AI alone ain't enough

December 29, 2023

Crafting adept prompts and posing insightful queries to the model is crucial

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6 min read Last Updated : Dec 29 2023 | 10:29 PM IST

The advent of generative Artificial Intelligence (AI), marked by OpenAI's launch of ChatGPT and DALL-E alongside Google's introduction of Studio Bot, Bard and Gemini with accessible APIs (application programming interface), has triggered a frenzy among firms — both large and small — to swiftly integrate AI into their systems in the hope that the technology is the final frontier for competitive advantage.

These generative AI models, proficient in intelligently generating text, images, audio, and other content, have revolutionised tasks demanding human intelligence and creativity. From language translation to data analysis, report writing to software code generation and even creation of deep fakes, these models execute complex operations in the blink of an eye. Does it follow that AI can even commoditise innovation? What is the implication for firms that

depend on innovation for their competitive and strategic differentiation? Is AI sufficient and necessary for organisations to have competitive and strategic advantage or will it be just another layer of information technology (IT) infrastructure?

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Generative AI models derive their excellence from extensive training on mammoth datasets, with OpenAI models notably utilising the world's largest dataset — the colossal and ever-expanding internet, which boasts a staggering 157 trillion gigabytes. The internet's vastness provides a rich and diverse array of information spanning an extensive range of contexts, closely mirroring the complexity of the real world. Well-designed AI models trained on internet data also learn to distinguish signal from noise while navigating through valuable and irrelevant information.

With accessible APIs, such as those offered by ChatGPT and Gemini, there is a democratisation of access to Generative AI. These APIs serve as user-friendly toolkits, enabling the development of context-specific and firm-specific applications on the foundation layer. This accessibility has facilitated the integration of AI into the systems of even medium and small enterprises, drastically reducing the time and cost associated with AI implementation. Undoubtedly, these implementations will bring greater organisational efficiency and contribute to cost savings in these organisations. But will it provide competitive advantage?

On the contrary, it can be argued that widespread adoption of the common base model, such as ChatGPT or DALL-E, trained on the ubiquitous internet dataset, may breed homogeneity across firms, particularly in small and medium enterprises lacking proprietary data or models. Generative AI risks commoditising features that were erstwhile considered distinctive and offering competitive advantage, such as personalisation or local language enablement. As generative AI becomes standard for data analysis and reporting, decision-making may converge, leading to similar outcomes. Even sentiment analysis conducted on social media may yield comparable results, given the public availability of social media content. AI-powered cybersecurity products will undoubtedly bolster cybersecurity profiles, but given their availability for all, they are also unlikely to provide any marked differentiation for firms. As organisations navigate the era of ubiquitous AI adoption, the challenge will lie in preserving distinctiveness amid a landscape tending towards uniformity.

While some of the conventional avenues for creating competitive advantage may fade, yet generative AI holds promise of forging novel paths to differentiation. I posit the following four drivers of such competitive advantage.

The first driver would be mobilising context-specific datasets. Organisations endowed with extensive proprietary datasets will gain strategic edge as these datasets will empower generative AI models, enabling superior output quality compared to competitors. For instance, an IoT-enabled car manufacturer armed with proprietary data can provide

predictive maintenance, thereby reducing costs in contrast to competitors. Entities lacking proprietary data may leverage datasets of other producers if the data monetisation framework permits such transfer of data between data producers and data consumers. A pharmaceutical research and development firm may collaborate with numerous hospitals to access anonymised patient data, enhancing drug development outcomes. Such data transfer necessitates a robust economic-technical-legal framework, addressing the economic interests and privacy concerns of all stakeholders. Government of India's data empowerment and protection framework, supported by the Digital Personal data Protection Act, 2023, is a step in this direction.

The second driver could be the ability to elicit creative results from the generative AI model. Crafting adept prompts and posing insightful queries to the model is crucial. As a doctoral student is told, framing the right research question is half the PhD thesis, framing the right prompt to generative AI is not trivial. The emerging skill of prompt engineering is likely to be pivotal as skilled prompting will allow firms to stimulate creative responses, fostering innovative ideas and solutions for managers.

The third driver for competitive advantage for firms would be compute power. Firms will invest in advanced dedicated compute capabilities for AI. This trend is always visible as many big companies have committed billions of dollars towards procuring advanced Nvidia processors for dedicated AI compute capabilities. This will enable them to train models more quickly and efficiently, as well as experiment with different model architectures, hyperparameters, and training strategies, leading to better performing models. More compute power would also enable faster iteration cycles, use larger training models with more parameters, which capture more nuanced patterns in data, handle big data, and carry out real-time processing.

The fourth driver would be AI research and development. Although generative AI marks significant progress, we are distant from machine intelligence rivalling human capabilities. Over time, this gap will narrow, and enterprises navigating in this evolutionary direction will inherently gain strategic advantage over others.

The prevailing excitement around generative AI adoption echoes the early days of IT adoption. Widespread IT implementations led to standardisation and commoditisation permeating in IT components — hardware, software and networks. This commoditisation prompted journalist Nicholas Carr to ask the question in a famous Harvard Business Review article, "Does IT matter?" He argued that IT had become a commodity and that investments in IT infrastructure no longer provided a competitive advantage. He later answered the question in another paper titled "IT does matter". Addressing the same question, in the context of AI implementations, it appears mere adoption of AI isn't enough, and a competitive advantage would require additional drivers.

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