AI Won't Take Our Job: It Will Reshape It

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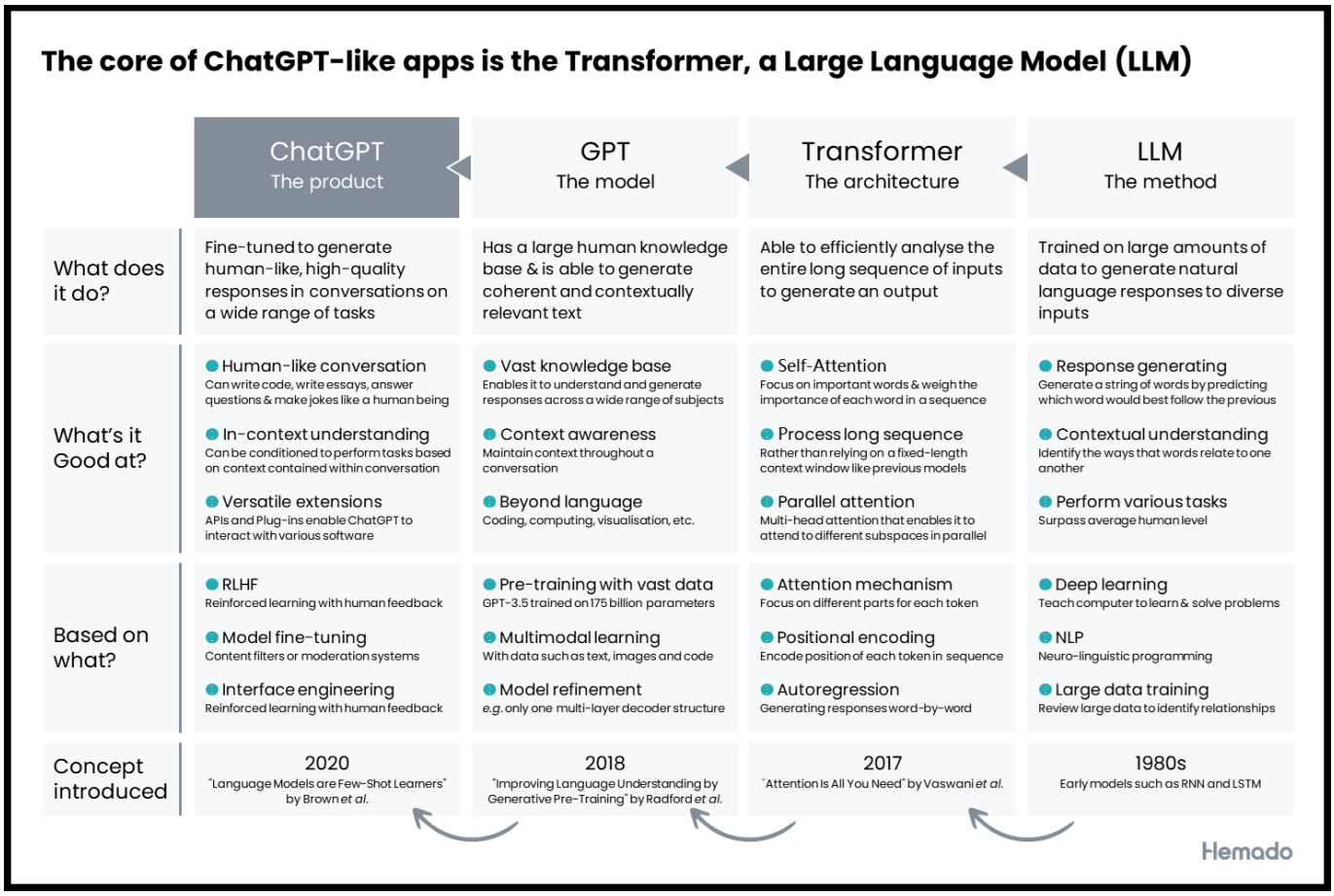
At Hemado, an energy consultancy, our exploration and integration of artificial intelligence (AI) has been an enlightening journey. In this digest article, I will share insights from this experience, discuss the impact of AI on research and consulting roles, and suggest some AI applications that we have found both useful and user-friendly.

We Do Not Need Many Chatbots

In March 2023, Bloomberg unveiled BloombergGPT, a powerful language model built specifically for the financial sector. But, unlike ChatGPT, BloombergGPT does not offer a public-facing chatbot interface, instead focusing on improving the efficiency of data retrieval for its users. Why didn't Bloomberg opt for an omniscient financial chatbot like ChatGPT? Additionally, why haven't there been significant advancements in the corporate adoption of GPT-like products since BloombergGPT's launch?

Figure 1



The answer lies in the rigorous performance standards required in high-stakes sectors such as energy and finance. Creating a specialized large language model (LLM) for a particular industry may seem like a good idea, but it is not that simple. It is hard to match the performance of generic models such as ChatGPT, Claude and Bard with a custom LLM. Because our institutional clients have seen powerful general-purpose models like ChatGPT, their expectations are extremely high. This can put specialized language models in a difficult position when we showcase them.

In addition, the implementation of AI in specialized areas still faces significant hurdles. While AI can speed up processes in low-hanging fruit areas such as data retrieval and generation, its effectiveness in specialized operations remains questionable. For example, the inconsistency inherent in generative AI stands in stark contrast to earlier AI products that offered greater precision. While specialized AIs such as facial recognition might have an accuracy rate of 99.999%, the precision of LLMs is less assured and the product could reveal its limitations soon after stunning at first.

Besides these issues, firms find it hard to track how their employees use generative AI. There's a risk of confidential data being uploaded and leaking in future talks. Earlier this year, Samsung limited its employees' use of ChatGPT following reports that engineers shared source code with the chatbot.

Figure 2

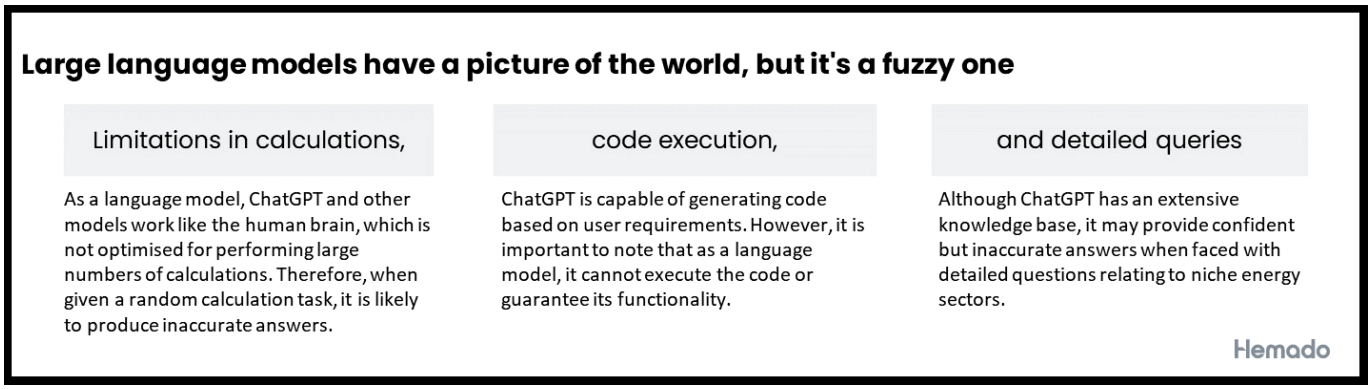


Figure 3

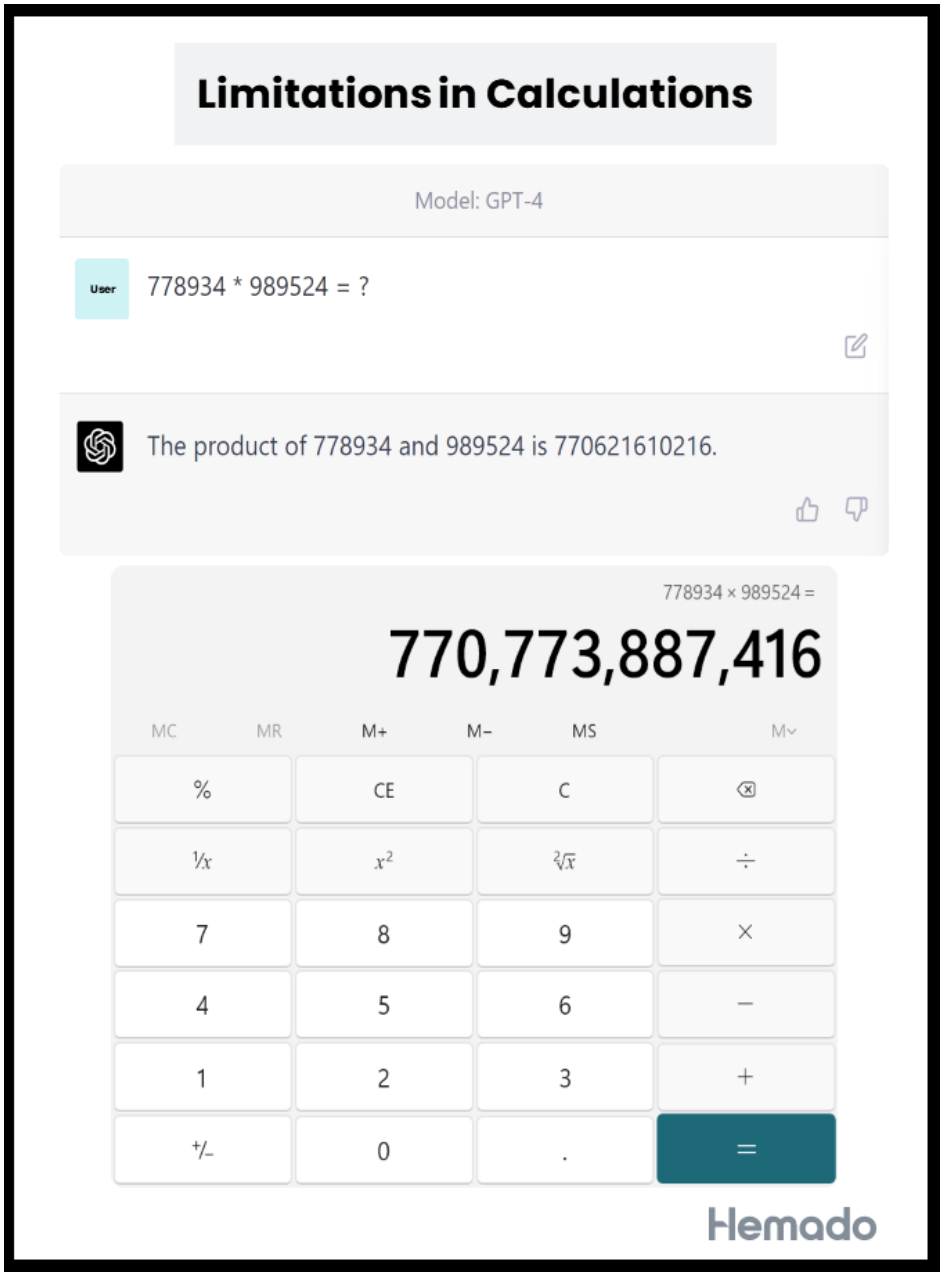

Limitations in Calculations
Model: GPT-4
User
778934 * 989524 = ?
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Figure 4

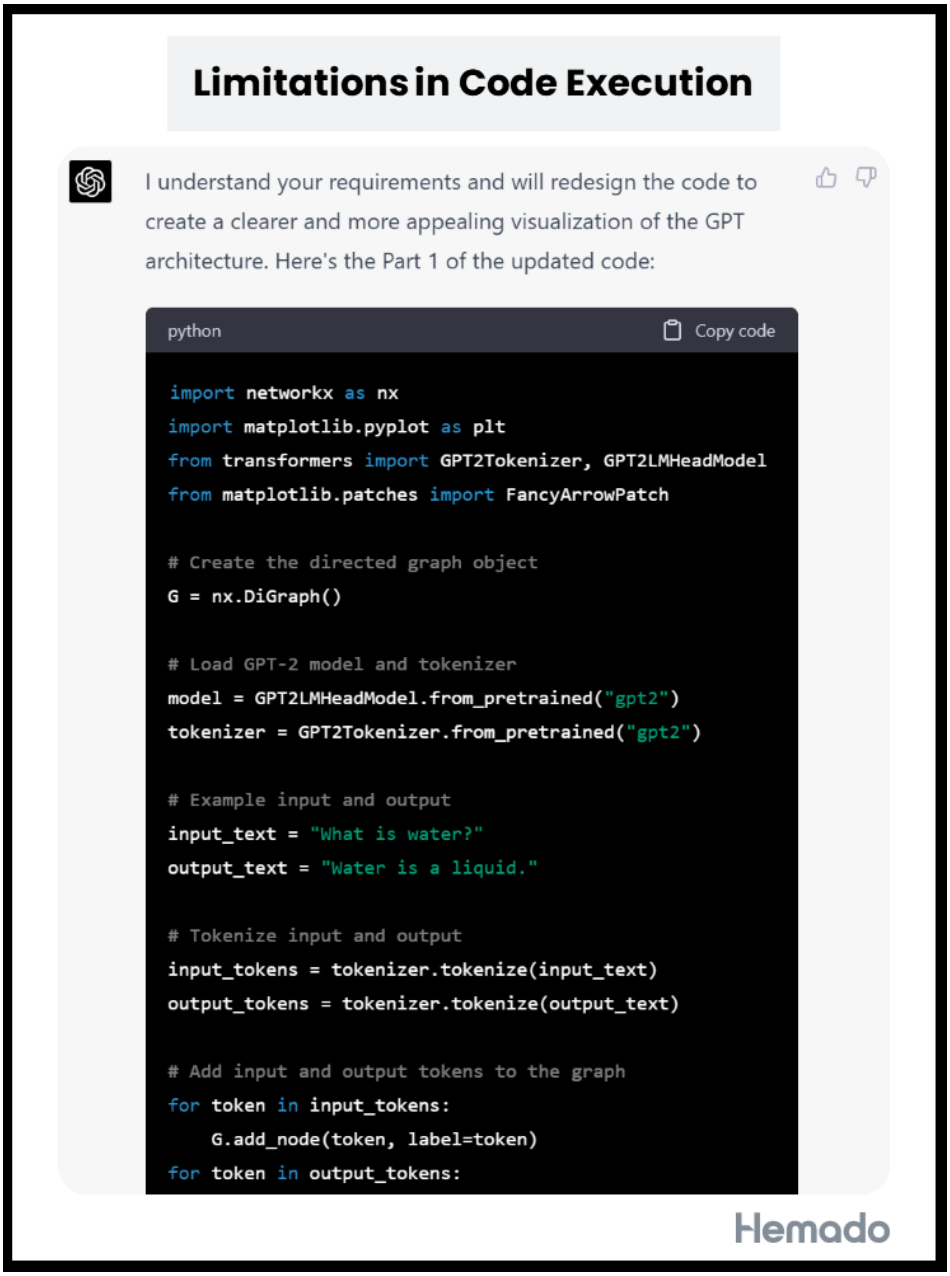
Limitations in Code Execution
I understand your requirements and will redesign the code to create a clearer and more appealing visualization of the GPT architecture. Here's the Part 1 of the updated code:
python
Copy code
import networkx as nx
import matplotlib.pyplot as plt
from transformers import GPT2Tokenizer, GPT2LMHeadModel
from matplotlib.patches import FancyArrowPatch
# Create the directed graph object
G = nx.DiGraph()
# Load GPT-2 model and tokenizer
model = GPT2LMHeadModel.from_pretrained("gpt2")
tokenizer = GPT2Tokenizer.from_pretrained("gpt2")
# Example input and output
input_text = "What is water?"
output_text = "Water is a liquid."
# Tokenize input and output
input_tokens = tokenizer.tokenize(input_text)
output_tokens = tokenizer.tokenize(output_text)
# Add input and output tokens to the graph
for token in input_tokens:
G.add_node(token, label=token)
for token in output_tokens:
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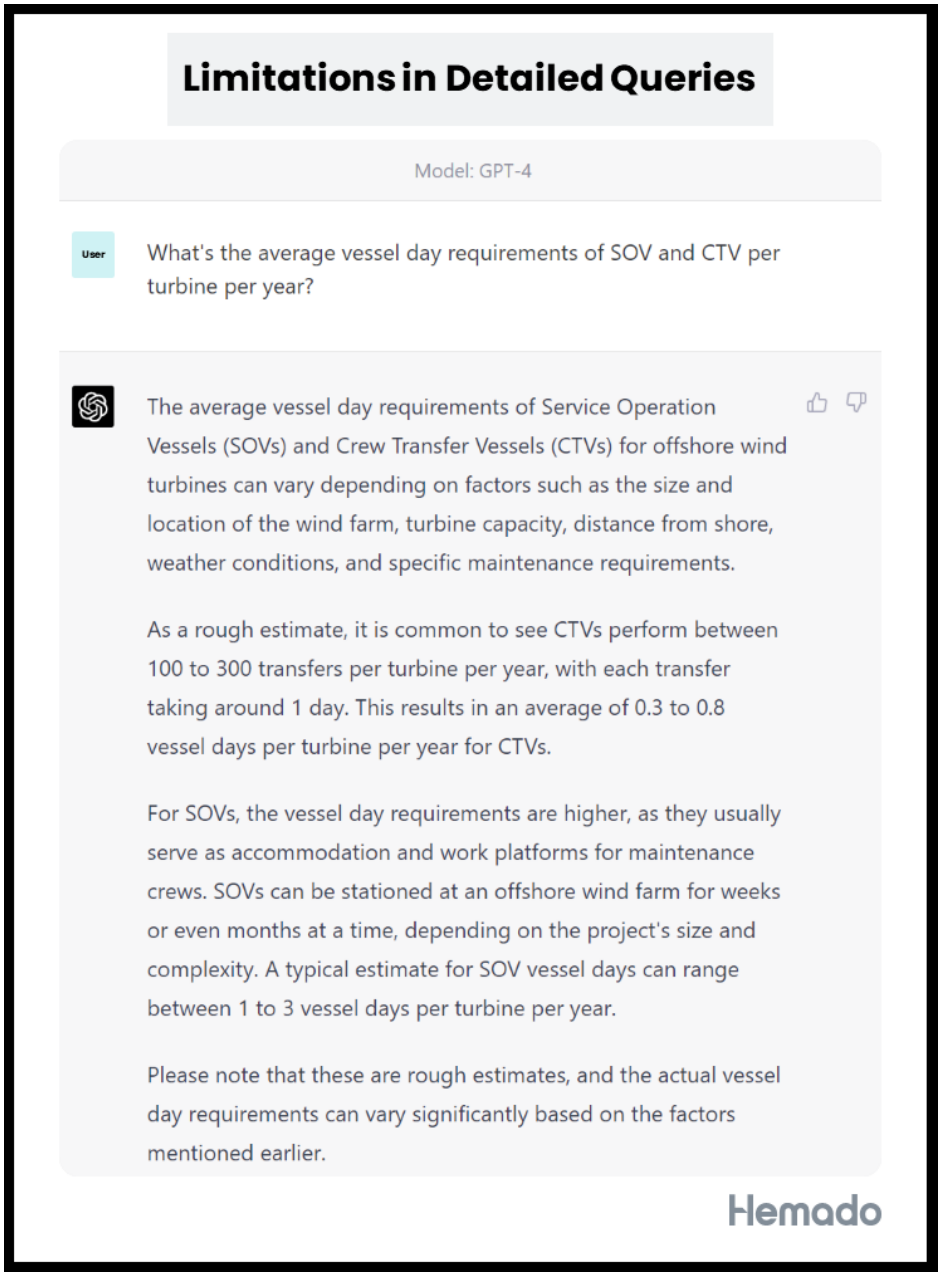
Figure 5



As a result, high-stakes industries that have zero tolerance for "hallucination," *i.e.*, the confident delivery of incorrect information, often find language models unsuitable. This often leads to the rejection of AI implementations at the proof of concept (POC) stage.

At Hemado, our attempt to develop a GPT-like product for renewable energy has resulted in more accurate, structured answers in certain cases. However, it is not immune to hallucination and its flexibility is not on a par with general models. As a result, the value proposition as a standalone chatbot was unclear to our customers, given their high demands for reliability and structured delivery. So, like Bloomberg, we

decided to use our model to improve our internal processes, leveraging the strengths of AI while mitigating its limitations.

AI is a Tool, Not a Replacement

The truth is that our customers do not just want a fancy AI model. They want a simple, reliable solution that solves their specific problems. Even if we can deliver more powerful, unified AI models in the near future, delivering a solution that really works for our clients is still a big challenge.

That is why the primary goal of using AI in research and consulting is not just to demonstrate AI capabilities, but to deliver robust, professional end-user solutions. Delivering AI directly to clients may not be the best approach. The benefits that specialized AI models, such as BloombergGPT as a chatbot, offer over more general models, such as ChatGPT or Bard, may be marginal and insufficient to simplify client tasks.

Instead, researchers and consultants who integrate AI to improve their productivity, quality and presentation are likely to achieve more fruitful results. However, they must take full responsibility for managing the potential risks associated with the use of AI.

Either way, if your job involves high stakes and precise decision-making, AI is unlikely to usurp your role: not any time soon.

AI Literacy is the Way Forward

Jensen Huang, CEO of Nvidia, likened the emergence of ChatGPT to the "iPhone moment" of AI. However, the full potential of this "moment" may still be ahead of us. Just as the iPhone did not fully mature until the release of iPhone 4, today's AI applications are still in their infancy, comparable to the first basic iPhone Operating System (IOS) apps such as Calculator and Flashlight.

The future of AI is likely to see advances in multimodal capabilities and longer context handling. This will provide a robust platform for AI applications to really shine. So it is important not to rush, but to prepare and position ourselves for the exciting era of AI applications yet to come.

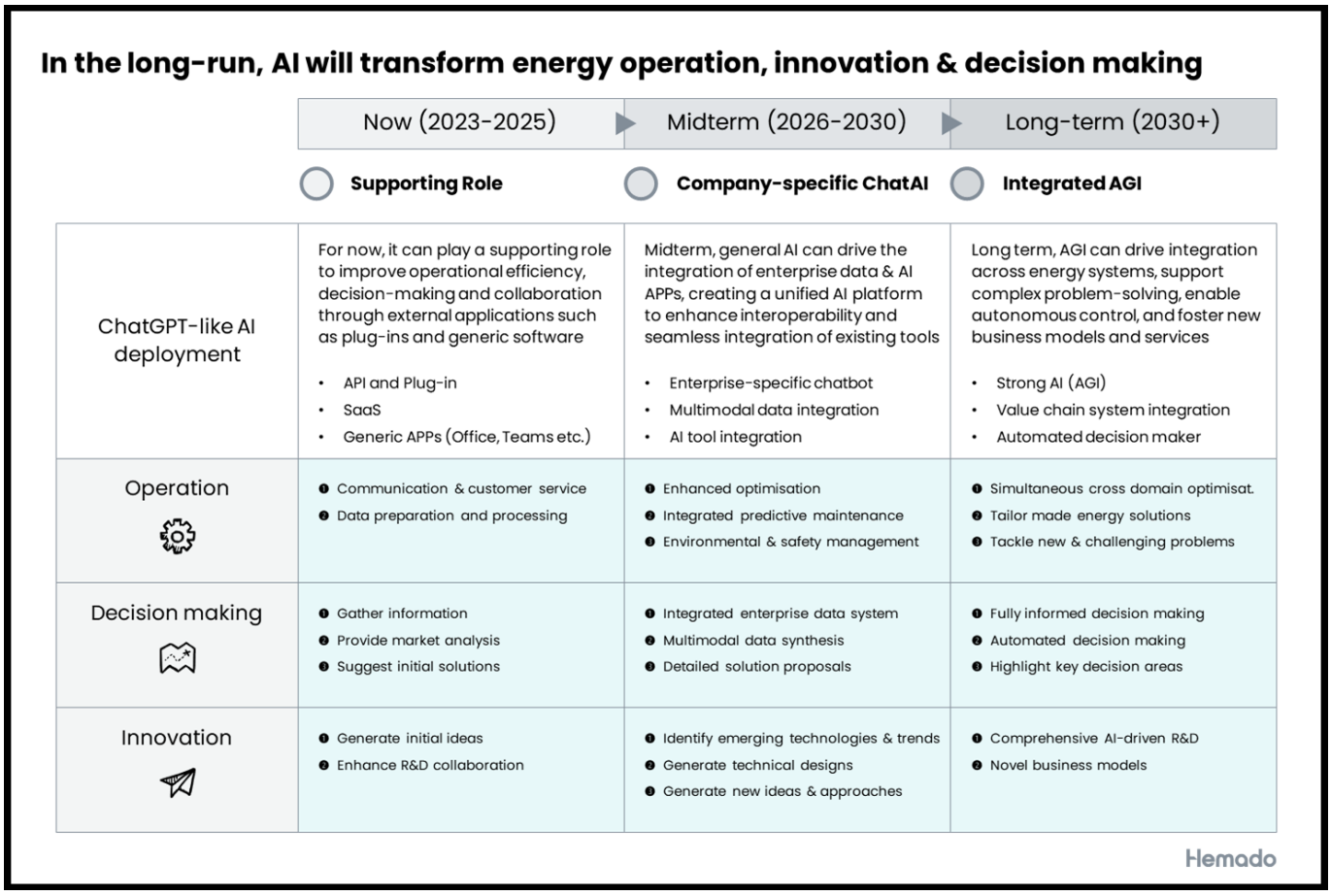
For the time being, I think it is better to think of AI as a tool to enhance our work, rather than an extension of our business. What we can do is integrate AI seamlessly into our workflow. AI can dramatically improve our productivity. It can handle routine tasks such as translation, proofreading and summarization. It can also be a tireless knowledge tutor, helping you quickly grasp the essence of new topics or fields. It can even help with initial idea generation and design, providing an initial integration of a framework on which to build.

Many AI tools have emerged that can significantly improve the way we conduct research, analyze data and present ideas. For example, some recommended tools include:

- Audiopen.ai for instant voice-to-text transcription.
- Rewind.ai as AI assistants to answer any questions based on your past interactions with your computer.
- Readwise.io/read for serious readers, providing summaries and Q&A for saved articles.
- GPTs as specialized AI agents for specific tasks.
- Perplexity AI for online searches with accurate and informative answers.
- DeepL translator for translating texts between different languages.

Anyway, the key is to use AI applications as a tool within your workflow, taking what AI can offer and enhancing it to increase your productivity and meet the professional standards of your field.

Figure 6



In conclusion, while the future promises an AI revolution, change is often incremental. In the words of Roy Amara, the American scientist and futurist, "We tend to overestimate the impact of a technology in the short term and underestimate the impact in the long term."

"AI won't replace your job, but a person using AI will." As AI evolves, it will redefine our roles. Efficiency gaps will widen, the nature of work will change and standards of professionalism will rise. Those who embrace AI at the right pace, with a clear purpose, will add increasing value along the way.

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Dr. Victor Liu is an energy consultant with more than 15 years of global experience. He was previously Director of Consulting at Wood Mackenzie and Head of Transaction Services at Infield Systems in London.

Dr. Liu has extensive knowledge and experience in renewables and energy transition. At Hemado, he has advised international energy companies on renewable energy, digitalization strategy, market expansion plans and investment appraisal in cutting-edge green technologies such as hydrogen, carbon capture, utilization and storage (CCUS), floating wind, microgrid and virtual power plants (VPP).

He has also led several due diligence projects for mergers-and-acquisitions (M&A) transactions on behalf of top-tier financial institutions, including KKR, Goldman Sachs, Carlyle, Basalt and Alchemy. He has also led strategic or commercial advisory projects for a number of industrial companies including General Dynamics, CIMC, PetroChina, Nippon Steel, Acteon, Hydrasun and Centurion.

Dr. Liu is a regular speaker at global energy conferences and has published his findings in academic and industry journals. He is also a member of the editorial board of Bayes Business School's *Commodity Insights Digest* (*CID*). His academic qualifications include a Ph.D. in Financial Engineering from Bayes Business School (formerly Cass) in London, and a B.Sc. and M.Sc. (first class) in Economics from the University of Bath, U.K.