
Created by Humans & AI?

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ABSTRACT

While looking to expand our digitally produced content, applications, and tools, we consistently pay attention to the rapidly developing AI technology. Major tech companies, Fortune 100, startups are rushing to implement AI in their services and operations to stay on top of the competition. The developed world is changing to put AI at the front of the new wave of technical innovations. Whereas this seems like a logical expansion of the last decade's emphasis on AI progress to increase strategic and operational efficiencies, we are also opening the door to new challenges and potentially regressive societal outcomes. This paper will discuss the options and choices we face while integrating AI into our processes. Primarily, the role of bias in creative processes backed by AI generative tools raises questions about the ethical use of new technology. While AI tools may provide faster innovation processes, will those products reflect sustainable and responsible innovation? There's much to be said about the responsibility we, humans, have to evaluate AI-produced content and products. Will our choices about the present and future be sourced from our positive, creative, and emotional human side and responsibly balanced in the AI algorithms? We will review the practical implementation of generative AI and what to look for to minimize biased or exaggerated results. "What is perhaps at the core of the experiences [and applications] we create, as well as our platform itself, is AI. AI is the runtime that is going to shape all of what we do going forward in terms of the applications as well as the platform advances." - Satya Nadella, Microsoft CEO, speaking at Microsoft's Leading Transformation with AI in central London, May 22, 2018. We are now amid what Nadella was talking about in 2018. As further insight is provided to companies' C-suite and management on building and executing AI/ML models, the industry and academia can create standards and considerations for the future of responsible AI innovation. We will examine these opportunities and solutions to implement in our product development processes.

Keywords: Artificial intelligence, Martech, Human interaction

INTRODUCTION

Generative AI, as this paper references, is a subset of artificial intelligence that leverages machine learning and deep learning techniques to generate data. Content generation, for example, is the most widely used tool, and it has improved significantly in just a short time. Marketing groups actively use the tools to create new content, which has proven to be an effective time-saver for many teams.

Other examples of generated data are images and videos. Midjourney is one of the popular tools used for image generation, along with ChatGPT's newer capabilities, Google Gemini, and many others.

Creating music and sound with tools like Magenta, a Google project, combines AI and music. Its generative models can compose melodies, harmonies, and complete music pieces across diverse styles and genres.

We will further explore some of the practical applications of Generative AI and review some of the important questions about the coexistence of us, humans, and AI.

WRITING CONTENT WITH GENERATIVE AI

AI tools like ChatGPT and Grammarly are extensively used for writing and editing content. They help generate ideas, ensure grammatical accuracy, and adjust the tone to suit the target audience.

Effective Applications

Ideas generation: ChatGPT can generate essays on specific topics and adjust the audience's tone or level of education. For instance, a marketing team might use ChatGPT to brainstorm blog post ideas or develop initial drafts of articles on emerging industry trends.

Grammar and tone check: Grammarly can rewrite portions of text, correct grammar, and check for readability and tone. This ensures the content is error-free and resonates well with the intended audience.

Step-by-step instructions: AI can create detailed instructions on various topics ranging from cooking recipes to data science strategies. For example, a user might ask ChatGPT for a gluten-free chocolate cake recipe and receive thorough instructions on ingredients and preparation steps.

Human Contributions

Unique perspectives: Human experience and expertise add a perspective that AI cannot replicate. While AI can provide a solid foundation, the nuanced insights and personal experiences that we bring make the content more relatable and authentic.

Personalization: AI-generated language can be too perfect and structured. Humans can make it more personal and engaging by infusing the content with a conversational tone, humor, and emotional elements that resonate with readers.

Current trends: AI may provide outdated content. Humans ensure that the latest trends and innovative ideas are included. For instance, we can incorporate the industry's most recent strategies and trends when discussing marketing ROI.

DESIGN APPLICATIONS

Generative AI tools like Adobe Firefly have transformed design processes, enabling the creation of patterns, image enhancements, and vivid illustrations.

Effective Applications

Pattern designs: Designers can efficiently generate textures and backdrops using Generative AI. For example, they can quickly create patterns for websites or digital backgrounds with just a few prompts.

Image enhancements: AI can enhance images by creating professional headshots. This capability is beneficial for social media profiles and professional portfolios. It can also speed up correcting images, which used to take time in programs like Adobe Photoshop.

Nature and animal imagery: Generative AI excels in creating vivid illustrations. Designers can use these tools to generate high-quality images of animals and nature scenes for various projects.

Human Contributions

Reducing bias: No matter what tool is used for generating images, it still comes short of making an image that combines men, women, girls, and boys, as well as different races and ages. The models need more data to fill in the gap of available internet images of women, older people, kids, and various races. A few years ago, when stock photos were the primary source of pictures added to websites, most contained the white and young population. A study published in 2021 found that lighter skin colors were represented substantially more in stock images than darker skin colors. In the interview published in *Forbes* in 2022, David Holtz, Founder and CEO of Midjourney, talked about the origin of the dataset: *“It’s just a big scrape of the Internet. We use the open data sets that are published and train across those.”* Hence, the result is biased images produced by generative AI. This is our opportunity to decide what works best in our final designs and what diversity should look like.

Real photography: AI struggles with creating detailed human expressions and realistic photography. Human input is essential. Photographers can capture the nuances of human emotions and interactions that AI-generated images cannot produce.

Initial ideas for designs or conceptual images are all good examples of Generative AI.

CHAT CAPABILITIES IN PRODUCTIVITY APPLICATIONS

Productivity applications, such as project management tools, automation, customer experience analytics, and others, add LLM-powered AI assistants. They help with efficiency and serve as a springboard to solving problems.

Effective Applications

Basic suggestions and guides on how to solve a problem: The AI assistant helps start a problem-solving strategy. In Smartsheet, for example, it suggests formulas and appropriate syntax.

The approach to addressing the prompt within the common knowledge-base: Generative AI draws conclusions from already available information. This information is usually a publicly accessible knowledgebase, like

Wikipedia and other Internet sources. Within enterprise applications, the prompt reply may contain data from proprietary sources. Regardless of the source, responses are typically sufficient for informational purposes.

Save time on tedious analysis that requires computational knowledge: When data needs to be analyzed, AI assistants can help summarize data, create statistical analysis, and visualize data representation. This saves a lot of time and allows us to concentrate on the results of data analysis rather than the actual processing.

Code syntax to assist developers: Like formula suggestions, chats can generate code with comments and straightforward strategies to approach a set problem.

Human Contributions

Contextual knowledge of an issue: While generated information is a good start, and even if the prompt contains details to provide better context, our understanding of the applicable solution, considering the full picture and how the information can be used, is still needed. More specifically, in Smartsheet, if we ask to generate a formula to concatenate values in various columns, the result will produce it. Still, if there are exceptions and additional conditions that should be considered, it would not produce the desired outcome.

Creative approach to solving a problem: There are always different ways to approach a problem. AI assistants will provide the most common way to approach a typical issue. They will not produce innovative solutions and creative ways to make something work. We can always take AI's suggestions and put our spin on how we apply them.

Apply analysis to inform implementation strategies: If we prompt AI for a specific strategy to implement automation, for example, or create a workflow, it will provide options. We need to check how it will work and what other implications should be taken into consideration.

Collaborative problem-solving: Collaborative problem-solving occurs when a group gathers and brainstorms ideas and approaches. Everyone comes to the table with their own experiences, exceptions to the rules, and additional contexts that will help inform the outcome. Even if we each decide to solve the same problem using AI, the individual prompt will contain different details that will produce different results.

EXPECTATIONS AND REALITIES OF AI & HUMANS

Prompt engineering is becoming an art. The results will be based on what we ask. As we discussed before, we get structured and typically concise results that should be reviewed and then adapted into the final context.

In the marketing industry, prompt engineering is kept at a very basic level, typically engaging with content creation and deriving information. While there are advanced techniques to improve results and do more programmatically, the lack of technical skills and knowledge makes it difficult to use prompting to its full capacity.

The industry's tendency to release products at 80% readiness always leaves room for improvement and iteration. ChatGPT was controversially released

to the public, but at the same time, it allowed for the proliferation of AI products intended to improve efficiency and explore new possibilities within technology and beyond.

With this said, we will continue to see better-generated results and improved products. There is much excitement around AI and the rapid integration of OpenAI in business applications. While not perfect and, at times, primitive in terms of output, the future looks promising for application usability and possibly even eliminating some unnecessary programs and workflows that will be automated and processed with machine learning.

Time and resources are necessary for the future of AI development. Currently, the costs of training the models are still very high. How sustainable are these practices? According to the 2024 Artificial Intelligence Index Report, the training costs of “...OpenAI’s GPT-4 used an estimated \$78 million worth of compute to train, while Google’s Gemini Ultra cost \$191 million for compute.”

Speaking of sustainable practices, are we considering how balanced the data is from the perspective of diversity and ability? How about economic and societal features? Who sets the standards for future learning algorithms and their results? WSJ published an article in 2024 covering the topic of regulations of Generative AI in the Western world and pointing out that there’s still much work to be done to preserve democracy and social order. Other aspects of sustainability are not covered in this paper.

AI TRENDS IN MARKETING AND ITS COMPLEXITIES

With all that, when we start evaluating the marketing tools used, and now most of them claim to integrate AI in various capacities, we find that the complexity is just the tip of the iceberg. The positives are personalized experiences, better customer engagement, better marketing strategies for targeted audiences, and easier marketing operations. However, it comes with the demand for highly skilled and technically equipped employees who can navigate marketing applications, becoming more technical than marketing-inclined.

In the previous examples discussed in the paper, Smartsheet was mentioned as one of the tools. While AI assistants do a good job at helping with formulas, programming scenarios using complex logical expressions often requires a level of expertise that typical marketing employees may not possess. Consequently, many users tend to rely on the basic functionalities of Smartsheet, leaving the more advanced features underutilized despite their potential to significantly enhance efficiency and productivity.

Of course, organizations can invest in training and support to bridge the skills gap and encourage the use of advanced features, and many companies do just that. At the same time, if more time is spent training the workers on how to use a program, it takes away time that they can spend on the actual expert-focused work instead.

Another important point to make here is how the AI-powered applications are vetted and what is behind the training of the models used inside them. It is easy to rely on the responses coming from the prompts, and one can copy

and paste the results without checking on the validity. The newer versions of ChatGPT allow the upload of files for processing. A marketing person can upload a datasheet and have the AI analyze it. Sometimes, the results list statistical analysis and methodology supporting the results. Do we then expect the marketing person to understand data science to be sure of the results? If data collection to analyze and report on marketing activities is a challenge, we can only wonder how sophisticated AI tools will predict our future outcomes.

INNOVATION OPPORTUNITIES

Recognizing the issues in marketing applications, the opportunities for innovation are collaborative problem-solving and not just within the industry or academia. The potential is to solve problems together. We see this already in the works in biopharma, industrial, and high-tech industries. We see it less in the professional services industry, but the need remains. Whether we share the knowledge and expertise or create standards and sustainable practices, we can find a better value in collaboration and partnerships.

The complex nature of applications produced within the industry and sometimes outside academic research can put the academic community a few steps behind the fast-moving innovations. As described in the example of marketing, the new standard is beyond the traditional marketing profession. It is now combined with technical skills. It is wearing on the marketing specialists who are trying to stay ahead of the competition and implement strategies that are highly reliant on the newest technology, and in our case, AI-powered tools.

Collaboration opportunities can help to bridge this gap, even beyond executive education. The need for validation and standards that industry professionals prefer not to spend time on is still tremendous. Other areas can be explored further and encouraged within both industry and academia.

CONCLUSION

AI is here to stay, and we are here to make it work better for us. We need to approach AI from a place of sustainability, inclusivity, collaboration, and learning.

It is essential to consider the environmental impact of AI technologies. Sustainable AI practices help protect the environment and ensure that AI technologies remain viable and beneficial in the long term.

AI systems should be built to be accessible to people from diverse backgrounds, including those with disabilities. AI algorithms must account for discrimination and ensure fair treatment for all users. By creating inclusive AI technology, we can harness its potential to benefit more people.

Collaborative methods promote innovation and ensure that AI technologies are aligned with professional demands, societal needs, and ethical standards. Interdisciplinary research efforts can foster mutually beneficial outcomes. Collaboration should involve international coordination to address global challenges and establish proper AI ethics and governance standards.

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