

**AI Writing Assistants in Business Communications: Benefits, Challenges, and the Future of
Human-Machine Collaboration**

Jared A Curtis

Strategic Communications, University of Iowa

JMC:5950:0EXV Spr23 Capstone Project

Rachel Fisher

April 23, 2023

Author Note

The author of this paper is the Senior Director of Corporate Communications for Maximus, Inc. and the study's coordinator and conducted the data analysis. The insights and conclusions presented in the paper are based on the author's professional experience and involvement in the study. While every effort has been made to ensure the accuracy and objectivity of the information, the author's role in the organization and choices may have influenced the data interpretation and presentation of the findings.

Abstract

This capstone research project investigates the impact of Artificial Intelligence (AI) on content development within the communications industry. The study combines literature research, and quantitative and qualitative data, exploring four use cases for content development, tool evaluation, and an employee survey. The results demonstrate that generative AI can significantly improve content efficiency, readability, engagement, and overall quality when combined with human expertise. While AI-generated content still underperforms compared to human-created content, the partnership between communications professionals and AI shows promise in enhancing content quality across various aspects. The research highlights the need for communicators to establish practical application frameworks and training to foster successful AI adoption and integration in the industry. Additionally, it underscores the importance of human involvement in content creation despite AI's advancements. As AI continues to transform marketing and communications, this research serves as a foundation for understanding its implications and potential benefits within the field.

Keywords

Artificial intelligence, AI writing assistants, communications industry, content development, digital transformation, content creation, employee communications, social media

Literature Review

Artificial Intelligence (AI) is a machine simulation of human intelligence programmed to think and learn like humans. It involves algorithms and statistical models that enable machines to perform tasks that usually require human intelligence, like speech and language recognition, image and pattern identification, decision-making, and learning.

In marketing and communications, AI technologies will and do have a transformative impact on the industry. AI can improve various aspects of the business, such as automating tasks, increasing content creation efficiency, analyzing data, and creating more personalized communication experiences. However, limited studies detail the efficiencies and efficacies gained from its use.

Arguments suggest that we are at an inflection point in our history with AI. Although many professionals emphasize AI's positive aspects in business communications, few detail the concerns and consequences without a well-established framework and institutional knowledge of the technology (Davenport, 2020). For example, task automation is relatively easy to understand based on rules, logic, and standardization (Davenport, 2020). Whereas context awareness uses algorithms to learn based on their inputs, many do not have a substantive understanding of how it "works."

Most communicators are still in the early stages of understanding the technology. They lack confidence in adopting and implementing AI due to limited education and training. This results in fragmented adoption and integration. Moreover, communicators have a responsibility in the digital transformation and must find ways to establish frameworks for practical applications and training (Getchell, 2022).

AI will forever change how content is conceived, created, and used across various industries for communicators and the profession, but human involvement remains necessary. AI will not replace a human yet, but it does challenge the business of communications as it can be both a channel and a content producer (Natale, 2021).

AI writing assistants

AI writing assistants are becoming an essential tool in business communications, as they help writers and professionals save time and effort while enhancing content quality. Generative AI, a subset of artificial intelligence, creates new content based on a training set within a Generative Adversarial Network framework. The supervised neural network processes vast amounts of data, learning to identify and understand complex relationships through a reward system that promotes success and discourages errors (Greengard, 2023).

AI writing assistants rely on unstructured deep learning models to produce content based on user prompts, employing artificial intelligence techniques to generate written materials. A prime example of generative AI is ChatGPT, which provides detailed written responses to user inputs and can engage in ongoing conversations by recalling earlier information.

As more data is added to these models, they analyze words through a lens of entailment, contradiction, or neutrality, allowing them to build accurate and contextually correct predictive models. Human AI trainers review randomly selected model-written messages, rank completions, and feed them back into the AI for further training. The result is a reinforcement learning algorithm that continuously improves over time.

Other AI writing assistants, such as autofill features in email, grammar, and tone aids, use natural language processing to support business communicators. However, these tools are not without limitations. For example, biases in the training data may lead to unintended

consequences, and human supervision is necessary to ensure quality and accuracy (Getchell, 2022).

Rationale of use

The rationale for using AI writing assistants in business communications is to enhance job satisfaction, time-saving benefits, and assistance with specific tasks. While AI offers numerous possibilities in this field, the impact is speculative. The applications may be better suited for specific, narrow goals rather than artificial general intelligence (Getchell, 2022).

A study of communication professionals in Europe (Zerfass, 2020) found that the majority had a limited understanding of AI, with only a small percentage being AI adopters or experts. The impact of AI was seen as more likely to affect the profession as a whole rather than individual or organizational levels.

Using AI, language, culture, and geographical location may lower some barriers, enabling communication professionals to work with machines while providing oversight and steering organizations in the desired direction (Davidson, 2019). Conversely, questions about the widespread integration of AI in communication might alter human communication (Sundar, 2022).

In the practical business communications field, professionals like Zora (Artis, 2023) have adopted AI writing assistants for convenience and time-saving purposes. A recent study found that access to ChatGPT could significantly increase job satisfaction and mildly increase self-efficacy. Participants enjoyed discovering and working with the tool, and after a two-week follow-up, 33% of the test group had used ChatGPT in their job for various tasks. However, respondents not using ChatGPT reported that the chatbot lacked context-specific knowledge for their writing tasks (Noy & Zhang, 2023).

Despite the potential benefits, AI writing assistants are not without challenges and risks, including limited understanding of complex or nuanced information, staff competencies, organizational infrastructure, user acceptance, motivation of practitioners to use AI, and support by top management, leaders, and clients (Davidson, 2019). Customer perceptions can often view AI negatively, which can hinder adoption. Negative views often stem from the perception that AI cannot feel or understand context (Davenport, 2020).

Use in communications

AI writing assistants are increasingly recognized for their potential to enhance business communication processes (Davidson, 2019). These tools can help alleviate emotional paralysis that might inhibit timely action when emotions may impact the ability to create content and can be added to the communicator's toolkit, such as transcribing conversations and interviews.

Zora (Artis, 2023) and Shel (Holtz, personal interview, 2023) see potential applications of AI writing assistants in content creation. Zora notes that these tools can be used for idea generation and can potentially assist teams aiming to achieve more with fewer resources. However, she feels that human involvement is needed to ensure the appropriate style, tone of voice, and ethical considerations, such as fact-checking.

Shel observes that AI writing assistants are already integrated into various products and services, such as Ellie for Gmail, offering tone and style options when responding to emails. He anticipates that these tools will become more commonplace as users become adept at determining when their use is appropriate. Furthermore, he notes that AI is already a part of daily life for many people in the form of product and playlist recommendations.

Regarding integrating AI writing assistants into existing communication processes and workflows, both Zora and Shel suggest they can be helpful for specific content types and idea

generation. Shel highlights the need for users to make informed decisions about when to use AI writing assistants and when not to. Potential challenges in integrating AI writing assistants into business communications include ethical concerns, accuracy issues, and the potential loss of creativity in writing.

Creativity

AI writing assistants can be a valuable tool to assist in the creative process. While they can generate basic ideas or suggestions, the final product must always reflect the unique human touch of creativity and nuance. By understanding the potential and limitations of AI in the creative field, professionals can better integrate these tools into their work, enhancing the creative process without diminishing the importance of human creativity.

The Creative Advertising System (CAS) uses AI principles to generate and test creative advertising ideas (Vakratsas, 2021). This system, rooted in computational creativity, can improve current thinking among advertisers and advertising agencies by providing a process for generating creative advertising. The system focuses on creative thinking and generation, leveraging data to produce and test new ideas.

The computational creativity framework and its application to creativity highlight the similarities between creativity's generative nature and AI (Vakratsas, 2021). The framework considers creative ideas as objects in a conceptual space, enabling the generation of ideas through algorithmic computations. New ideas can be produced by exploring or transforming an existing space using traversal rules, with evaluative rules determining their novelty and value.

In advertising creativity, novelty and value are two primary creative outcomes, and templates can create styles or genres that allow advertisers to explore and maintain consistency in generating creative ideas (Vakratsas, 2021).

Concerns regarding AI writing assistants stealing human work have been noted in the communications industry; however, generative AI tools learn from massive datasets without "sampling" works in a database. Thus, these tools will never produce outputs that are collections of pre-existing assets (Holtz, *Generative Artificial Intelligence for Communicators*, 2023).

There are limitations of AI writing assistants in generating creative and nuanced content. AI writing assistants can complement and enhance human creativity rather than replace it. AI can generate basic ideas or suggestions, but humans must execute and refine them with creativity, emotion, and soul (Artis, 2023). Shel (Holtz, personal interview, 2023) stresses the importance of teaching students why good writing is essential and how AI writing assistants can help improve their skills without replacing creativity.

Bias and ethics

Bias and ethics are significant concerns in the context of AI writing assistants, as algorithms may mirror or even reinforce human biases if trained on outdated data containing human semantic biases (Getchell, 2022) or the developers who create the algorithms. Although AI relies on objective mathematical calculations, it lacks empathy, mercy, and emotions. Recognizing the limitations of AI in decision-making processes that require emotional intelligence, intuition, situational awareness, and nuance is crucial (Getchell, 2022).

AI-generated content may present risks to company values and diversity, equity, and inclusion (DEI) when data contains exclusion or bias (Davidson, 2019). Communicators should actively oversee AI applications to ensure alignment with organizational values. Ensuring that augmented intelligence adheres to ethical principles and is designed and trained with an ethical and inclusive perspective (Artis, 2023).

Algorithmic bias in AI applications may stem from various sources, including the data sets that inform AI (Davenport, 2020). For instance, Amazon abandoned an AI tool for rating job applicants due to gender discrimination. AI developers must address ethical concerns, such as data privacy and the selection of problems AI will tackle (Davenport, 2020).

To promote ethical, accurate, and trustworthy AI-generated content, both Zora (Artis, 2023) and Shel (Holtz, personal interview, 2023) advocate applying an ethical lens to AI writing assistant design and training, along with organizational and governmental regulation. Teaching critical thinking skills to individuals can empower them to question content and verify its accuracy. Companies should establish standards and values for using AI writing assistants and remain vigilant about biases in training data sets. These measures allow AI-generated content to be developed and used ethically, accurately, and responsibly.

Inaccuracy

AI-generated content can sometimes be incomplete or inaccurate, as AI may struggle to fully grasp or comprehend emotional context or understand diverse data (Getchell, 2022). AI generally excels in prediction rather than judgment, and human collaboration can help address these limitations. Inaccurate results may result in legal and ethical complications, and the legal responsibilities of algorithm authors remain unclear (Getchell, 2022). Humans must be accountable for AI outputs, similar to accountability for personal actions.

Extraction-based summarization systems have produced moderately satisfactory results but still fell short of a human's ability to capture the essence of a body of text. This highlights the need for further improvements in precision and recall (Naidoo, 2022).

Zora (Artis, 2023) and Shel (Holtz, personal interview, 2023) acknowledge concerns about the accuracy and quality control of writing assistants. Zora highlights the significance of

verifying information and sources when using AI-generated content and the need for transparency and ethical responsibility. Shel recommends using AI writing assistants for tasks requiring data presentation rather than relying on the AI to find the data.

There are potential risks of becoming overly reliant on machine translation. This can generate accurate and grammatically sound content but may also produce sub-optimal output, thus emphasizing the need for users to remain vigilant about the quality of the content generated by such tools (Fuss, 2023). While AI writing assistants offer considerable advantages, it is essential to be mindful of their limitations and potential inaccuracies. Users must verify information, understand the tools' capabilities, and use them ethically.

Privacy

Privacy is a significant concern, as these tools rely on large amounts of data, including personally identifiable information (PII), behavior, and communication patterns (Getchell, 2022). Addressing the storage and potential misuse or exposure of this data are crucial.

Data privacy in AI model training is another vital aspect to consider. Depending on a tool's privacy guidance, company and employee data used in creating content could be exposed if the tool is trained on that data, potentially leading to the disclosure of confidential information.

Zora (Artis, 2023) and Shel (Holtz, personal interview, 2023) express concerns about the security of personal information when using AI writing assistants. Zora cautions that people are too willing to give away their data without considering the consequences. Shel suggests using AI writing assistants primarily as idea generators and being cautious about the type of data shared with these tools.

There are three reasons why privacy is a complex issue in the context of AI (Davenport, 2020):

- Low cost of storage, which allows data to persist longer than intended
- Potential for data to be repackaged and reused for different purposes
- Possibility that data for one individual may contain information about others

The study also emphasizes the need to determine whether data privacy management efforts should be driven by legal regulations or self-regulation and how to address privacy concerns when data is collected and effectively manage data privacy failures.

Training and proficiency

Employees may lack the knowledge about how to interact with AI and use its recommendations, referring to this as the "black box" problem (Getchell, 2022). Many people do not understand the underlying mechanisms, leading to confusion between AI-generated predictions and actual decisions. The study emphasizes that humans should evaluate AI predictions to ensure reliable and valid results.

Zora (Artis, 2023) and Shel (Holtz, personal interview, 2023) agree that training and understanding are essential when using AI writing assistants. They maintain that users should be well-versed in the AI's capabilities and limitations and discern when AI-generated content may require human intervention for accuracy, tone, and style. They also view prompt engineering as skilled communicators should develop and comprehend.

There has been relatively little effort to consider AI from the perspective of cultural and sociological traditions in the study of communication. Investigating AI and communication from a human-machine communication perspective requires examining the machine and the human element. This approach highlights the importance of understanding human communication when dealing with AI-generated content, as technology is the channel and the producer of communication messages (Natale, 2021).

User education on the technology's capabilities, limitations, and ethical considerations is paramount to enhancing training and proficiency in AI writing assistants. This can be accomplished through training programs, workshops, and educational resources. By cultivating a deeper understanding of AI writing assistants and their role in communication, users will be better equipped to utilize these tools effectively and ethically.

Role in Communications

The role of AI in business communications is multifaceted, encompassing both potential benefits and challenges. To effectively integrate AI into the communications landscape, prioritization of transparency, openness, and ethical considerations is key.

AI implementation in business communications lacks literature and guidelines regarding social and ethical concerns (Getchell, 2022). As AI technology becomes increasingly ingrained into the workplace, it is essential to understand its social and ethical impacts.

The tight integration of AI in mediated communication has brought about new issues or aggravated existing ones, such as the "authenticity crisis" in communication (Naidoo, 2022). AI's involvement in message production and dissemination, like deep fakes and message bots, may contribute to this crisis. However, AI is also viewed as a potential solution for social issues like hate speech and misinformation. Communication scholars should critically evaluate existing theories and research findings and propose new ones.

AI's capacity to produce, alter, and create content can deepen mistrust in communications or news (Davidson, 2019). Communicators must emphasize transparency and openness within the company while mitigating the risk of an emotional disconnect between the company and its audience.

Establishing a set of AI principles in organizations can impact the adoption within an organization (Kelly, 2022): communication, management support, training, an ethics office(r), a reporting mechanism, enforcement, measurement, accompanying technical processes, a sufficient technical infrastructure, organizational structure, and an interdisciplinary approach. These components are discussed in the context of business code adoption theory.

Zora (Artis, 2023) and Shel (Holtz, personal interview, 2023) acknowledge that AI writing assistants will play a role in the communications landscape. Zora encourages communication professionals to articulate their value beyond functional work and adapt to the changing landscape by embracing AI as a support tool. Shel sees AI as becoming an integral part of industry tools, enhancing the efficiency of communications processes.

Replacing human writers

Views on AI replacing humans in the workplace are varied, with research providing mixed insights (Getchell, 2022). The future workforce landscape might look different, but understanding the importance of openness and transparency regarding AI usage is crucial. Further research is needed to comprehend how current managers make decisions and how their evaluations change after AI implementation. AI already contributes to business communications in various ways.

Some studies suggest that AI could replace 20% of all jobs (Davidson, 2019). The U.S. Bureau of Labor Statistics raises concerns that advancements in robotics and AI could lead to significant job loss, with some projections estimating up to 47% of jobs automated by 2030 (U.S. Bureau of Labor Statistics, 2022). However, the article suggests that the impact may be less severe than anticipated, likely around 30%, due to factors such as population and economic growth contributing to employment stability.

Zora (Artis, 2023) and Shel (Holtz, personal interview, 2023) opine that AI writing assistants will replace human writers in some communications areas but not entirely. They envision AI complementing human writers in routine work, basic tasks, data analysis, and playing a significant role in emerging technologies like the Metaverse.

Noy and Zhang (Noy & Zhang., 2023) examine the productivity effects of generative AI technology, ChatGPT, in the context of mid-level professional writing tasks. Their study found that ChatGPT increased average productivity and reduced inequality between workers, benefiting low-ability workers more. ChatGPT mostly substituted for worker effort rather than complementing worker skills, shifting tasks toward idea generation and editing, and away from rough drafting. Exposure to ChatGPT increased job satisfaction and self-efficacy while heightening both concern and excitement about automation technologies.

AI writing assistants may supplant human writers in certain areas of communications, but they are more likely to complement human writers in various tasks. The impact of AI on job displacement remains debatable, with some projections suggesting a less severe impact than initially anticipated. As AI advances, organizations and individuals need to adapt and find ways to integrate these technologies into their work processes effectively.

Methodology

Preliminary Rationale

The growing market of AI tools offers communicators numerous opportunities to create digital assets, writing, images, automated audio and video editing, and more – all generated with minimal effort and input from the user. AI technologies present an opportunity for communicators to unlock and explore creative possibilities and drive efficiency with content generation. Proponents argue that AI will improve productivity, creativity, and performance. However, there is a notable lack of studies investigating the efficiency and efficacy of AI writing assistants in business communications, specifically comparing a human writing alone and augmented by generative AI writing assistants.

Research Question

How does writing supplemented by AI compare to human writing independently in terms of efficiency, efficacy, and content quality of business communications?

This research aims to compare the AI writing assistant and the writer alone in four key areas:

- Measuring the time required to generate content
- Evaluating content quality
- Examining grammar, structure, and organization effectiveness
- Rating the reader's comprehension, experience, and readability of the content

Research Project

Various methods were employed to investigate the research question, including defined observations and a survey. The study consisted of two segments. The first segment involved four case studies examining the efficiency, efficacy, and quality metrics within the Maximus

Corporate Communications team's content development process, comparing the writer working independently and using an AI writing assistant. The second segment was a content quality study involving Maximus employees, which compared writing samples from the human writer alone, AI-generated content only, and the writer supported by AI.

Development Use Cases

The Maximus Corporate Communication management team, consisting of ten employees, identified the four use cases for content development, ranging from simple to complex tasks related to creating first drafts:

- Feeds: involves condensing long-form communication into a paragraph or less.
- Smart Brevity: requires adapting a long-form communication draft to fit into the Axios Smart Brevity sections, following their principles of summarizing content using clear, concise language.
- Thought Leadership articles: represent a more intricate content development process, where the writer formulates interview questions, transcribes the audio, and writes a draft based on the interview.
- Social Post: involves crafting posts based on a thought leadership article for various channels and audiences.

Tool evaluation

Four AI writing assistants were selected for initial evaluation: ChatGPT, Copy.ai, Writer, and Jasper.ai. The tools chosen for assessment were based on market research and recommendations from industry experts. The team met with each vendor to gain an overview of their product and its capabilities. The Maximus Corporate Communications management team employed a scorecard (Appendix B) to evaluate each tool, narrowing down the selection for the

study. The scorecard was designed to objectively assess the vendor's services, capabilities, and pricing, specifically focusing on the four use cases, drawing on the materials from the Marketing AI Institute's "Piloting AI in Marketing" course (Institute, 2023).

As part of this review, and per Maximus' policies and procedures, each tool was submitted to the company's Software Governance Board and Privacy teams for evaluation. They ensure that any new products company staff uses meets privacy, security, data, cybersecurity, and networking requirements. While the Software Governance Board approved all four assistants, the Privacy team rejected three of the four.

ChatGPT, Jasper, and Copy.ai are all derived from the same source that is owned and operated by OpenAI. Consequently, they all share the same privacy and AI use-related concerns. OpenAI-affiliated products contain identical language regarding unlimited access to and use of user-supplied information for training and developing the OpenAI platform. This practice is unacceptable for the sensitive information Maximus holds and maintains, including internal use and confidential company information.

In contrast, Writer has distinguished itself from other AI writing assistant products with its privacy, security, and inclusivity statements. Writer explicitly states that they do not use or retain customer data for training and developing their AI foundational model without affirmative consent. They only retain customer data in accordance with a customer's instructions.

Writer is a cloud-based service hosted on Google's platform and exclusively uses servers located in the United States. The company does not store content submitted by customers for analysis any longer than necessary to examine the content and provide corrections and suggestions.

Writer states that their Enterprise plan is Health Insurance Portability and Accountability Act (HIPAA) compliant. They are the only vendor among those reviewed that expressed willingness to execute a Business Associate Agreement (BAA), if needed. They are also the only vendor to discuss their security practices and employee access management in depth and their confidential information protections are bilateral.

Based on the Privacy department's assessment and the vendor evaluation scorecard, Writer was selected as the AI writing assistant used by the Maximus Corporate Communications team for the study.

The vendor provided training to the team, demonstrating how to use the tool and prompt development. It was decided for the study to use Writer's "Ask Writer Anything" to create content, as there were no out-of-the-box workflows that matched any of the study use cases. Additionally, the Senior Director of the team provided an overview of the ethical use of the tool, fact-checking, and reviewing and updating the AI-generated content. After the training, the staff members were given three days to familiarize themselves with the interface, inputs, outputs, and refinement process.

Content Development Study

The content development study focused on four use cases and the content creation process, examining the time required to write communications drafts. A scorecard was used, with writers recording the time spent on various steps in the process, word count, level of effort, and Grammarly metrics.

The two metrics self-reported by the writer were time spent and level of effort. The writer calculated the total time to complete the task and the level of effort was gauged by their perception of completion using the rating scale outlined in the scorecard (Appendix A).

Grammarly was selected to assess reading time and readability scores, as it is already part of the team's existing writing process and evaluation. After completing the task, the writer would record the data from Grammarly and enter it in the scorecard.

A baseline study involving human-only writing tasks using the scorecard (Appendix A) was conducted over 30 days. This resulted in a sample size: five Feeds, 11 Smart Brevity, five Thought Leadership articles, and ten social posts. In the subsequent 30-day period, the writers incorporated generative AI content from Writer to supplement their writing in each use case. The sample size for the period included four Feeds, 18 Smart Brevity, 8 Thought Leadership articles, and nine social posts.

Content Development Findings

The analysis of the multiple use cases presented here offers insights into the trade-offs and benefits of using generative AI in content development regarding time savings, effort reduction, readability, engagement, and overall quality. The varied impact of AI demonstrates its potential role in shaping the communications industry.

Efficiencies: Overall, using a generative AI seems to positively impact some use cases, as it reduces time creating content, word count, and the level of effort. Table 1 indicates that efficiencies were gained in almost every category, with only a few showing minimal impact. This suggests that using a generative AI tool to help write drafts can lead to increased efficiency. The Smart Brevity and Thought Leadership use cases saw time savings of nine and 40.4 minutes, respectively, while Feeds experienced a nominal increase. Staff members noted that Writer was influential in condensing long-form drafts, as demonstrated by the reduced word counts for Feeds and Thought Leadership and the decreased level of effort for Smart Brevity and Thought Leadership.

From the analysis, we can make several efficiency assumptions:

1. Time savings: AI can significantly reduce the time spent writing content. This can be attributed to the AI's capability to generate content in a structured way quickly, provide new ideas, and reduce the time from ideation to writing.
2. Reduced word count: AI's ability to present information concisely, promoting clarity and succinctness.
3. Lower level of effort: AI can present information in an organized way, proofread and correct any grammar and spelling errors during content generation, giving the writer more time to refine and review the output.

It is important to note that the Feeds use case showed some increase in time spent and level of effort when using AI. This can be due to the writer having familiarity with the content when writing alone and can quickly copy and paste content from the draft with little refinement. The writer spends more time editing and refining the content when using AI.

Table 1. Tasks: evaluation of use case results and the difference compared to baseline human only to human with AI*.

Use Case	Activity	Total minutes	Word count	Level of effort
Feeds	Baseline	4.4	228	1
	With AI	4.5	90	1.5
Total		+0.1 minutes	-138 words	+ 0.5
Smart Brevity	Baseline	27	154	2.64
	With AI	18	151	2
Total		-9 minutes	-3 words	-0.64
Thought Leadership	Baseline	73.4	691	3.6
	With AI	33	461	2
Total		-40.4 minutes	-230 words	-1.6

*Rounded to one decimal place

Content quality: Table 2 indicates that content quality remained consistent across almost every category when comparing human-only writing to writing supplemented with AI. These results suggest that augmenting writing with generative AI tools can be as effective, and in some cases, better than human-alone writing alone to reduce reading time and improve readability.

One aspect that improved across all use cases was reading time, which decreased the time it took for readers to review the content. Except for Thought Leadership, which saw a nominal increase, readability also improved. The slight increase can likely be attributed to the more complex explanations and specialized vocabulary used in the topics of the generated content.

From the analysis, we can make several efficiency assumptions:

1. **Reduced reading time:** AI led to a significant decrease in reading time.
Correlating the Table 1 and 2 results, we find that AI-generated content may be more concise overall, reducing irrelevant words or phrases.
2. **Mixed readability:** AI's ability to produce clear and understandable content may vary depending on the complexity of the subject matter or writing style.
3. **Consistent engagement and delivery:** AI may be comparable to content written by human alone in terms of keeping the reader's attention.
4. **Variability on clarity and overall score:** AI may have difficulty maintaining content quality with complex or nuanced topics.

AI can affect content quality and efficacy depending on the specific writing task. While it may lead to reduced reading time and comparable engagement and delivery, its impact on readability, clarity, and overall score may vary.

Table 2. Content quality: evaluation of drafted content results and the difference compared to baseline human only to human with AI.

Use Case	Activity	Reading Time (s)*	Readability	Overall	Clarity	Engagement	Delivery
Feeds	Baseline	58	55	100	5	4	4
	With AI	22	40	100	5	4	4
Total		-36 sec	+15	Same	Same	Same	Same
Smart Brevity	Baseline	37	44	100	5	4	4
	With AI	34	41	100	5	4	4
Total		-3 sec	+3	Same	Same	Same	Same
Thought Leadership	Baseline	165	49	100	5	4	4
	With AI	51	53	82	4	4	4
Total		-114 sec	-4	-18	-1	Same	Same

*Reading time in seconds

Social Media: Table 3 reveals that social media content creation took longer with AI, and efficiencies were gained regarding the reduced level of effort and increased engagement rate. Staff comments indicated they felt the process took longer to use AI, as they often had an idea of the content they wanted to draft for the post, and creating the prompt and refining the output from the AI tool took additional time. The increase in Organic Engagement Rate when using AI could suggest that the AI generates content that writers might not have considered independently. Based on the comparative results of the study, it can be inferred that the combination of human and generative AI produces more engaging content for readers.

From the analysis, we can make several efficiency assumptions:

1. Time and word count trade-off: increased time spent and a slightly higher word count, level of effort decrease, and increase in organic engagement may indicate that the trade-off is worth the additional time. Time spent on refining and tailoring AI content could lead to more engaging and effective social posts.

2. Reduced effort: AI could help manage time-consuming tasks such as ideation and drafting, allowing the writer to focus on refining and optimizing content.
3. Improved organic engagement rate: AI content might be more appealing and relevant to audiences, resulting in better engagement.

The supplemental use of AI for social post creation appears to impact the level of effort and organic engagement rate positively. However, it may require additional time investment and result in a slightly higher word count.

Table 3. Social Media: evaluation of content results and the difference compared to baseline human only to human with AI

Use Case	Activity	Total minutes	Word count	Level of effort	Organic Engagement Rate
Social Post	Baseline	6.4	67	3.2	3.44%
	AI	10.14	69	2.92	4.40%
Total		+3.74	-2 words	-0.28	+0.96%

The findings revealed that while AI generally led to significant time savings and reduced effort, its effect on readability and content quality varied depending on the writing task. In most cases, human with AI content resulted in a reduced reading time and comparable engagement and delivery, with mixed impacts on readability, clarity, and overall scores.

In the Social Post use case, despite requiring a slight increase in total time and word count, AI contributed to a decrease in the level of effort and an improvement in the organic engagement rate. Overall, the study highlights the potential benefits and trade-offs of using generative AI in content development, emphasizing the importance of careful consideration and adaptation to the unique requirements of each writing task and use case.

Employee Survey

A separate employee survey (Appendix C) was conducted among Maximus employees and contractors to gather feedback on their perspectives regarding writing samples produced by a human alone, AI alone, and human writer supplemented by AI.

Three main topics were selected to help ensure that employees had sufficient knowledge and understanding of the subject matter. Writing prompts (Appendix C) were developed for each topic and were used by the writers and AI to generate the content. Different writers created each piece of content to provide variation in voice and tone, simulating the diverse types of writing employees may encounter daily.

The survey was sent to 35,739 employees and contractors and remained open for 14 days. 5,657 employees completed the survey, providing a 99% confidence level and a 1.6% margin of error in the results. The email sent to employees did not disclose the origin of the writing samples to avoid influencing their responses. Maximus Corporate Communications staff also kept the purpose of the survey confidential outside the department to minimize any potential bias.

The survey displayed writing samples were presented in random order. Employees reviewed each writing sample and used a five-point Likert scale to record their sentiment based on:

- Readability (how easy was it to read the sample)
- Clarity (how clear and concise was the sample)
- Tone (how appropriate was the tone of the sample)
- Effectiveness (how effective was the sample able to communicate the main point)

- Understandability (how well did they understand the sample's subject after reading it)
- Engagement (how engaging was the sample).

After the survey's conclusion, results were compiled by combining all writing activities for each sentiment in an Excel spreadsheet. For instance, all AI-alone results for the Easy to Read were averaged to generate an overall sentiment score.

Employee Survey Findings

In every category, human writers supplemented with generative AI outperformed AI alone and human alone content (Table 4). A qualitative review of comments showed that the overall sentiment was generally positive, with respondents describing the writing as clear, concise, engaging, and warm.

Table 4. Employee Survey All Results: evaluation of employee survey results and the resulting difference compared to human with AI*.

Category	Human with AI	Human Alone	AI Alone
Easy to Read	4.14	4.05 (-0.09)	4.00 (-0.14)
Clear and concise	4.10	3.97 (-0.13)	3.88 (-0.22)
Tone	4.11	3.99 (-0.12)	3.96 (-0.15)
Main point	4.11	3.97 (-0.14)	3.92 (-0.19)
Understandability	4.24	4.14 (-0.10)	4.13 (-0.11)
Engaging	3.92	3.79 (-0.13)	3.71 (-0.21)

*Rounded to two decimal places

One human with AI writing sample scored significantly lower than the others. Upon reviewing employee comments, a grammatical error in the sample was identified as the cause of the lower scores. An analysis of the data was conducted to evaluate the impact of removing all such writing samples from the results (Table 5). Even with these samples removed, human with AI scored higher in every category, as did the differences in the comparison data.

Table 5. Employee Survey with Values Removed: evaluation of employee survey results and the resulting difference compared to human with AI with values writing samples removed*.

Category	Human with AI	Human Alone	AI Alone
Easy to Read	4.39	4.14 (-0.25)	4.03 (-0.36)
Clear and concise	4.38	4.08 (-0.30)	3.90 (-0.48)
Tone	4.29	4.07 (-0.22)	3.94 (-0.35)
Main point	4.39	4.09 (-0.30)	3.94 (-0.45)
Understandability	4.48	4.25 (-0.23)	4.17 (-0.31)
Engaging	4.18	3.90 (-0.28)	3.73 (-0.45)

*Rounded to two decimal places

These findings suggest that combining human expertise and AI assistance consistently leads to better-rated content in terms of readability, clarity, tone, main point conveyance, understandability, and engagement. While AI-generated content only underperforms compared to human-created content, the results indicate that the partnership between communications professionals and AI can enhance the overall content quality across various aspects.

Discussion

It is important to note that the use case sample sizes were relatively small, which could limit the generalization of the findings. Additional research with an increased scope of sample sizes, topics, and writers is necessary to validate further and confirm the impact of AI writing assistants on efficiency, efficacy, and content quality in the communications profession.

Additionally, the efficiency of generative AI may vary depending on the type of writing task, skill level, and the specific needs of the communications professional and the AI writing tool they use. With many variations in the capabilities of AI vendors, they can significantly impact the writing task. AI may struggle to maintain content quality when dealing with more complex or nuanced topics, often requiring deeper understanding and critical thinking. Professionals may need to spend more time refining and editing AI-generated content in such cases to ensure it meets their quality standards.

For example, we used only one Writer workflow during our study to generate content. If the AI tool learned from our past content and we developed organized workflows based on specific tasks, it would be assumed that AI-generated content would improve in many categories in terms of time spent, level of effort, and word count.

The results demonstrate the need for more studies on the topic and its impact on business communication writing using AI. For now, the results of our study suggest that AI writing assistants help provide optimal content quality and the writer gains efficiencies. Communications professionals should carefully assess the strengths and limitations of generative AI in their specific use cases and consider an effective adoption strategy that meets required ethical, privacy, and security standards while not introducing bias or misinformation.

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Appendix A

Time Study

Study Instructions

This study aims to determine how long it takes to write content for our communications first drafts. We will use the data from this study to evaluate our current processes for specific use cases and then compare the same processes and use cases supplemented with AI.

Instructions

1. Select the tab for the use case you are recording
2. Follow the instructions on the page
3. Note the time you start and end writing the content for the process step.
4. Complete all fields according to the data fields definition
5. Verify the document was saved

Fields defined

Communication: Enter the title of the communication. If recording more than one step, keep the same title formatting for the communication title.

Link: Copy and paste the URL link to the communication

Process Step: Select the process step from the dropdown menu

Total Minutes: Record the total number of minutes to complete the process step

Word count: Enter the total number of words

Level of effort: Select the perceived level of effort it took to create the content

- 1 = Easy (i.e., copied and pasted content with no edits)
- 2 = Somewhat easy (i.e., copied and pasted content, updated wording, shortened content)
- 3 = Moderate (i.e., copied and pasted content various parts, changed sentences, words, organized structure)
- 4 = Hard (i.e., wrote content dependently based on draft with significant changes)
- 5 = Very hard (i.e., wrote content independently, formatting, significant content updates)

Reading time: Enter the Grammarly reading time count in seconds

Readability: Enter the Grammarly readability score

Overall: Enter the Grammarly overall score

Clarity: Enter the Grammarly clarity rating

Engagement: Enter the Grammarly engagement rating

Delivery: Enter the Grammarly delivery rating

Organic Engagement Rate: (social post only) Enter the Sprinklr Organic Engagement rate 7 days after the post is live

Writer: Enter your name

Comments: Add any additional comments you feel are necessary

Feeds Process Steps:

- Create Feed Comm

Smart Brevity Process Steps

- Create Smart Brevity format from draft

Thought Leadership Process Steps

- Create interview questions
- Transcribe interview audio
- Review transcript for key points
- Write draft

Social Post Process Steps

- Review thought leadership article
- Draft LinkedIn Post - Maximus
- Draft Twitter Post - Maximus
- Draft Facebook Post - Maximus
- Draft Instagram Post - Maximus
- Draft LinkedIn Post - Leader
- Draft Twitter Post - Leader
- Draft Facebook Post - Leader
- Draft Instagram Post – Leader

Grammarly score conversion table code

Clarity
Unclear = 1
A bit unclear = 2
Mostly clear = 3
Clear = 4
Very clear = 5
Engagement
Bland = 1
A bit bland = 2
Engaging = 3
Very engaging = 4
Delivery
Serious issues = 1
Very off = 2
Slightly off = 3
Just right = 4

Appendix B

Tool Evaluation

Overview				
<p>This form will be used to assess and evaluate AI vendors for the Corporate Communications writing assistant proof of concept. The form is designed to provide an objective evaluation of the vendor's services, capabilities, and pricing.</p> <p>As reminder, the use cases for this proof of concept is for Feeds, Smart Brevity, Thought Leadership, and Quarterly Leadership Meetings processes.</p>				
Rating Scale				
Use the rating scale below when evaluating each proof point.				
1 = Very poor				
2 = Poor				
3 = Average				
4 = Good				
5 = Excellent				
Functionality				
Rate the functionality of the tool				
	Jasper.ai	ChatGPT	Writer	Copy.ai
Accuracy of understanding and responding to the prompt				
Relevancy and usefulness of information				
Easy to navigate				
Relevant workflows				
Customizable workflows				
Translation into other languages				
Reference citation				
Customizable to brand - style guide and tone management				

Learns from past entries				
SEO capabilities				
Relevant and diverse templates				
Output				
Rate the content output of the tool based on the prompt given.				
	Jasper.ai	ChatGPT	Writer	Copy.ai
Quality of output (produced well, written and grammatically correct)				
Demonstrates a clear understanding of the topic				
Meets the requirements of the prompt(s)				
Output has no perceived bias				
Tone and style appropriate for the intended audience				
Output is organized in a logical manner				
Output provides new insights or perspectives on a topic				
Efficiency				
Rate the efficiency of the tool.				
	Jasper.ai	ChatGPT	Writer	Copy.ai
Responds quickly to the prompt				
Efficiency in producing output				
Output meets the requirements of the prompt				

Handles multiple prompts at once				
Intergrates with other tools or platforms				
Comments				
Enter comments based on your experience of the trial.				
Which tool would to recommend?				
What do you like most about the tool you selected?				
What do you like least about the tool you selected?				
What other solutions or use cases do you see this tool being used?				
Overall Rating				
Summary of scores				
Vendor	Jasper.ai	ChatGPT	Writer	Copy.ai
Functionality Total score				
Quality of Output Total Score				
Efficiency Total Score				
Total				

Appendix C

Employee Survey

Survey Intro

Corporate Communications is conducting research on various writing methods. This survey aims to gather your feedback on nine writing samples.

There are three topics with three samples each that will be presented to you randomly. The samples are general in nature and are not specific to you or necessarily related to Maximus.

Each page will display a writing sample. After reading, provide your honest assessment based on the factors listed below. The survey should take you about 10 minutes to complete.

- Readability
 - How easy was it to read the sample?
- Clarity
 - How clear and concise was the sample?
- Tone
 - How appropriate was the tone of the sample?
- Effectiveness
 - How effective was the sample able to communicate the main point?
- Understandability
 - How well did you understand the sample's subject after reading it?
- Engaging
 - How engaging was the sample?

Your feedback is extremely valuable, and your responses will be confidential and anonymous. Thank you for taking the time to take our survey.

Note: Employees will rank each on a 5 point Likert scale from Poor to Excellent. Each sample will include an open text field for them to enter in any comments or thoughts.

Survey invite communication

Corporate Communications is requesting your input! We are researching various writing methods and asking you to complete our survey.

You will read and assess various writing samples and provide your honest assessment of readability, clarity, tone, and other metrics. The survey should take about 10 minutes to complete and will close at 5 p.m. local time on Wednesday, March 29.

Your feedback is extremely valuable, and your responses will be confidential and anonymous. Thank you for taking the time to take our survey.

Writing Samples

Congratulations/Thank you message

Prompt:

Recently, your employee received the highest quality score on the team based on their performance. You know they put in a lot of effort to achieve this score by taking additional training, acting on feedback from mentors, and having weekly performance meetings with their supervisor. Write an email to all the team members congratulating them on their achievement and thank them for their contributions to the team and company.

Activity	Survey ID	Sample
Writer Alone	43	<p>Thank you for all of your hard work recently. Your contributions to our team and the company are valuable, and I hope you know how much I appreciate you.</p> <p>I especially want to recognize Jane Doe, who received the highest quality score during the most recent performance evaluation. Jane completed additional training courses, acted upon feedback from her mentors, and came to her weekly 1:1 meetings prepared with updates on and ideas for our projects. Her efforts demonstrated her commitment to her role, willingness, and desire to learn.</p> <p>Please join me in congratulating Jane on her achievement. Her hard work is what helps us move people forward</p>
Human and AI	90	<p>I am thrilled to share that Sherry achieved the highest quality score on the team for February! This is a significant accomplishment and a testament to her hard work and dedication.</p> <p>Sherry put in great effort to reach this goal, including taking additional training, having weekly performance check-ins with her supervisor, and adapting to the feedback she received from her mentors.</p> <p>I am grateful for her contributions to the team and company. Sherry's success is an inspiration to us all!</p> <p>Please join me in congratulating Sherry on her achievement.</p>
AI Alone	38	<p>I am happy to announce that one of our team members has achieved the highest quality score on the team. We are proud of their hard work and commitment to excellence.</p> <p>Their dedication to the team and the company has been extraordinary and they should be commended for their efforts. They have taken additional training, acted on feedback from mentors, and had weekly performance meetings with their supervisor. This is a testament to their hard work and dedication to our team.</p>

		Please join me in congratulating them on this impressive accomplishment. We are lucky to have them on the team and thank them for their contributions.
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Why company core values matter

Prompt:

You are one of the company's communications department writers who creates and writes content for the company's employees to inform and engage. One of your tasks is to write about why the company core values matter should matter to employees and how it drives the company forward. Your output should not be longer than two paragraphs.

Activity	Survey ID	Sample
Writer Alone	56	<p>A company's values demonstrate its priorities and mission to those they serve. Employees should consider company values as stepping stones to align with goals and expected outcomes. Values bring people together and empower them to strive for the greater good.</p> <p>Studies show that job seekers are searching for companies with purpose, ethics, and morals. Companies that demonstrate how values connect to their work will attract top talent. Employees who resonate with a company's values will translate personal impact into propelling a company toward future goals.</p>
Human and AI	26	<p>Values are the beliefs and principles that guide our mission and operations. They act as a moral compass, driving us to create the company of the future. It is essential for us, as a unified team, to understand and embrace these values. Doing will enable you to contribute to our successes and develop your career.</p> <p>Having a shared set of core values gives us a collective purpose and a sense of purpose and unity, as we work toward a common goal. Moreover, these values can help to create a healthier and stronger work culture, where everyone is given the respect they deserve and the opportunity to reach their full potential. Led by the same values ensures all decisions are made in the best interest of the company, its customers, and its employees.</p>
AI Alone	66	<p>The company core values are the foundation of our organizational culture and mission. They help guide our business decisions and shape our relationships with our customers, partners, and employees. By committing to these core values, we ensure that our business will remain focused on our customers and remain competitive in the market.</p> <p>Our values are the foundation of our success and the cornerstone of our relationships with our employees. By embracing these core values, employees can be assured that their efforts are recognized and appreciated. Our values also remind us to always put our customers first and to strive for excellence in all that we do.</p>

		By living and breathing these core values, we strive to create a workplace environment that is collaborative, creative, and rewarding. We believe that by embodying our core values, we can foster a culture of respect, trust, and innovation that will help drive our company forward.
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Importance of recording your time daily

Prompt:

Recently, employees in the company have not been completing their timesheets daily. Write a brief communication to staff stating the reason why they must complete this task daily, the importance of timekeeping, and what it means to the company.

Activity	Survey ID	Sample
Writer Alone	1	<p>We have noticed that employees have not been completing their timesheets daily. We want to ensure that all of our employees understand why it is so important that timesheets are completed and submitted at the end of each workday.</p> <p>Timesheets allow our payroll team to ensure all employees are compensated for the work completed each week and receive their pay on time. Also, timesheets allow managers to track staffing levels, time office, performance, productivity, and efficiency of their teams. In some cases, they can assist in the justification of adding more team members to understaffed departments.</p> <p>We thank all of you for all your hard work and attention to this important business practice.</p>
Human and AI	71	<p>This is a friendly reminder to complete your timesheets each day. Timekeeping is very important for the company because it's how we measure productivity, track attendance, and plan budgets for future projects. Additionally, it ensures that you are receiving the correct amount of pay for the hours you've worked.</p> <p>We appreciate your cooperation with this task and thank you for helping our company run as smoothly as possible.</p>
AI Alone	52	<p>We appreciate your hard work and dedication to the company but we need to ensure that all employees are completing their timesheets daily. Timekeeping is an important part of any business. It helps us to track our progress, ensure that tasks are completed on time and that employees are paid correctly for the hours they have worked.</p> <p>For these reasons, it is very important that all employees complete their timesheets daily. This provides us with an accurate record of who was working on a particular day and when, and will ensure that our records</p>

		<p>are up to date. It also helps us to ensure that all employees are paid correctly for the hours they have worked.</p> <p>We understand that completing timesheets can be time consuming, but it is essential to the success of our business. We thank you for your cooperation and ask that you continue to complete your timesheets daily.</p>
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