How AI could supercharge commercial innovation

OpenAI's GPT has showcased the potential of so-called 'generative AI' to automate and accelerate creativity from auto-generated magazine covers and songs to emails and marketing videos. We have also seen fears that its capacity to make realistic variations of existing content such as deep-fake videos could make disinformation harder to detect.

Temps de lecture : minute

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Yet few realise that generative AI also has the potential to democratise innovation and fertilise disruptive new businesses, products, and services by putting unfathomable cognitive power and creativity in the hands of all business workers. Its distinguishing feature – the ability to create artificial new content from existing information – has far-reaching applications from the automation and acceleration of drug discovery and R&D to smarter trading predictions, fraud detection and risk modelling. And free open-source generative AIs are making these innovations equally accessible to businesses large and small.

The evolution of AI

AI is rapidly colonising modern commerce from business process automation and fraud detection to drug discovery and chatbots. And a new movement to create more user-friendly AI has spawned generative AI and augmented intelligence, two convergent technologies with the potential to lower barriers to mass adoption.

These technologies are making AI more accessible to those with limited data experience from startups to entrepreneurs. There is also a growing parallel move to create free-to-use and open-source AIs that open their code to the public, transforming AI from a black box into an accessible glass box.

The cumulative effect of this movement is to democratise AI-powered innovation and bring its creative potential to the masses.

Generative AI

Generative AI is a game-changing technology that could fuel many disruptive new innovations and businesses. By abstracting the underlying patterns in existing data, it can craft sophisticated new content from the raw material of existing images, videos, audio, text, and 3D models. For example, generative AI could produce detailed maps from a satellite image of remote uncharted territories or turn X-rays and CT-scans into photo quality images for more rapid and accurate diagnosis. The same innovation has the capacity to accelerate R&D and increase speed to market for new innovations and help all businesses share and commercialise their most valuable data.

We have all seen how generative AI platforms such as AI-powered writing and text-to-image tools could auto-generate marketing content from emails and social media posts to website product illustrations. Voices can be cloned and used to create new audio content, opening an array of new options from auto-generated corporate training videos and personalised customer service to services automatically customised to consumers in different languages or dialects.

Yet similar technology could also help companies dramatically accelerate product innovation and narrow the gap from concept to commercial product. For example, generative algorithms helped create a new drug to

treat OCD in less than 18 months and helped another company find a new protein target and molecule for a drug treatment at 10% of the usual cost. Gartner predicts that over 30% of new drugs and materials will be discovered with generative AI within two years.

By deriving new innovations from patterns in existing data, generative AI could also help businesses personalise products to individual customers such as prosthetic limbs optimised to the movement patterns of patients. Banking services could similarly be personalised to individual customer behaviour.

Crucially, generating new data that differs from its source material could help small businesses overcome data privacy concerns that prevent them commercialising their data.

Generative AI could create synthetic datasets with all the predictive properties of the original but none of the private information, helping anonymise and commercialise business data. For example, one financial institution had a cache of valuable data so sensitive that its own analysts could not use it. The company used generative AI to create a synthetic dataset from the original which was able to produce ongoing insights that boosted business performance without compromising data privacy or security. One Ayming client used the technology to produce synthetic data that was able to increase the accuracy with which heart anomalies could be detected in small datasets from wearable devices, helping attract tax credits for this pioneering R&D.

This could unlock myriad new commercial innovations by helping businesses share and mine their data for commercial insights without breaching legislation such as GDPR. The capacity to create scalable synthetic datasets from smaller samples could also open AI to smaller businesses with limited training datasets. Generative AI could therefore make the power of data analytics and AI available to more entrepreneurs

and businesses than ever before.

It is estimated that 20% of all test data will be synthetically generated using generative AI by 2025, creating a rich resource for everything from product development to improving business performance.

A wave of innovation

Generative AI could supercharge and spread innovation across the economy by dramatically reducing the cost and timespan for R&D and enabling all businesses to benefit from the power of AI.

Far from replacing humans, this will augment the abilities of researchers, scientists and entrepreneurs and help usher in a wave of disruptive new innovations.

Ayming's business insight note Transformative Technologies *is available to download* _here_.

Iliass Ikhanjal is Senior Manager at _Ayming UK_.

Article by Iliass Ikhanjal