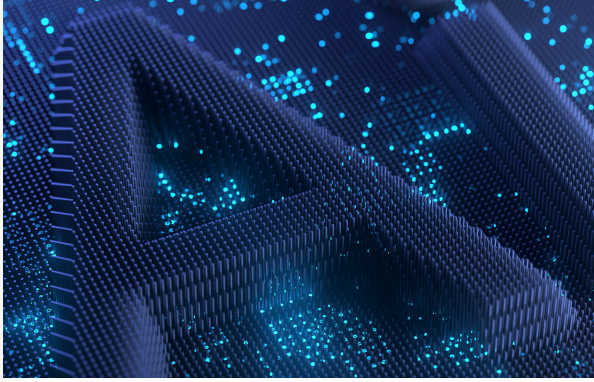
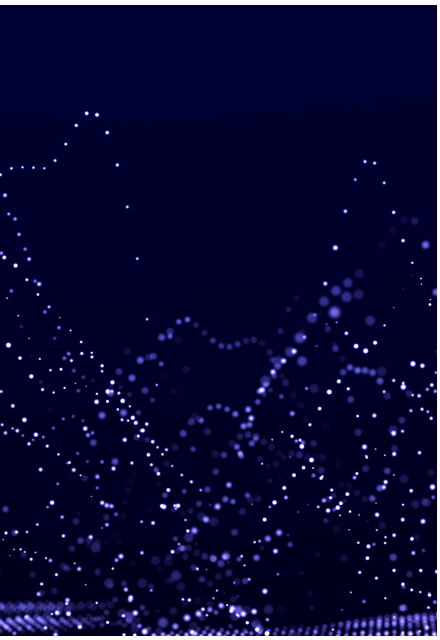
UK Tech: Gen-AI and Value Creation



Introduction

No tech disruption has matched Gen-AI. With tens of millions of users onboarded in mere months, no tech debut has enjoyed the rabid consumption of Gen-AI (McKinsey, 2024). And it doesn't look anything close to a consumer fad — adoption of Gen-AI has rapidly changed the way the tech industry creates value, in the UK and beyond.



What is Gen-AI?

Gen-AI is short for "generative artificial intelligence." Whereas traditional AI is mostly used to analyze and/or interpret data, Gen-AI can actually create new content that mimics the output of human beings from datasets too large for human beings to interpret.

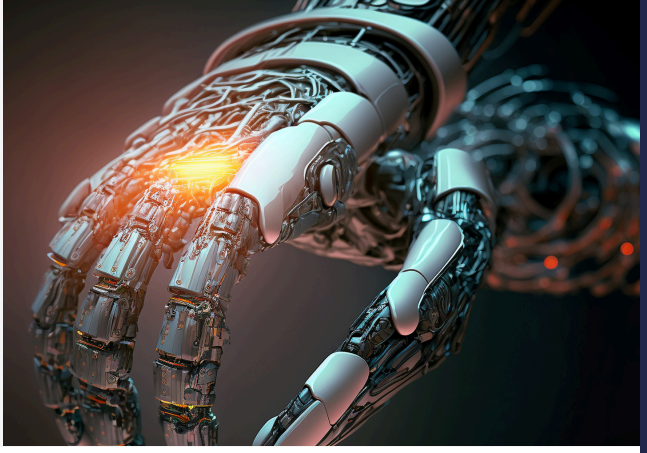
The most famous example is ChatGPT and other GPT apps from OpenAI (GPT actually stands for "generative pre-trained transformer"). ChatGPT generates text, based on text inputs and a dataset of the entire internet. DALL-E by OpenAI is just one example of an app that takes user input and generates images instead of text. Gen-AI algorithms can mimic voices, compose

A Quick History

The seeds of Gen-AI were planted in the 1950s and 1960s, when the exploration of artificial neurons and other breakthroughs in early AI laid the foundation for the first neural networks in the 1980s. The backpropagation algorithms invented in this period enabled the AI to self-correct its internal parameters, essentially the first learning computer.

The 1990s saw many more breakthroughs in machine learning. The first Gen-AI algorithms arrived in the 2000s and 2010s. Generative Adversarial Networks (GANs), introduced in 2013, pitted two neural networks against each other to compete to produce the best outputs.

OpenAI launched its GPT series in 2018, which broke through into the mainstream in the early 2020s, touching off a flurry of rapid adoption, as well as a crisis in thought-leadership over the implications and possible negative downstream consequences of such a disruption.



How Gen-AI Creates Value in the UK Tech Sector

Generative AI has enjoyed fast and widespread adoption in the tech sector, in the UK and beyond.

Many tech companies use Gen-AI to help professional service providers. London-based company Genei helps academics and professionals summarise large quantities of text into easy-to-read summaries and notes. (UK Tech News, 2023)

London-based KYC Hub uses Gen-AI solutions to help financial institutions detect risk and perform due diligence at scale, in compliance with national and international KYC ("know your customer") regulations (Startups, 2023). Also from London headquarters, Sprout.ai helps insurance agents use Gen-AI to automate and simplify the processing of insurance claims (Startups, 2023).

Other tech companies provide broader solutions to cross-disciplinary business problems. London-based tech company Synesthesia lets users upload text and turn it into a video, complete with AI voices and visual avatars, drastically reducing the overhead of video production in terms of both time and money (UK Tech News, 2024). Headquartered in London and around the world, InstaDeep uses Gen-AI to make complex decisions to address multivariate problems for industrial enterprises (Seedtable, 2024).

Benefits of Gen-AI

Gen-AI offers the promise of many benefits, **some of which we have seen in action and others that remain as theoretical use-cases.**

Perhaps most notably, Gen-AI contributes to **productivity and efficiency**, adding the value of increased speed-to-market. It can drastically reduce the time and intensity of various technical tasks, empowering technicians to do much more, much quicker. GitHub Copilot is an example of a Gen-AI code assistant that analyses the progress of development and suggests completion code.

Other vectors of value creation include design and development in product innovation. Gen-AI helps software developers discover unexpected options for interfaces, integrations, and optimisations that might have taken them years (along with a lot of luck) to brainstorm on their own.

Instead of standardised user experiences, Gen-AI can react to user input to generate personalised user experiences at scale, such as marketing messages or content recommendations. **Personalisation is one of the most powerful tools for creating increased user engagement.**

Of course, ChatGPT and its competitors have highlighted the use case of rapid content generation at scale. Gen-AI can take vast datasets and process them into almost any kind of content imaginable – summaries, product documentation, knowledge bases, voiceover narration, animated videos, music ... **almost anything you could imagine.**

The advantages keep stacking up from there. Gen-AI can contribute to quality assurance by identifying defects, simulating scenarios, and generating test cases to improve and iterate products. **It can ingest massive data sets and make strategic recommendations to aid organisations in making data-driven decisions.**

Gen-AI can also **enable remote teams to work together seamlessly** with collaboration synchronisation and real-time virtual assistance. Last on a very incomplete list, Gen-AI can produce realistic training scenarios for technicians and support specialists.

Some Risks to Consider

Exciting as this tech revolution may be, Gen-AI is not without its drawbacks. Moreover, many thought leaders have offered pessimistic predictions of unpleasant consequences.

Gen-AI models are not people. They generate the best output they can based on the parameters of available information, but lacking in human discernment they are capable of producing **irrelevant, inaccurate, or nonsensical outputs**, potentially slowing down processes they were intended to speed up.

Several **ethical issues** arise from Gen-AI. One issue is that Gen-AI algorithms may contain the biases of their creators, either intentionally or through selection of dataset inputs. Another ethical consideration is privacy – **personal, even sensitive data might be included in the vast datasets used to train Gen-AI algorithms.**

The automating and streamlining power of Gen-AI has a potential dark side – putting scores of people out of work. **Workforce displacement** is not just about logistics or the service industry. Lucrative tech jobs could end up being replaced by Gen-AI algorithms.

Gen-AI represents a new vector of cyber-attack. The technology could be used to generate at-scale phishing attacks, false video or audio content, and risks that cybersecurity experts have not even thought of yet. **Additionally, the legal profession has yet to parse how to handle Gen-AI algorithms that pull copyrighted, trademarked, and other protected IP into their datasets.**

Dependency is another looming concern. By becoming dependent on Gen-AI, it is possible that we will produce a generation of low-skilled workers who do not actually know how to do their jobs — they just rely on the AI to do it for them.

Lastly, training of AI requires large amounts of electricity — **a huge potential footprint both monetarily and environmentally.** Finally, the regulatory landscape has not yet adapted to the rapid-fire changes ushered in by Gen-AI. For the foreseeable future, Gen-AI innovators will have a **complicated and ever-changing compliance burden to navigate.**

Concluding Remarks

Despite the challenges and potential pitfalls, don't expect the momentum for Gen-AI to die down anytime soon for tech companies in the UK and beyond. The potential for value creation already being realized pales in comparison to the potential for future value creation.

When weighing technological leaps against each other, Gen-AI may one day be mentioned in the same breath as the wheel, the printing press, and the internet itself.

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