	5	5	Flight Educator
case study	lessons learned from aviation logistics and aircraft parts	5	4	4	Flight Educator
case study	lessons learned from aviation supply chain and mro support	5	4	4	Flight Educator
case study	lessons learned from aviation technology and aviation management	4	4	4	Flight Educator
case study	lessons learned from mro consultancy and aircraft logistics	4	3	4	Flight Educator
case study	lessons learned from mro industry and aviation maintenance	5	5	5	Flight Educator
case study	lessons learned from mro services and	5	4	5	Flight Educator

	aircraft engineering				
case study	real-world applications of aircraft repair in aircraft overhaul	5	4	5	Flight Educator
case study	real-world applications of airline maintenance in aviation safety	5	5	5	Flight Educator
case study	real-world applications of airline repair in aviation engineering	4	4	4	Flight Educator
case study	real-world applications of aviation logistics in aircraft parts	5	4	4	Flight Educator
case study	real-world applications of aviation supply chain in mro support	5	4	4	Flight Educator
case study	real-world applications of aviation technology in aviation management	4	4	4	Flight Educator
case study	real-world applications of mro consultancy in aircraft logistics	4	3	4	Flight Educator
case study	real-world applications of mro industry in aviation maintenance	5	5	5	Flight Educator
case study	real-world applications of mro operations in mro partnerships	5	5	5	Flight Educator
case study	real-world applications of mro services in aircraft engineering	5	4	5	Flight Educator
short informative article	best practices for aircraft engineering and airline operations	5	4	4	Flight Educator

short informative article	best practices for aircraft logistics and mro software	5	4	4	Flight Educator
short informative article	best practices for aircraft overhaul and mro solutions	5	4	5	Flight Educator
short informative article	best practices for aircraft parts and aviation mro	5	4	4	Flight Educator
short informative article	best practices for aviation engineering and aircraft maintenance	5	4	5	Flight Educator
short informative article	best practices for aviation maintenance and aviation repair	5	5	5	Flight Educator
short informative article	best practices for aviation management and airline mro	5	4	5	Flight Educator
short informative article	best practices for aviation safety and aviation analytics	5	5	5	Flight Educator
short informative article	best practices for mro partnerships and aviation parts	5	4	5	Flight Educator
short informative article	best practices for mro support and aircraft support	5	4	4	Flight Educator
short informative article	key insights on aircraft engineering and airline operations	5	4	4	Flight Educator
short informative article	key insights on aircraft logistics and mro software	5	4	4	Flight Educator
short informative article	key insights on aircraft parts and aviation mro	5	4	4	Flight Educator

short informative article	key insights on aviation maintenance and aviation repair	5	5	5	Flight Educator
short informative article	key insights on aviation management and airline mro	5	4	5	Flight Educator
short informative article	key insights on aviation safety and aviation analytics	5	5	5	Flight Educator
short informative article	key insights on mro support and aircraft support	5	4	4	Flight Educator
short informative article	top 5 tips for effective aircraft engineering and airline operations	5	4	4	Flight Educator
short informative article	top 5 tips for effective aircraft logistics and mro software	5	4	4	Flight Educator
short informative article	top 5 tips for effective aircraft overhaul and mro solutions	5	4	5	Flight Educator
short informative article	top 5 tips for effective aircraft parts and aviation mro	5	4	4	Flight Educator
short informative article	top 5 tips for effective aviation engineering and aircraft maintenance	5	4	5	Flight Educator
short informative article	top 5 tips for effective aviation maintenance and aviation repair	5	5	5	Flight Educator
short informative article	top 5 tips for effective aviation management and airline mro	5	4	5	Flight Educator
short informative article	top 5 tips for effective aviation safety and aviation analytics	5	5	5	Flight Educator

short informative article	top 5 tips for effective mro partnerships and aviation parts	5	4	5	Flight Educator
short informative article	top 5 tips for effective mro support and aircraft support	5	4	4	Flight Educator
white paper	advancements in aircraft maintenance and mro operations	5	4	5	Flight Educator
white paper	advancements in aircraft support and aircraft repair	5	4	5	Flight Educator
white paper	advancements in airline mro and aviation supply chain	5	5	5	Flight Educator
white paper	advancements in airline operations and aviation logistics	5	4	5	Flight Educator
white paper	advancements in aviation analytics and mro industry	5	5	5	Flight Educator
white paper	advancements in aviation mro and mro consultancy	5	4	5	Flight Educator
white paper	advancements in aviation parts and mro services	5	4	5	Flight Educator
white paper	advancements in aviation repair and aviation technology	5	5	5	Flight Educator
white paper	advancements in mro software and airline maintenance	5	5	5	Flight Educator
white paper	advancements in mro solutions and airline repair	5	4	5	Flight Educator
white paper	enhancing aircraft maintenance with mro operations	5	4	5	Flight Educator
white paper	enhancing aircraft support with aircraft repair	5	4	5	Flight Educator

white paper	enhancing airline mro with aviation supply chain	5	5	5	Flight Educator
white paper	enhancing airline operations with aviation logistics	5	4	5	Flight Educator
white paper	enhancing aviation analytics with mro industry	5	5	5	Flight Educator
white paper	enhancing aviation mro with mro consultancy	5	4	5	Flight Educator
white paper	enhancing aviation parts with mro services	5	4	5	Flight Educator
white paper	enhancing aviation repair with aviation technology	5	5	5	Flight Educator
white paper	enhancing mro software with airline maintenance	5	5	5	Flight Educator
white paper	enhancing mro solutions with airline repair	5	4	5	Flight Educator
white paper	integrating airline mro with aviation supply chain for optimal performance	5	5	5	Flight Educator
white paper	integrating airline operations with aviation logistics for optimal performance	5	5	5	Flight Educator
white paper	integrating aviation analytics with mro industry for optimal performance	5	5	5	Flight Educator
white paper	integrating aviation mro with mro consultancy for optimal performance	5	5	5	Flight Educator
white paper	integrating aviation repair with aviation technology for optimal performance	5	5	5	Flight Educator
white paper	integrating mro software with airline maintenance for	5	5	5	Flight Educator

	optimal performance				
case study	implementing aircraft repair in aircraft overhaul	5	4	5	Flight Engineer
case study	implementing airline maintenance in aviation safety	5	4	5	Flight Engineer
case study	implementing airline repair in aviation engineering	4	3	4	Flight Engineer
case study	implementing aviation logistics in aircraft parts	4	3	4	Flight Engineer
case study	implementing aviation supply chain in mro support	4	3	4	Flight Engineer
case study	implementing aviation technology in aviation management	5	4	5	Flight Engineer
case study	implementing mro consultancy in aircraft logistics	4	3	4	Flight Engineer
case study	implementing mro industry in aviation maintenance	5	4	5	Flight Engineer
case study	implementing mro operations in mro partnerships	5	4	5	Flight Engineer
case study	implementing mro services in aircraft engineering	5	4	5	Flight Engineer
case study	lessons learned from airline maintenance and aviation safety	5	4	5	Flight Engineer
case study	lessons learned from aviation logistics and aircraft parts	4	3	4	Flight Engineer
case study	lessons learned from aviation supply chain and mro support	4	3	4	Flight Engineer
case study	lessons learned from aviation technology and aviation management	5	4	5	Flight Engineer

case study	lessons learned from mro consultancy and aircraft logistics	4	3	4	Flight Engineer
case study	lessons learned from mro industry and aviation maintenance	5	4	5	Flight Engineer
case study	lessons learned from mro services and aircraft engineering	5	4	5	Flight Engineer
case study	real-world applications of aircraft repair in aircraft overhaul	5	4	5	Flight Engineer
case study	real-world applications of airline maintenance in aviation safety	5	4	5	Flight Engineer
case study	real-world applications of airline repair in aviation engineering	4	3	4	Flight Engineer
case study	real-world applications of aviation logistics in aircraft parts	4	3	4	Flight Engineer
case study	real-world applications of aviation supply chain in mro support	4	3	4	Flight Engineer
case study	real-world applications of aviation technology in aviation management	5	4	5	Flight Engineer
case study	real-world applications of mro consultancy in aircraft logistics	4	3	4	Flight Engineer
case study	real-world applications of mro industry in aviation maintenance	5	4	5	Flight Engineer
case study	real-world applications of mro operations in mro partnerships	5	4	5	Flight Engineer

case study	real-world applications of mro services in aircraft engineering	5	4	5	Flight Engineer
short informative article	best practices for aircraft engineering and airline operations	5	4	5	Flight Engineer
short informative article	best practices for aircraft logistics and mro software	5	4	5	Flight Engineer
short informative article	best practices for aircraft overhaul and mro solutions	5	4	5	Flight Engineer
short informative article	best practices for aircraft parts and aviation mro	5	4	5	Flight Engineer
short informative article	best practices for aviation engineering and aircraft maintenance	5	4	5	Flight Engineer
short informative article	best practices for aviation maintenance and aviation repair	5	4	5	Flight Engineer
short informative article	best practices for aviation management and airline mro	5	4	5	Flight Engineer
short informative article	best practices for aviation safety and aviation analytics	5	4	5	Flight Engineer
short informative article	best practices for mro partnerships and aviation parts	5	4	5	Flight Engineer
short informative article	best practices for mro support and aircraft support	5	4	5	Flight Engineer
short informative article	key insights on aircraft engineering and airline operations	5	4	5	Flight Engineer

short informative article	key insights on aircraft logistics and mro software	5	4	5	Flight Engineer
short informative article	key insights on aircraft parts and aviation mro	5	4	5	Flight Engineer
short informative article	key insights on aviation maintenance and aviation repair	5	4	5	Flight Engineer
short informative article	key insights on aviation management and airline mro	5	4	5	Flight Engineer
short informative article	key insights on aviation safety and aviation analytics	5	4	5	Flight Engineer
short informative article	key insights on mro support and aircraft support	5	4	5	Flight Engineer
short informative article	top 5 tips for effective aircraft engineering and airline operations	5	4	5	Flight Engineer
short informative article	top 5 tips for effective aircraft logistics and mro software	5	4	5	Flight Engineer
short informative article	top 5 tips for effective aircraft overhaul and mro solutions	5	4	5	Flight Engineer
short informative article	top 5 tips for effective aircraft parts and aviation mro	5	4	5	Flight Engineer
short informative article	top 5 tips for effective aviation engineering and aircraft maintenance	5	4	5	Flight Engineer
short informative article	top 5 tips for effective aviation maintenance and aviation repair	5	4	5	Flight Engineer

short informative article	top 5 tips for effective aviation management and airline mro	5	4	5	Flight Engineer
short informative article	top 5 tips for effective aviation safety and aviation analytics	5	4	5	Flight Engineer
short informative article	top 5 tips for effective mro partnerships and aviation parts	5	4	5	Flight Engineer
short informative article	top 5 tips for effective mro support and aircraft support	5	4	5	Flight Engineer
white paper	advancements in aircraft maintenance and mro operations	5	4	5	Flight Engineer
white paper	advancements in aircraft support and aircraft repair	5	4	5	Flight Engineer
white paper	advancements in airline mro and aviation supply chain	5	4	5	Flight Engineer
white paper	advancements in airline operations and aviation logistics	5	4	5	Flight Engineer
white paper	advancements in aviation analytics and mro industry	5	4	5	Flight Engineer
white paper	advancements in aviation mro and mro consultancy	5	4	5	Flight Engineer
white paper	advancements in aviation parts and mro services	5	4	5	Flight Engineer
white paper	advancements in aviation repair and aviation technology	5	4	5	Flight Engineer
white paper	advancements in mro software and airline maintenance	5	4	5	Flight Engineer
white paper	advancements in mro solutions and	5	4	5	Flight Engineer

	airline repair				
white paper	enhancing aircraft maintenance with mro operations	5	4	5	Flight Engineer
white paper	enhancing aircraft support with aircraft repair	5	4	5	Flight Engineer
white paper	enhancing airline mro with aviation supply chain	5	4	5	Flight Engineer
white paper	enhancing airline operations with aviation logistics	5	4	5	Flight Engineer
white paper	enhancing aviation analytics with mro industry	5	4	5	Flight Engineer
white paper	enhancing aviation mro with mro consultancy	5	4	5	Flight Engineer
white paper	enhancing aviation parts with mro services	5	4	5	Flight Engineer
white paper	enhancing aviation repair with aviation technology	5	4	5	Flight Engineer
white paper	enhancing mro software with airline maintenance	5	4	5	Flight Engineer
white paper	enhancing mro solutions with airline repair	5	4	5	Flight Engineer
white paper	integrating airline mro with aviation supply chain for optimal performance	5	4	5	Flight Engineer
white paper	integrating airline operations with aviation logistics for optimal performance	5	4	5	Flight Engineer
white paper	integrating aviation analytics with mro industry for optimal performance	5	4	5	Flight Engineer
white paper	integrating aviation mro with mro consultancy for	5	4	5	Flight Engineer

	optimal performance				
white paper	integrating aviation repair with aviation technology for optimal performance	5	4	5	Flight Engineer
white paper	integrating mro software with airline maintenance for optimal performance	5	4	5	Flight Engineer
case study	implementing aircraft repair in aircraft overhaul	5	3	5	SEO Expert
case study	implementing airline maintenance in aviation safety	3	3	5	SEO Expert
case study	implementing airline repair in aviation engineering	3	5	5	SEO Expert
case study	implementing aviation logistics in aircraft parts	5	3	5	SEO Expert
case study	implementing aviation supply chain in mro support	5	3	5	SEO Expert
case study	implementing aviation technology in aviation management	3	3	5	SEO Expert
case study	implementing mro consultancy in aircraft logistics	5	3	5	SEO Expert
case study	implementing mro industry in aviation maintenance	5	3	5	SEO Expert
case study	implementing mro operations in mro partnerships	5	5	5	SEO Expert
case study	implementing mro services in aircraft engineering	5	5	5	SEO Expert
case study	lessons learned from airline maintenance and aviation safety	3	3	3	SEO Expert
case study	lessons learned from aviation logistics and aircraft parts	5	3	3	SEO Expert

case study	lessons learned from aviation supply chain and mro support	5	3	3	SEO Expert
case study	lessons learned from aviation technology and aviation management	3	3	3	SEO Expert
case study	lessons learned from mro consultancy and aircraft logistics	5	3	3	SEO Expert
case study	lessons learned from mro industry and aviation maintenance	5	3	3	SEO Expert
case study	lessons learned from mro services and aircraft engineering	5	5	3	SEO Expert
case study	real-world applications of aircraft repair in aircraft overhaul	5	3	3	SEO Expert
case study	real-world applications of airline maintenance in aviation safety	3	3	3	SEO Expert
case study	real-world applications of airline repair in aviation engineering	3	5	3	SEO Expert
case study	real-world applications of aviation logistics in aircraft parts	5	3	3	SEO Expert
case study	real-world applications of aviation supply chain in mro support	5	3	3	SEO Expert
case study	real-world applications of aviation technology in aviation management	3	3	3	SEO Expert
case study	real-world applications of mro consultancy in aircraft logistics	5	3	3	SEO Expert

case study	real-world applications of mro industry in aviation maintenance	5	3	3	SEO Expert
case study	real-world applications of mro operations in mro partnerships	5	5	3	SEO Expert
case study	real-world applications of mro services in aircraft engineering	5	5	3	SEO Expert
short informative article	best practices for aircraft engineering and airline operations	5	5	3	SEO Expert
short informative article	best practices for aircraft logistics and mro software	5	3	3	SEO Expert
short informative article	best practices for aircraft overhaul and mro solutions	5	3	3	SEO Expert
short informative article	best practices for aircraft parts and aviation mro	5	3	3	SEO Expert
short informative article	best practices for aviation engineering and aircraft maintenance	5	5	3	SEO Expert
short informative article	best practices for aviation maintenance and aviation repair	3	3	3	SEO Expert
short informative article	best practices for aviation management and airline mro	5	3	3	SEO Expert
short informative article	best practices for aviation safety and aviation analytics	3	3	3	SEO Expert
short informative article	best practices for mro partnerships and aviation parts	5	3	3	SEO Expert

short informative article	best practices for mro support and aircraft support	5	3	3	SEO Expert
short informative article	key insights on aircraft engineering and airline operations	5	5	3	SEO Expert
short informative article	key insights on aircraft logistics and mro software	5	3	3	SEO Expert
short informative article	key insights on aircraft parts and aviation mro	5	3	3	SEO Expert
short informative article	key insights on aviation maintenance and aviation repair	3	3	3	SEO Expert
short informative article	key insights on aviation management and airline mro	5	3	3	SEO Expert
short informative article	key insights on aviation safety and aviation analytics	3	3	3	SEO Expert
short informative article	key insights on mro support and aircraft support	5	3	3	SEO Expert
short informative article	top 5 tips for effective aircraft engineering and airline operations	5	5	5	SEO Expert
short informative article	top 5 tips for effective aircraft logistics and mro software	5	3	5	SEO Expert
short informative article	top 5 tips for effective aircraft overhaul and mro solutions	5	3	5	SEO Expert
short informative article	top 5 tips for effective aircraft parts and aviation mro	5	3	5	SEO Expert

short informative article	top 5 tips for effective aviation engineering and aircraft maintenance	5	5	5	SEO Expert
short informative article	top 5 tips for effective aviation maintenance and aviation repair	3	3	5	SEO Expert
short informative article	top 5 tips for effective aviation management and airline mro	5	3	5	SEO Expert
short informative article	top 5 tips for effective aviation safety and aviation analytics	3	3	5	SEO Expert
short informative article	top 5 tips for effective mro partnerships and aviation parts	5	3	5	SEO Expert
short informative article	top 5 tips for effective mro support and aircraft support	5	3	5	SEO Expert
white paper	advancements in aircraft maintenance and mro operations	5	5	5	SEO Expert
white paper	advancements in aircraft support and aircraft repair	5	3	5	SEO Expert
white paper	advancements in airline mro and aviation supply chain	5	3	5	SEO Expert
white paper	advancements in airline operations and aviation logistics	3	5	5	SEO Expert
white paper	advancements in aviation analytics and mro industry	5	3	5	SEO Expert
white paper	advancements in aviation mro and mro consultancy	5	3	5	SEO Expert
white paper	advancements in aviation parts and mro services	5	3	5	SEO Expert

white paper	advancements in aviation repair and aviation technology	3	3	5	SEO Expert
white paper	advancements in mro software and airline maintenance	5	3	5	SEO Expert
white paper	advancements in mro solutions and airline repair	5	3	5	SEO Expert
white paper	enhancing aircraft maintenance with mro operations	5	5	3	SEO Expert
white paper	enhancing aircraft support with aircraft repair	5	3	3	SEO Expert
white paper	enhancing airline mro with aviation supply chain	5	3	3	SEO Expert
white paper	enhancing airline operations with aviation logistics	3	5	3	SEO Expert
white paper	enhancing aviation analytics with mro industry	5	3	3	SEO Expert
white paper	enhancing aviation mro with mro consultancy	5	3	3	SEO Expert
white paper	enhancing aviation parts with mro services	5	3	3	SEO Expert
white paper	enhancing aviation repair with aviation technology	3	3	3	SEO Expert
white paper	enhancing mro software with airline maintenance	5	3	3	SEO Expert
white paper	enhancing mro solutions with airline repair	5	3	3	SEO Expert
white paper	integrating airline mro with aviation supply chain for optimal performance	5	3	3	SEO Expert
white paper	integrating airline operations with aviation logistics for optimal performance	3	5	3	SEO Expert

white paper	integrating aviation analytics with mro industry for optimal performance	5	3	3	SEO Expert
white paper	integrating aviation mro with mro consultancy for optimal performance	5	3	3	SEO Expert
white paper	integrating aviation repair with aviation technology for optimal performance	3	3	3	SEO Expert
white paper	integrating mro software with airline maintenance for optimal performance	5	3	3	SEO Expert

Table C4

AHP Analysis Results for Evaluating the GPT4 in Generating Content Ideas

Title	Content Type	MRtI	MT	MAfCT	Weighted Score	Effectiveness (%)
advancements in aircraft maintenance and mro operations	white paper	5	4.167	5	4.783	95.66
advancements in aircraft support and aircraft repair	white paper	5	3.833	5	4.695	93.9
advancements in airline mro and aviation supply chain	white paper	5	4	5	4.739	94.78
advancements in airline operations and aviation logistics	white paper	4.667	4.167	5	4.673	93.46
advancements in aviation analytics and mro industry	white paper	5	4.167	5	4.783	95.66
advancements in aviation mro and mro consultancy	white paper	5	3.833	5	4.695	93.9
advancements in aviation parts and mro services	white paper	5	3.833	5	4.695	93.9

advancements in aviation repair and aviation technology	white paper	4.667	4.333	5	4.717	94.34
advancements in mro software and airline maintenance	white paper	5	4.167	5	4.783	95.66
advancements in mro solutions and airline repair	white paper	5	3.833	5	4.695	93.9
best practices for aircraft engineering and airline operations	short informative article	4.833	4.167	4.333	4.454	89.08
best practices for aircraft logistics and mro software	short informative article	4.833	3.667	4.333	4.323	86.46
best practices for aircraft overhaul and mro solutions	short informative article	5	3.833	4.667	4.559	91.18
best practices for aircraft parts and aviation mro	short informative article	5	3.833	4.5	4.49	89.8
best practices for aviation engineering and aircraft maintenance	short informative article	5	4.167	4.667	4.646	92.92
best practices for aviation maintenance and aviation repair	short informative article	4.667	4	4.667	4.493	89.86
best practices for aviation management and airline mro	short informative article	5	3.833	4.667	4.559	91.18
best practices for aviation safety and aviation analytics	short informative article	4.667	4.167	4.667	4.536	90.72
best practices for mro partnerships and aviation parts	short informative article	4.833	3.667	4.5	4.392	87.84
best practices for mro support and aircraft support	short informative article	4.833	3.667	4.333	4.323	86.46

enhancing aircraft maintenance with mro operations	white paper	5	4.167	4.667	4.646	92.92
enhancing aircraft support with aircraft repair	white paper	5	3.833	4.667	4.559	91.18
enhancing airline mro with aviation supply chain	white paper	5	4	4.667	4.602	92.04
enhancing airline operations with aviation logistics	white paper	4.667	4.167	4.667	4.536	90.72
enhancing aviation analytics with mro industry	white paper	5	4.167	4.667	4.646	92.92
enhancing aviation mro with mro consultancy	white paper	5	3.833	4.667	4.559	91.18
enhancing aviation parts with mro services	white paper	5	3.833	4.667	4.559	91.18
enhancing aviation repair with aviation technology	white paper	4.667	4.333	4.667	4.58	91.6
enhancing mro software with airline maintenance	white paper	5	4	4.667	4.602	92.04
enhancing mro solutions with airline repair	white paper	5	3.833	4.667	4.559	91.18
implementing aircraft repair in aircraft overhaul	case study	5	3.667	5	4.652	93.04
implementing airline maintenance in aviation safety	case study	4.667	4	5	4.63	92.6
implementing airline repair in aviation engineering	case study	4.167	3.5	4.5	4.13	82.6
implementing aviation logistics in aircraft	case study	4.667	3.5	4.5	4.294	85.88

parts						
implementing aviation supply chain in mro support	case study	4.667	3.5	4.5	4.294	85.88
implementing aviation technology in aviation management	case study	4.333	4	4.667	4.383	87.66
implementing mro consultancy in aircraft logistics	case study	4.167	3	4.333	3.931	78.62
implementing mro industry in aviation maintenance	case study	5	3.833	5	4.695	93.9
implementing mro operations in mro partnerships	case study	5	4.333	5	4.826	96.52
implementing mro services in aircraft engineering	case study	4.833	3.833	4.833	4.572	91.44
integrating airline mro with aviation supply chain for optimal performance	white paper	5	4.167	4.667	4.646	92.92
integrating airline operations with aviation logistics for optimal performance	white paper	4.667	4.5	4.667	4.623	92.46
integrating aviation analytics with mro industry for optimal performance	white paper	5	4.5	4.667	4.733	94.66
integrating aviation mro with mro consultancy for optimal performance	white paper	5	4.167	4.667	4.646	92.92
integrating aviation repair with aviation technology for optimal performance	white paper	4.667	4.5	4.667	4.623	92.46

integrating mro software with airline maintenance for optimal performance	white paper	5	4.333	4.667	4.689	93.78
key insights on aircraft engineering and airline operations	short informative article	4.833	4.167	4.333	4.454	89.08
key insights on aircraft logistics and mro software	short informative article	4.833	3.667	4.333	4.323	86.46
key insights on aircraft parts and aviation mro	short informative article	5	3.833	4.5	4.49	89.8
key insights on aviation maintenance and aviation repair	short informative article	4.667	4	4.667	4.493	89.86
key insights on aviation management and airline mro	short informative article	5	3.833	4.667	4.559	91.18
key insights on aviation safety and aviation analytics	short informative article	4.667	4.167	4.667	4.536	90.72
key insights on mro support and aircraft support	short informative article	4.833	3.667	4.333	4.323	86.46
lessons learned from airline maintenance and aviation safety	case study	4.667	4	4.667	4.493	89.86
lessons learned from aviation logistics and aircraft parts	case study	4.667	3.5	4.167	4.157	83.14
lessons learned from aviation supply chain and mro support	case study	4.667	3.5	4.167	4.157	83.14
lessons learned from aviation technology and aviation management	case study	4.333	4	4.333	4.246	84.92

lessons learned from mro consultancy and aircraft logistics	case study	4.167	3	4	3.794	75.88
lessons learned from mro industry and aviation maintenance	case study	5	3.833	4.667	4.559	91.18
lessons learned from mro services and aircraft engineering	case study	4.833	3.833	4.5	4.435	88.7
real-world applications of aircraft repair in aircraft overhaul	case study	5	3.667	4.667	4.515	90.3
real-world applications of airline maintenance in aviation safety	case study	4.667	4	4.667	4.493	89.86
real-world applications of airline repair in aviation engineering	case study	4.167	3.5	4.167	3.993	79.86
real-world applications of aviation logistics in aircraft parts	case study	4.667	3.5	4.167	4.157	83.14
real-world applications of aviation supply chain in mro support	case study	4.667	3.5	4.167	4.157	83.14
real-world applications of aviation technology in aviation management	case study	4.333	4	4.333	4.246	84.92
real-world applications of mro consultancy in aircraft logistics	case study	4.167	3	4	3.794	75.88
real-world applications of mro industry in aviation maintenance	case study	5	3.833	4.667	4.559	91.18
real-world applications of mro operations in mro partnerships	case study	5	4.333	4.667	4.689	93.78

real-world applications of mro services in aircraft engineering	case study	4.833	3.833	4.5	4.435	88.7
top 5 tips for effective aircraft engineering and airline operations	short informative article	4.833	4.167	4.667	4.591	91.82
top 5 tips for effective aircraft logistics and mro software	short informative article	4.833	3.667	4.667	4.46	89.2
top 5 tips for effective aircraft overhaul and mro solutions	short informative article	5	3.833	5	4.695	93.9
top 5 tips for effective aircraft parts and aviation mro	short informative article	5	3.833	4.833	4.627	92.54
top 5 tips for effective aviation engineering and aircraft maintenance	short informative article	5	4.167	5	4.783	95.66
top 5 tips for effective aviation maintenance and aviation repair	short informative article	4.667	4	5	4.63	92.6
top 5 tips for effective aviation management and airline mro	short informative article	5	3.833	5	4.695	93.9
top 5 tips for effective aviation safety and aviation analytics	short informative article	4.667	4.167	5	4.673	93.46
top 5 tips for effective mro partnerships and aviation parts	short informative article	4.833	3.667	4.833	4.529	90.58
top 5 tips for effective mro support and aircraft support	short informative article	4.833	3.667	4.667	4.46	89.2

The columns in this table are defined as follows:

MRtI=Mean Relevance to Industry

MT=Mean Trendiness

MAfCT=Mean Appropriateness for content type

Weighted Score=(Mean Relevance to Industry*its Priority Vector)+(Mean Trendiness*its Priority Vector)+(Mean Appropriateness for content type*its Priority)

Effectiveness (%)= (Weighted score/5)*100)

Case Study 2: Evaluating the AviationGPT in copywriting the short informative

Articles

Table C5

Grammarly Scores for All Contents

File Name	Score	Word Count	Critical Issues	Advanced Issues	Unique Words (%)	Rare Words (%)	Sentence Length (words)	Clarity Issues	Delivery Issues	Correctness Issues
AI1	88	329	11	11	55	36	15.7	9	2	0
AI-H1	94	319	7	7	54	27	18.8	4	1	2
H1	82	331	3	15	53	25	23.6	7	3	8
AI2	86	308	11	11	55	37	14.7	8	1	1
AI-H2	86	306	12	12	55	39	17	10	2	1
H2	82	501	3	22	41	38	25.1	15	4	4
AI3	88	408	13	13	57	38	12.8	9	0	1
AI-H3	86	399	2	13	56	38	14.8	10	0	3
H3	78	685	10	29	42	34	45.7	8	0	19
AI4	93	616	1	15	43	46	17.6	14	1	1
AI-H4	91	582	1	16	51	30	14.9	13	1	3
H4	84	591	1	25	51	30	15.6	17	7	2
AI5	95	514	1	9	45	36	15.1	6	1	2
AI-H5	93	528	1	12	46	35	15.1	9	1	2
H5	86	579	1	20	45	33	17	10	3	6
AI6	91	619	0	16	39	42	13.2	13	0	1
AI-H6	97	676	1	9	49	44	21.8	6	1	1
H6	90	728	9	16	48	41	25.1	8	2	11
AI7	83	1462	1	60	34	38	15.9	46	5	5
AI-H7	84	1179	1	43	37	45	19.6	34	1	3
H7	83	1209	18	35	33	41	48.4	22	2	22

AI8	85	598	0	21	45	32	17.1	16	3	2
AI-H8	86	675	2	23	44	37	20.5	19	1	2
H8	77	588	14	19	40	37	29.4	12	2	16
AI9	87	997	34	34	38	38	15.1	26	2	1
AI-H9	86	511	1	17	54	36	11.1	11	2	1
H9	74	1294	15	72	38	37	12.2	30	13	36
AI10	95	1095	1	23	30	41	13.5	16	5	3
AI-H10	83	1085	1	46	34	38	17.8	32	11	3
H10	71	1524	20	105	35	38	16.4	46	22	45
AI11	87	1078	3	37	33	42	19.6	33	3	4
AI-H11	86	862	1	28	39	40	14.1	19	7	1
H11	73	1521	16	100	36	37	16.2	48	22	37
AI12	81	1565	3	78	29	41	17	60	5	5
AI-H12	90	1998	2	49	26	46	19	37	8	4
H12	73	2286	26	136	30	39	16.2	71	27	52
AI13	85	1769	1	65	32	45	15.5	52	4	5
AI-H13	92	1369	2	35	30	46	14	32	1	3
H13	74	3079	34	175	28	38	16.2	86	36	65
AI14	82	1079	1	51	36	38	16.1	36	9	4
AI-H14	91	1168	4	31	35	41	13	16	11	4
H14	83	936	5	35	43	37	14.2	17	13	10
AI15	85	992	1	38	30	36	15.7	29	2	2
AI-H15	87	922	1	29	34	37	14.6	23	1	3
H15	74	864	10	49	39	34	18	32	7	17
AI16	87	843	0	29	35	37	15.6	22	2	3
AI-H16	87	796	0	26	33	42	14	25	1	3
H16	80	673	6	29	41	37	18.2	20	5	8
AI17	94	853	1	19	34	42	17.8	17	1	1
AI-H17	91	846	2	23	36	46	15.1	20	2	2
H17	82	655	8	22	47	36	13.6	18	2	10
AI18	85	1165	1	44	28	40	17.4	40	2	1
AI-H18	86	886	2	31	34	43	13	19	8	5

H18	81	859	9	31	37	37	14.8	22	5	12
AI19	85	736	1	29	35	45	13.6	20	3	5
AI-H19	86	886	2	31	34	43	13	19	8	5
H19	75	965	17	43	37	38	14.6	26	4	24
AI20	93	694	2	17	40	40	13.6	15	3	4
AI-H20	94	828	2	18	43	45	11.7	14	2	4
H20	84	893	6	31	39	44	15.4	23	3	10
AI21	86	1100	3	39	33	42	15.1	32	2	8
AI-H21	91	1141	0	31	35	39	15.6	25	2	1
H21	72	1123	15	71	36	34	16.5	31	16	36
AI22	91	828	1	23	34	37	14.8	19	1	1
AI-H22	88	972	2	29	35	40	15.9	21	2	5
H22	77	963	14	42	39	35	18.9	30	2	22
AI23	86	1041	2	36	32	40	15.5	32	1	5
AI-H23	93	1044	2	24	37	41	16.8	19	3	4
H23	77	941	12	44	37	37	16.8	28	8	14
AI24	95	812	2	16	37	43	15.3	14	1	2
AI-H24	94	1058	2	24	34	39	16	17	1	3
H24	79	998	11	43	39	40	20.8	32	4	13
AI25	94	1204	3	27	31	47	14.3	23	1	6
AI-H25	90	1226	3	34	31	36	15.5	23	5	3
H25	81	1295	9	51	34	38	16.8	31	10	13
AI26	92	946	1	25	34	40	12	16	4	2
AI-H26	74	956	1	75	35	34	12.4	15	53	2
H26	72	943	8	71	40	29	13.7	16	47	14
AI27	86	699	1	25	33	43	14.6	19	4	3
AI-H27	86	532	0	19	43	41	14.4	16	3	0
H27	70	509	10	32	51	39	17	18	9	13
AI28	87	642	3	18	37	37	14.9	17	1	3
AI-H28	90	659	0	19	39	35	15.3	12	3	0
H28	76	687	6	40	45	30	14.9	21	9	15
AI29	89	752	1	22	33	40	15.7	19	1	3

AI-H29	86	778	1	26	38	39	17.3	20	2	3
H29	81	683	4	31	42	35	18.5	22	6	7
AI30	85	749	1	28	36	40	14.7	23	1	3
AI-H30	91	859	3	23	36	43	14.6	14	5	5
H30	72	857	6	70	40	44	14.5	28	36	10
AI31	85	1031	40	40	33	33	16.9	33	2	1
AI-H31	86	983	1	35	38	40	19.7	32	1	2
H31	83	933	8	32	39	37	16.7	21	2	16
AI32	87	730	1	25	35	34	13.8	22	3	1
AI-H32	92	613	1	16	39	42	15.3	15	0	1
H32	86	659	1	23	46	37	20.6	18	1	5
AI33	85	1461	54	54	27	34	17.6	39	4	2
AI-H33	87	1456	1	43	37	41	18.9	38	2	3
H33	85	1594	8	48	31	40	25.7	33	1	13
AI34	86	1492	1	50	24	37	17.1	36	3	4
AI-H34	91	1657	43	43	28	43	17.3	38	0	0
H34	86	1622	9	49	31	38	30	33	3	15
AI35	86	2091	74	74	22	35	19.5	47	5	1
AI-H35	93	2014	3	46	33	38	19.9	33	3	4
H35	81	2470	29	80	29	34	32.9	42	5	43
AI36	87	1044	1	35	35	33	15.8	22	6	1
AI-H36	87	1250	2	38	35	38	18.7	27	9	2
H36	80	1066	15	37	38	31	20.5	22	2	21
AI37	84	1357	1	55	33	38	17.9	37	9	1
AI-H37	85	1344	1	50	34	33	16.4	43	4	2
H37	77	1772	20	86	38	36	18.3	54	17	29
AI38	83	1468	2	66	32	37	17.1	42	12	6
AI-H3	93	1296	1	30	36	37	16	25	3	1
H38	82	1432	4	67	41	36	14.8	36	20	11
AI39	82	1221	1	56	36	35	14.7	32	20	1
AI-H39	85	1020	0	37	40	37	15.5	30	3	1
H39	75	1116	17	56	41	30	16.9	29	13	22

AI40	85	1121	1	44	32	35	16.2	35	2	1
AI-H40	90	1030	2	29	39	33	18.4	26	1	3
H40	71	1102	25	58	39	28	16.7	32	16	29
AI41	86	1482	1	51	32	36	19	37	6	5
AI-H41	89	1022	5	28	34	31	18.3	18	6	7
H41	83	2045	13	83	33	39	18.6	55	9	19
AI42	86	1768	1	62	28	38	17.7	47	1	5
AI-H42	89	1175	7	33	36	33	19.3	21	6	8
H42	81	1796	15	79	38	36	20.9	41	13	29
AI43	85	1166	43	43	35	38	17.4	36	3	16
AI-H43	87	1132	38	38	36	38	13.6	26	3	4
H43	84	1730	10	64	34	40	24.7	37	6	16
AI44	84	1301	1	55	34	33	18.3	36	7	4
AI-H44	83	836	1	37	41	32	15.5	27	3	2
H44	84	1414	13	49	33	33	36.3	32	3	18
AI45	87	746	1	25	40	34	15.5	17	2	2
AI-H45	85	570	0	23	47	33	13.6	18	2	1
H45	80	605	4	31	44	37	31.8	17	2	10
AI46	89	1127	2	33	37	34	19.4	27	0	4
AI-H46	85	711	0	28	40	39	13.4	18	1	1
H46	81	974	11	39	42	36	22.7	27	2	17
AI47	83	1476	2	65	30	34	17.4	24	2	1
AI-H47	87	1009	0	35	38	39	12.8	24	2	2
H47	85	1525	6	56	35	34	26.3	32	3	19
AI48	85	1460	2	58	31	35	17	47	10	1
AI-H48	97	929	14	14	38	38	14.7	7	3	1
H48	78	1464	6	81	33	39	22.5	34	22	19
AI49	89	1555	44	44	30	33	18.3	36	3	2
AI-H49	84	822	1	34	42	40	14.7	25	3	2
H49	82	1161	11	46	41	37	21.1	28	9	16
AI50	87	1433	1	47	30	34	17.9	35	3	1
AI-H50	86	879	1	32	42	40	15.2	24	1	1

H50	86	1615	7	54	31	38	41.4	36	3	2
AI51	87	1288	2	42	33	34	18.1	35	2	3
AI-H51	86	735	0	28	41	35	15.6	22	1	1
H51	87	1304	2	41	31	35	36.2	22	2	10
AI52	86	1221	1	44	33	41	13.6	32	3	2
AI-H52	84	907	3	39	35	42	13.5	35	1	4
H52	79	1311	10	64	34	41	18.5	42	7	21
AI53	86	1010	2	37	37	35	15.1	27	3	2
AI-H53	85	725	1	30	46	40	15.1	20	3	3
H53	80	1075	16	40	41	36	21.5	19	7	21
AI54	91	1248	0	33	34	31	15.8	20	8	1
AI-H54	86	963	0	36	38	36	16.1	26	3	3
H54	82	1963	17	75	30	36	36.4	50	3	23
AI55	86	1342	1	46	33	33	16.4	38	6	1
AI-H55	88	961	3	30	43	38	17.5	18	2	5
H55	85	1407	12	46	35	34	34.3	28	4	18
AI56	81	1197	2	62	37	32	15.5	45	9	2
AI-H56	84	936	4	37	38	35	14	20	9	6
H56	83	1148	3	53	36	35	24.4	22	10	12
AI57	86	1325	2	46	33	34	13.3	29	2	1
AI-H57	85	990	1	40	39	34	16.2	29	1	2
H57	86	1600	7	53	32	38	32	39	4	9
AI58	84	1536	2	60	33	33	17.1	36	10	5
AI-H58	86	837	2	30	46	35	14.9	20	2	4
H58	91	1482	2	40	35	35	41.2	26	2	6
AI59	83	1698	2	72	31	35	18.3	47	12	1
AI-H59	88	967	1	29	46	41	15.6	22	1	2
H59	88	1785	7	51	33	40	35.7	33	1	13
AI60	88	1219	2	36	34	37	17.4	29	1	4
AI-H60	84	731	1	31	47	37	15.6	19	2	4
H60	84	1056	8	36	39	32	35.2	18	3	19

Table C6

Expert Scores of All Contents

File Name	Readability	Clarity	Informativeness	Engagement	Reach	Total Score
AI1	8.800	9.000	9.300	8.700	8.600	44.400
AI-H1	8.400	8.800	8.900	8.500	8.000	42.600
H1	7.900	8.300	8.500	7.900	7.500	40.100
AI2	8.700	9.100	9.400	8.800	8.800	44.800
AI-H2	8.500	8.900	9.000	8.600	8.200	43.200
H2	8.100	8.400	8.700	8.100	7.800	41.100
AI3	8.900	9.200	9.500	9.000	9.000	45.600
AI-H3	8.400	8.700	8.800	8.500	8.300	42.700
H3	8.000	8.200	8.500	8.000	7.800	40.500
AI4	8.600	9.000	9.400	8.700	8.700	44.400
AI-H4	8.500	8.900	9.000	8.600	8.300	43.300
H4	7.900	8.300	8.600	8.100	7.800	40.700
AI5	9.000	9.300	9.500	9.200	9.100	46.100
AI-H5	8.500	8.800	9.100	8.700	8.400	43.500
H5	7.800	8.300	8.500	8.000	7.900	40.500
AI6	8.700	9.000	9.300	8.800	8.800	44.600
AI-H6	8.400	8.700	8.900	8.500	8.300	42.800
H6	8.200	8.300	8.600	8.200	7.900	41.200
AI7	8.600	9.100	9.400	8.900	8.800	45.000
AI-H7	8.300	8.900	8.900	8.600	8.300	43.000
H7	8.000	8.300	8.600	8.100	7.800	40.800
AI8	9.000	9.200	9.500	9.100	9.000	46.800
AI-H8	8.500	8.800	9.100	8.600	8.400	43.400
H8	7.800	8.400	8.700	8.200	7.900	41.000
AI9	9.000	9.400	9.600	9.200	9.100	46.500
AI-H9	8.500	8.800	9.000	8.800	8.400	43.500
H9	7.900	8.500	8.800	8.200	8.000	41.400
AI10	8.600	9.000	9.300	8.900	8.900	44.700
AI-H10	8.500	8.900	9.000	8.600	8.300	43.300
H10	7.900	8.400	8.700	8.200	7.800	41.000
AI11	9.100	9.200	9.500	9.100	9.000	46.900
AI-H11	8.600	8.900	9.200	8.700	8.500	44.000
H11	8.000	8.200	8.600	8.300	7.900	41.000
AI12	8.800	9.100	9.400	8.800	8.900	45.200
AI-H12	8.500	8.900	9.100	8.600	8.300	43.400
H12	7.900	8.400	8.700	8.300	7.900	41.200
AI13	8.900	9.200	9.300	9.000	9.100	45.500
AI-H13	8.500	8.900	9.000	8.700	8.400	43.500

H13	8.100	8.400	8.600	8.200	7.900	41.200
AI14	8.800	9.100	9.400	9.000	9.200	45.500
AI-H14	8.600	8.900	9.200	8.700	8.600	43.900
H14	8.200	8.500	8.700	8.400	7.900	41.700
AI15	9.000	9.200	9.500	9.100	9.300	46.100
AI-H15	8.600	9.000	9.300	8.800	8.900	44.600
H15	8.300	8.600	8.800	8.500	8.000	42.200
AI16	9.300	8.800	9.500	7.900	8.200	43.700
AI-H16	8.200	7.700	7.600	6.800	7.500	37.800
H16	6.500	6.300	6.400	5.500	6.200	30.900
AI17	9.200	8.500	9.000	7.800	8.100	42.600
AI-H17	8.100	7.300	7.400	6.500	7.200	36.500
H17	6.500	6.200	6.300	5.400	6.100	30.500
AI18	9.100	8.900	9.400	8.000	8.300	43.700
AI-H18	8.200	7.800	7.700	6.900	7.500	38.100
H18	6.600	6.400	6.500	5.800	6.300	31.600
AI19	9.200	9.000	9.400	8.100	8.500	44.200
AI-H19	8.300	8.100	7.900	7.200	7.600	39.100
H19	6.800	6.600	6.700	6.000	6.400	32.500
AI20	9.100	9.000	9.300	8.000	8.400	43.800
AI-H20	8.200	8.000	7.800	7.100	7.500	38.600
H20	6.700	6.500	6.600	5.900	6.300	32.000
AI21	9.200	9.100	9.400	8.200	8.500	44.400
AI-H21	8.300	8.200	7.900	7.300	7.600	39.300
H21	6.800	6.600	6.700	6.000	6.300	32.400
AI22	9.300	9.200	9.500	8.300	8.600	44.900
AI-H22	8.300	8.100	8.000	7.400	7.700	39.500
H22	6.900	6.700	6.800	6.100	6.400	32.900
AI23	9.300	9.200	9.500	8.400	8.700	45.100
AI-H23	8.300	8.100	8.000	7.500	7.800	39.700
H23	6.900	6.700	6.800	6.100	6.400	32.900
AI24	9.300	9.100	9.400	8.300	8.600	44.700
AI-H24	8.400	8.200	8.000	7.500	7.700	39.800
H24	6.800	6.700	6.800	6.100	6.400	32.800
AI25	9.200	9.100	9.400	8.200	8.500	44.400
AI-H25	8.300	8.000	8.100	7.600	7.700	39.700
H25	6.900	6.700	6.800	6.100	6.300	32.800
AI26	9.200	9.100	9.300	8.200	8.500	44.300
AI-H26	8.400	8.200	8.000	7.600	7.800	40.000

H26	6.900	6.700	6.800	6.100	6.400	32.900
AI27	9.200	9.100	9.400	8.300	8.600	44.600
AI-H27	8.300	8.100	8.000	7.600	7.700	39.700
H27	6.900	6.700	6.800	6.100	6.400	32.900
AI28	9.200	9.100	9.400	8.300	8.600	44.600
AI-H28	8.300	8.100	8.000	7.500	7.700	39.600
H28	6.900	6.700	6.800	6.100	6.400	32.900
AI29	9.300	9.200	9.400	8.300	8.600	44.800
AI-H29	8.400	8.100	8.000	7.500	7.700	39.700
H29	6.900	6.700	6.800	6.100	6.400	32.900
AI30	9.300	9.200	9.400	8.400	8.600	44.900
AI-H30	8.400	8.200	8.000	7.500	7.800	39.900
H30	6.900	6.700	6.800	6.100	6.400	32.900
AI31	8.500	9.000	9.200	8.800	8.600	44.100
AI-H31	7.800	8.200	8.700	7.900	8.000	40.600
H31	8.200	8.000	8.500	8.100	7.800	40.600
AI32	8.300	9.100	9.000	8.500	8.400	43.300
AI-H32	7.900	8.500	8.700	7.800	8.100	41.000
H32	8.100	8.300	8.400	8.000	7.900	40.700
AI33	8.200	9.200	9.100	8.400	8.500	43.400
AI-H33	7.700	8.600	8.500	7.900	8.200	40.900
H33	8.000	8.400	8.300	8.100	7.900	40.700
AI34	8.400	9.000	9.200	8.600	8.500	43.700
AI-H34	7.800	8.500	8.700	7.900	8.000	40.900
H34	8.100	8.300	8.400	8.200	7.800	40.800
AI35	8.300	9.100	9.000	8.400	8.500	43.300
AI-H35	7.900	8.500	8.600	7.800	8.000	40.800
H35	8.200	8.300	8.400	8.100	7.900	40.900
AI36	8.500	9.100	9.200	8.600	8.500	43.900
AI-H36	7.900	8.600	8.700	7.800	8.100	41.100
H36	8.300	8.400	8.500	8.200	7.900	41.300
AI37	8.400	9.000	9.100	8.500	8.600	43.600
AI-H37	7.800	8.600	8.700	7.900	8.000	41.000
H37	8.200	8.300	8.400	8.100	7.900	40.900
AI38	8.600	9.000	9.200	8.700	8.600	44.100
AI-H38	7.800	8.600	8.800	7.900	8.100	41.200
H38	8.300	8.400	8.500	8.200	7.900	41.300
AI39	8.500	9.000	9.100	8.700	8.600	43.900
AI-H39	7.900	8.600	8.700	7.900	8.000	41.100

H39	8.200	8.400	8.500	8.300	8.000	41.400
AI40	8.600	9.000	9.200	8.700	8.600	44.100
AI-H40	7.900	8.600	8.800	7.900	8.000	41.200
H40	8.300	8.400	8.500	8.200	7.900	41.300
AI41	8.600	9.000	9.100	8.700	8.600	44.000
AI-H41	7.900	8.600	8.800	8.000	8.100	41.400
H41	8.400	8.500	8.600	8.300	8.000	41.800
AI42	8.500	9.100	9.200	8.700	8.600	44.100
AI-H42	8.000	8.600	8.800	8.000	8.100	41.500
H42	8.300	8.400	8.500	8.200	7.900	41.300
AI43	8.600	9.100	9.200	8.700	8.600	44.200
AI-H43	8.000	8.700	8.800	8.100	8.100	41.700
H43	8.400	8.500	8.600	8.300	8.000	41.800
AI44	8.500	9.100	9.200	8.700	8.600	44.100
AI-H44	8.100	8.700	8.800	8.200	8.100	41.900
H44	8.400	8.600	8.700	8.300	8.100	42.100
AI45	8.500	9.100	9.200	8.700	8.600	44.100
AI-H45	8.200	8.800	8.900	8.300	8.200	42.400
H45	8.400	8.600	8.700	8.400	8.100	42.200
AI46	8.500	9.100	9.200	8.700	8.600	44.100
AI-H46	8.200	8.700	8.800	8.300	8.200	42.200
H46	8.300	8.600	8.700	8.400	8.100	42.100
AI47	8.600	9.100	9.200	8.700	8.600	44.200
AI-H47	8.300	8.800	8.900	8.400	8.300	42.700
H47	8.400	8.700	8.800	8.500	8.200	42.600
AI48	8.500	9.100	9.200	8.700	8.600	44.100
AI-H48	8.300	8.800	8.900	8.400	8.300	42.700
H48	8.400	8.700	8.800	8.500	8.200	42.600
AI49	8.500	9.100	9.200	8.700	8.600	44.100
AI-H49	8.300	8.800	8.900	8.400	8.300	42.700
H49	8.400	8.700	8.800	8.500	8.200	42.600
AI50	8.600	9.100	9.200	8.700	8.600	44.200
AI-H50	8.300	8.800	8.900	8.400	8.300	42.700
H50	8.500	8.700	8.800	8.500	8.200	42.700
AI51	8.500	8.800	9.100	8.600	8.700	43.700
AI-H51	7.900	8.000	8.500	8.100	8.200	40.700
H51	7.300	7.200	7.900	7.500	7.400	37.300
AI52	8.600	8.700	9.200	8.500	8.800	43.800
AI-H52	8.000	8.200	8.600	8.100	8.400	41.300

H52	7.600	7.800	8.100	7.700	7.900	39.100
AI53	8.400	8.600	9.000	8.500	8.700	43.200
AI-H53	8.100	8.200	8.500	8.300	8.400	41.500
H53	7.500	7.700	8.000	7.800	7.900	38.900
AI54	8.500	8.700	9.100	8.600	8.800	43.700
AI-H54	8.200	8.300	8.700	8.400	8.500	42.100
H54	7.800	7.900	8.300	7.900	8.100	40.000
AI55	8.600	8.800	9.200	8.700	8.900	44.200
AI-H55	8.200	8.400	8.800	8.500	8.600	42.500
H55	7.900	8.000	8.400	8.100	8.200	40.600
AI56	8.500	8.800	9.000	8.700	8.900	43.900
AI-H56	7.500	8.000	8.500	8.200	8.400	32.200
H56	7.000	7.800	8.300	7.900	8.100	31.000
AI57	8.400	8.700	9.200	8.600	9.000	43.900
AI-H57	7.900	8.200	8.800	8.100	8.300	41.300
H57	7.500	7.800	8.500	7.700	7.900	39.400
AI58	8.600	8.900	9.100	8.700	9.200	44.500
AI-H58	7.800	8.100	8.700	8.200	8.500	41.300
H58	7.300	7.700	8.200	7.600	7.800	38.600
AI59	8.700	8.900	9.200	8.800	9.100	44.700
AI-H59	7.800	8.000	8.700	8.200	8.300	41.000
H59	7.200	7.500	8.000	7.800	7.600	38.100
AI60	8.800	8.900	9.300	8.700	9.000	44.700
AI-H60	7.900	8.200	8.800	8.300	8.400	41.600
H60	7.100	7.600	8.100	7.500	7.700	38.000

Table C7

Total Evaluation Scores for All Contents

Content Id	Grammarly Overall Scores (100)	Expert Overall Scores (50)	Total Evaluation Scores (150)
AI1	88.000	44.400	132.400
AI-H1	94.000	42.600	136.600
H1	82.000	40.100	122.100
AI2	86.000	44.800	130.800
AI-H2	86.000	43.200	129.200
H2	82.000	41.100	123.100
AI3	88.000	45.600	133.600
AI-H3	86.000	42.700	128.700
H3	78.000	40.500	118.500
AI4	93.000	44.400	137.400

AI-H4	91.000	43.300	134.300
H4	84.000	40.700	124.700
AI5	95.000	46.100	141.100
AI-H5	93.000	43.500	136.500
H5	86.000	40.500	126.500
AI6	91.000	44.600	135.600
AI-H6	97.000	42.800	139.800
H6	90.000	41.200	131.200
AI7	83.000	45.000	128.000
AI-H7	84.000	43.000	127.000
H7	83.000	40.800	123.800
AI8	85.000	46.800	131.800
AI-H8	86.000	43.400	129.400
H8	77.000	41.000	118.000
AI9	87.000	46.500	133.500
AI-H9	86.000	43.500	129.500
H9	74.000	41.400	115.400
AI10	95.000	44.700	139.700
AI-H10	83.000	43.300	126.300
H10	71.000	41.000	112.000
AI11	87.000	46.900	133.900
AI-H11	86.000	44.000	130.000
H11	73.000	41.000	114.000
AI12	81.000	45.200	126.200
AI-H12	90.000	43.400	133.400
H12	73.000	41.200	114.200
AI13	85.000	45.500	130.500
AI-H13	92.000	43.500	135.500
H13	74.000	41.200	115.200
AI14	82.000	45.500	127.500
AI-H14	91.000	43.900	134.900
H14	83.000	41.700	124.700
AI15	85.000	46.100	131.100
AI-H15	87.000	44.600	131.600
H15	74.000	42.200	116.200
AI16	87.000	43.700	130.700
AI-H16	87.000	37.800	124.800
H16	80.000	30.900	110.900
AI17	94.000	42.600	136.600

AI-H17	91.000	36.500	127.500
H17	82.000	30.500	112.500
AI18	85.000	43.700	128.700
AI-H18	86.000	38.100	124.100
H18	81.000	31.600	112.600
AI19	85.000	44.200	129.200
AI-H19	86.000	39.100	125.100
H19	75.000	32.500	107.500
AI20	93.000	43.800	136.800
AI-H20	94.000	38.600	132.600
H20	84.000	32.000	116.000
AI21	86.000	44.400	130.400
AI-H21	91.000	39.300	130.300
H21	72.000	32.400	104.400
AI22	91.000	44.900	135.900
AI-H22	88.000	39.500	127.500
H22	77.000	32.900	109.900
AI23	86.000	45.100	131.100
AI-H23	93.000	39.700	132.700
H23	77.000	32.900	109.900
AI24	95.000	44.700	139.700
AI-H24	94.000	39.800	133.800
H24	79.000	32.800	111.800
AI25	94.000	44.400	138.400
AI-H25	90.000	39.700	129.700
H25	81.000	32.800	113.800
AI26	92.000	44.300	136.300
AI-H26	74.000	40.000	114.000
H26	72.000	32.900	104.900
AI27	86.000	44.600	130.600
AI-H27	86.000	39.700	125.700
H27	70.000	32.900	102.900
AI28	87.000	44.600	131.600
AI-H28	90.000	39.600	129.600
H28	76.000	32.900	108.900
AI29	89.000	44.800	133.800
AI-H29	86.000	39.700	125.700
H29	81.000	32.900	113.900
AI30	85.000	44.900	129.900

AI-H30	91.000	39.900	130.900
H30	72.000	32.900	104.900
AI31	85.000	44.100	129.100
AI-H31	86.000	40.600	126.600
H31	83.000	40.600	123.600
AI32	87.000	43.300	130.300
AI-H32	92.000	41.000	133.000
H32	86.000	40.700	126.700
AI33	85.000	43.400	128.400
AI-H33	87.000	40.900	127.900
H33	85.000	40.700	125.700
AI34	86.000	43.700	129.700
AI-H34	91.000	40.900	131.900
H34	86.000	40.800	126.800
AI35	86.000	43.300	129.300
AI-H35	93.000	40.800	133.800
H35	81.000	40.900	121.900
AI36	87.000	43.900	130.900
AI-H36	87.000	41.100	128.100
H36	80.000	41.300	121.300
AI37	84.000	43.600	127.600
AI-H37	85.000	41.000	126.000
H37	77.000	40.900	117.900
AI38	83.000	44.100	127.100
AI-H38	93.000	41.200	134.200
H38	82.000	41.300	123.300
AI39	82.000	43.900	125.900
AI-H39	85.000	41.100	126.100
H39	75.000	41.400	116.400
AI40	85.000	44.100	129.100
AI-H40	90.000	41.200	131.200
H40	71.000	41.300	112.300
AI41	86.000	44.000	130.000
AI-H41	89.000	41.400	130.400
H41	83.000	41.800	124.800
AI42	86.000	44.100	130.100
AI-H42	89.000	41.500	130.500
H42	81.000	41.300	122.300
AI43	85.000	44.200	129.200

AI-H43	87.000	41.700	128.700
H43	84.000	41.800	125.800
AI44	84.000	44.100	128.100
AI-H44	83.000	41.900	124.900
H44	84.000	42.100	126.100
AI45	87.000	44.100	131.100
AI-H45	85.000	42.400	127.400
H45	80.000	42.200	122.200
AI46	89.000	44.100	133.100
AI-H46	85.000	42.200	127.200
H46	81.000	42.100	123.100
AI47	83.000	44.200	127.200
AI-H47	87.000	42.700	129.700
H47	85.000	42.600	127.600
AI48	85.000	44.100	129.100
AI-H48	97.000	42.700	139.700
H48	78.000	42.600	120.600
AI49	89.000	44.100	133.100
AI-H49	84.000	42.700	126.700
H49	82.000	42.600	124.600
AI50	87.000	44.200	131.200
AI-H50	86.000	42.700	128.700
H50	86.000	42.700	128.700
AI51	87.000	43.700	130.700
AI-H51	86.000	40.700	126.700
H51	87.000	37.300	124.300
AI52	86.000	43.800	129.800
AI-H52	84.000	41.300	125.300
H52	79.000	39.100	118.100
AI53	86.000	43.200	129.200
AI-H53	85.000	41.500	126.500
H53	80.000	38.900	118.900
AI54	91.000	43.700	134.700
AI-H54	86.000	42.100	128.100
H54	82.000	40.000	122.000
AI55	86.000	44.200	130.200
AI-H55	88.000	42.500	130.500
H55	85.000	40.600	125.600
AI56	81.000	43.900	124.900

AI-H56	84.000	32.200	116.200
H56	83.000	31.000	114.000
AI57	86.000	43.900	129.900
AI-H57	85.000	41.300	126.300
H57	86.000	39.400	125.400
AI58	84.000	44.500	128.500
AI-H58	86.000	41.300	127.300
H58	91.000	38.600	129.600
AI59	83.000	44.700	127.700
AI-H59	88.000	41.000	129.000
H59	88.000	38.100	126.100
AI60	88.000	44.700	132.700
AI-H60	84.000	41.600	125.600
H60	84.000	38.000	122.000