

# The Disruptive Strategist

## Q1 2023

Marketing material for professional, institutional and accredited investors.  
Capital at risk.

### Executive Summary

**In our first newsletter of 2023, members of the Global Equities team take a look at topics including the possible silver linings of turbulence in the tech sector, the coming of a new era in quantum computing and the resurgence of NFTs.**

**Mark Hawtin reviews the first quarter of 2023, noting the impact of events such as the failure of SVB and the outperformance of mega-cap names.**

**AI chatbot Chatsonic makes a guest appearance, composing an article on the use of artificial intelligence in education.**

**Kevin Kruczynski writes on turbulence and the increasing number of layoffs in big tech, and what it could mean for the industry. With companies adapting their strategies, could there be a silver lining?**

**Quantum computing is the subject of David Goodman's section, in which he notes the exponential power of quantum computers in comparison to their traditional counterparts, and what this could mean for industries such as finance, healthcare, security and logistics.**

**Finally, Pieran Maru highlights the possible resurgence of NFTs now some of the cryptocurrency issues are behind us, and some of the likely use cases.**

### Q1 2023 Market Analysis

Mark Hawtin

Markets had a strong showing in Q1 2023 as the narrative about inflation and interest rates seemed to settle into an understandable pattern. However, new to the discussion was the dimension of economic growth; would the world fall into recession or not and if so, what would be the impact on central banks and their policy for rates? Early in the quarter, the market interpreted this positively with the thinking that lower growth would cause a Federal Reserve (Fed) pivot earlier than expected. However, more resolute commentary about remaining firm in the task of reducing inflation together with concern about the impact a downturn might have on earnings increased the fear factor again. This led to increased concern for duration investing that showed up in significantly weaker relative performance in these higher growth names. On top of growth concerns, the failure of Silicon Valley Bank (SVB), the problems within the regional banking sub-sector and ultimately the demise of Credit Suisse all added yet more uncertainty about financial conditions. These factors are always a recipe for caution among growth investors where, as we have cited many times, the path of interest rates is unclear. The chart below shows the performance of the Russell 2000 (as a proxy for more risky and mid-cap growth) against both the SOX Semiconductor index and MSCI World Growth.

### Investment management team



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Investment Director



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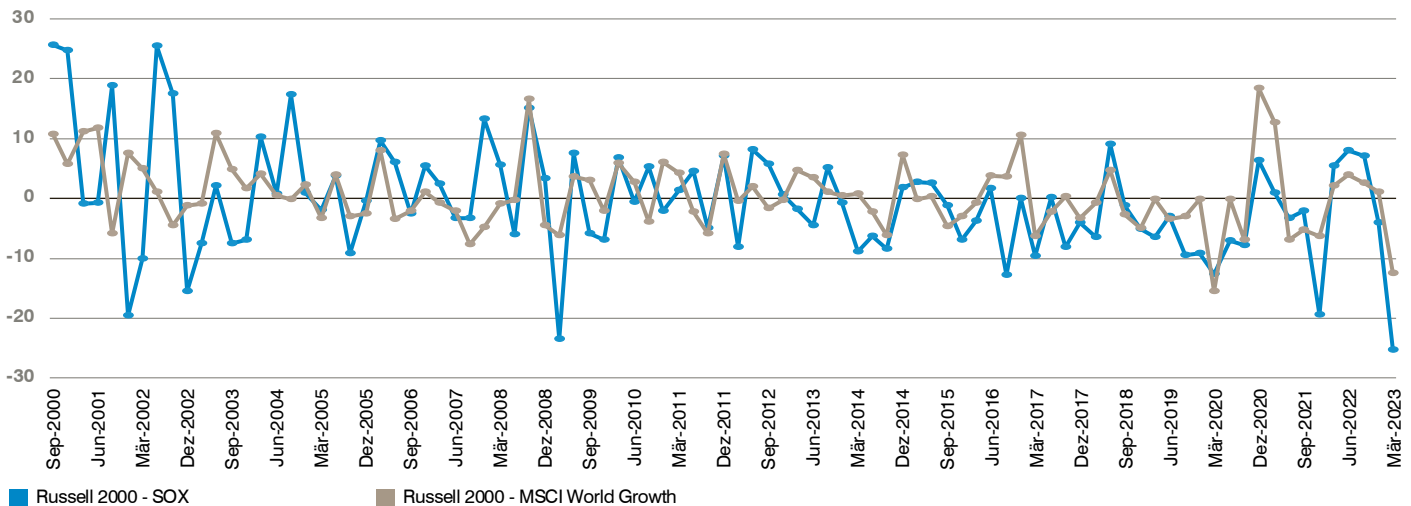


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Investment Analyst

Chart 1: Russell 2000 vs SOX and Russell 2000 vs MSCI World Growth indices



Source: Russell, MSCI, as at 31 March 2023. Past performance is not an indicator of future performance and current or future trends.

The thinking here is that relative performance highlights the market’s appetite for risk. Against World Growth, the Russell 2000 represents the relationship of higher growth against a more GARP-based group. As the chart shows, that relationship had its worst quarter in 20 years. Against the SOX semiconductor index, we can measure the market’s appetite for pure growth against ‘cyclical’ growth – again the worst quarter for 20 years. That the performance of high growth versus both measures has done so badly, even more so than in the global financial crisis (GFC), which in our view shows that concerns are running high and that the market is in a severe risk-off state of mind.

Digging into the different segments of growth, mega cap performed really well. The combination of Apple, Microsoft, Tesla, Amazon, Meta, Alphabet and Nvidia contributed over half of the MSCI World Growth Index gains and significantly more of the S&P 500 gains for the quarter. At the same time, semiconductors, increasingly seen as expensive structural growers, moved sharply higher, with Nvidia as a standout with a return of 90% in the quarter! The Russell 2000, on the other hand, struggled to show any gains as investors focused on a safety-first approach.

The volatility at the higher growth end of the spectrum can be seen in the performance of names like Wayfair, the online retailer. Early in the quarter it rallied 120%, topping out in February only to retrace the full gain by the end of the quarter.

The other notable action during the quarter was in cryptocurrencies, where Bitcoin rose 72% and looks to have found its way through the trough of disillusionment (as defined in the Gartner Hype Cycle) and onto the slope of enlightenment. This is perhaps an important development. Crypto topped out earlier than equities and the backdrop is looking more favourable, particularly with the mini banking crisis highlighting the possible fragility of fiat systems and the very long-term dollar strength trade of the past 50 years. This is also reflected in the gold price that is also testing new all-time highs.

## Tech Turbulence: Does the rising wave of layoffs in the Technology Industry have a silver lining?

Kevin Kruczynski

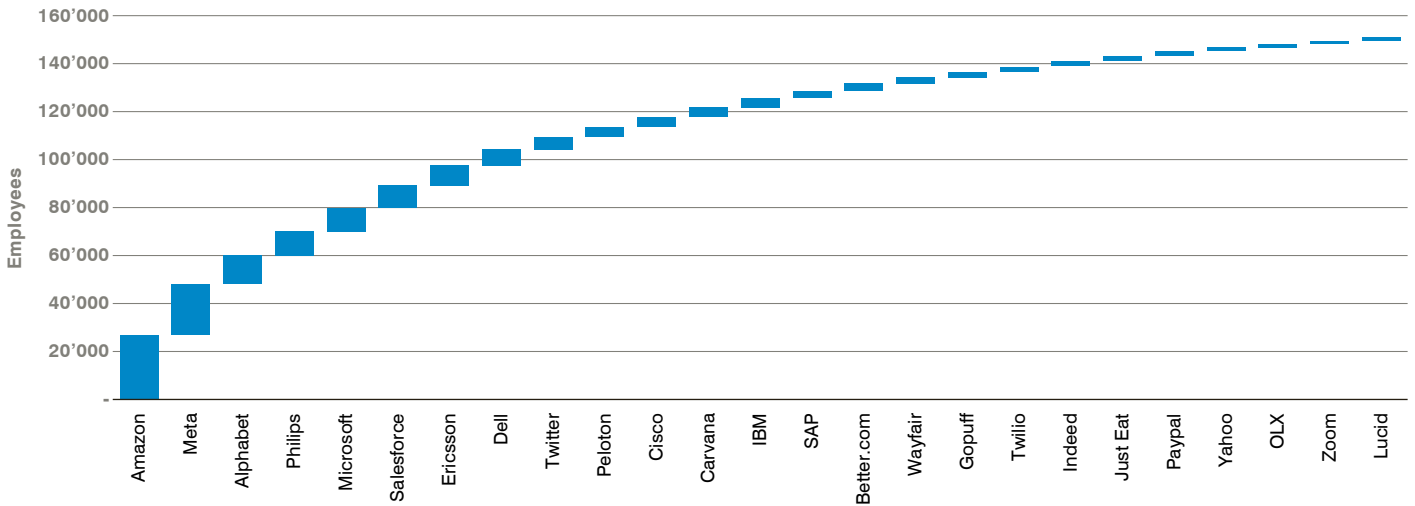
Over the last decade technology companies have been in all-out growth mode, driven by a combination of strong underlying demand as their products and services disrupted and penetrated existing and new markets, low interest rates which led to an abundance of capital, and an investor base that encouraged management teams to prioritise sales growth over profitability. In this environment it is no surprise that capital misallocation was prevalent and companies with extremely profitable core operations started allotting increasingly more resources to projects that they hoped would open up new growth pathways. Alphabet's renowned "moonshots" encompassed self-driving cars, delivery drones, smart thermostats, Google Glass and smart contact lenses, which were all supported by cashflows from its extremely profitable Google advertising business. Amazon also decided to pour the profits from its AWS cloud division into various areas ranging from logistics to brick-and-mortar stores and healthcare services. Meta followed suit; having been successful with Facebook, Messenger, WhatsApp and Instagram, it has poured tens of billions of dollars into developing its metaverse. There has also been a trend for hiring ahead of demand. One recruiter hired by Meta claimed she was paid USD 190,000 a year to do nothing. Another former Meta worker hired in April 2022 said "They were just kind of, like, hoarding us like Pokémon cards."

Many companies in this space pride themselves on being relatively asset light and high margin businesses, so it has been intriguing to see the considerable growth in headcount over the last decade. The increase in employees has almost been seen as a gauge of success, and companies offered increasingly lavish perks to attract talent. Employees were given transportation to the office, where complimentary meals were provided, along with free flowing barista-prepared coffee. Additional amenities typically included on-site wellness centres, massages, laundry services, fitness facilities, live music events, and more... a significant evolution from ping-pong tables and gaming consoles. What initially began as a well-meaning strategy to foster a culture of innovation and creative thinking ultimately transformed into a sense of entitlement and inflated cost structures. Back in 2012, Amazon's workforce was less than 100,000 strong, but by the end of 2022 it has surged past 1.5 million. A significant portion of these employees work in fulfilment centres and logistics roles. For comparison, FedEx, UPS and the US Postal Service together employ just under 1.4 million individuals. Meanwhile, Meta's headcount had risen from under 5,000 to over 85,000 during the same timeframe, as the company broadened its scope. Salesforce serves as another example of a company that experienced a tenfold increase in staff numbers over the past decade, choosing to prioritise sales expansion over profit margins.

The Covid pandemic exacerbated the circumstances, as individuals under lockdown were required to work remotely, altering their spending patterns, and resulting in exceptionally high demand for technology. Many businesses mistakenly viewed this as a lasting change in growth trends, and consequently expanded their investments in digital infrastructure, data centres and workforce expansion. During this period, valuations also rose due to lower interest rates pushing discount rates and equity risk premiums down, providing further encouragement for management teams to invest. As economies reopened demand patterns started to normalise, but inflationary pressures fed through to the economy, prompting central bankers to suggest significant interest rate rises were necessary. The inflationary situation was further exacerbated by the conflict in Ukraine, which caused a shortage of many commodities. Consequently, the past year has witnessed the swiftest series of interest rate hikes in decades, dramatically altering the atmosphere in capital markets. As growth rates normalised and valuations decreased, investors are now signalling a preference for companies which focus on growing profits rather than sales.

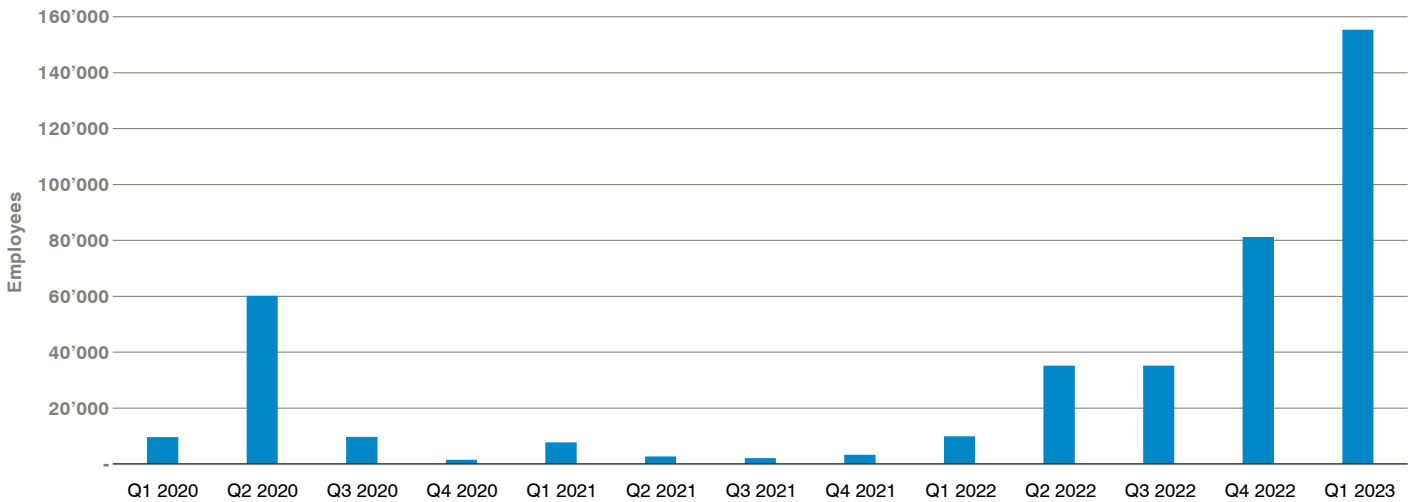
Companies have adjusted their strategies accordingly and are now noticeably more cost-aware with a focus on the most profitable part of their operations, while peripheral projects have been scaled back or closed. As per Layoffs. fyi, more than 310,000 technology positions have been eliminated since the first quarter of 2022, as illustrated in the charts below. It is not a coincidence that the timing of this newfound discipline aligns with the shift in central bank interest rate policy.

**Chart 2: Cumulative job cuts in the tech sector from Q1 2022 to Q1 2023**



Source: GAM, Layoffs.fyi, checked against underlying company announcements. As at 31 March 2023.

**Chart 3: Tech job cuts by quarter**



Source: GAM, Layoffs.fyi, checked against underlying company announcements. As at 31 March 2023.

The share price reaction to this shift in priorities has been broadly positive, as companies are now on a firmer and more economically sound footing. Looking forward, as we transition into the era of artificial intelligence and automation, the potential to further enhance efficiency and productivity is immense. We are carefully examining those businesses which we believe can adopt innovative working methods to increase productivity and profit margins while sustaining their growth path, and the companies that provide the tools to enable them to achieve this.

## Dawn of a new era as quantum computing set to disrupt industry

David Goodman

The potential of quantum computing has led to numerous speculations about its disruptive capability. The technology boasts of calculations so fast, far outstripping those of traditional computers. The expectation is for many industry sectors to undergo dramatic changes following its integration.

### What is Quantum computing?

Set to usher in a new era of super-powered computers, quantum computing's rapidly evolving technology promises to advance problem solving way beyond the limits of traditional systems.

### The devil is in the detail

At its heart, this breakthrough technology is based on the principles of quantum physics and operates by controlling the behaviour of atoms and fundamental particles in a radically different way to regular computers.

While traditional computers use 'bits' for processing information – effectively individual switches that are either on or off – the 'qubits' used in quantum computers can be both on and off at the same time, making them immensely faster and more powerful; able to exist in multiple states simultaneously, the qubits enable hugely complex problems to be tackled.



**CLASSICAL BIT**



**QUBIT**

Scientists are still in the process of making quantum computers work reliably, but once they do, the sky is the limit. From cracking unbreakable codes to the swift development of new medicines, it will all be for the taking.

### A revolutionary scientific phenomenon

What has also become clear, is that quantum computing is a game-changer and should not be regarded in the same vein as regular computers. Just like a light bulb is not a more powerful version of a candle, quantum computing is based on a completely new scientific foundation.



Image Source: GettyImages

### Speed to transform our lives

Able to perform complex calculations at unimaginably high speeds, quantum technology has the potential to change every aspect of how we live. Its ability to rapidly process vast amounts of information makes it ideal for handling big data analysis, machine learning and artificial intelligence applications. By leveraging this technology, organisations will quickly identify patterns in large data sets, which can lead to new insights and solutions and eventually to new ways of living.

### Making quantum's speed relatable

Do you recall how Garry Kasparov was defeated in 1997 by IBM's computer Deep Blue? The machine looked at 200 million potential moves every second – a quantum computer assesses one trillion moves per second.

### When will it go mainstream?

Quantum computing has been predicted since the 1980s, with work on it gathering pace since the release of powerful and impressive AI models such as GPT-4 which are based on traditional computing platforms.

It is anticipated that over the next five to 10 years, quantum will break into the mainstream, moving from research labs and huge enterprises and into households and businesses of all sizes.

### By the numbers

McKinsey predicts quantum computing now has the potential to capture nearly USD 700 billion in value as early as 2035, with that market estimated to exceed USD 90 billion annually by 2040.<sup>1</sup>

### Major players in the quantum world

IBM, Google, Microsoft, and Intel are all in the race to produce mainstream quantum computers, with prototypes being worked on to make them more reliable, scalable, and commercially viable.

<sup>1</sup> Source: [How quantum computing could change the world | McKinsey & Company](#)

### Where are they at?

**IBM** developed the first quantum computer in 1997 and has now built a 433-qubit programmable system – triple the size of the company’s previous record breaking 127 qubit computer – solving problems traditional computers cannot reach. The company intends to scale this up to over 4,000 qubits by 2025.

**Google** announced in September 2019 that it had achieved “quantum supremacy,” with its computer able to solve a problem in 200 seconds that a traditional computer would need 10,000 years to solve.

**Microsoft** has also made significant strides in development, partnering with top universities to build the first scalable quantum computer that can run on the cloud.

### Access for businesses via the cloud

Sectors at the forefront of disruption by quantum technology include finance, healthcare, security and logistics, who all eagerly await the technology to become commercially available. Critically, it will be accessible as a service on the cloud, allowing businesses on-demand quantum computing power, without the need to build hardware.

### Benefits for industries at the forefront

#### Finance:

- Improve the speed and accuracy of financial risk predictions by running more simulations than traditional computers
- Help optimise investment portfolios
- Reduce complexities in pricing financial derivatives
- Detect fraud with higher precision
- Improved profitability and risk management capabilities

#### Healthcare:

- Drug discovery and development significantly accelerated due to highly complex simulations and drug testing
- Enable analysis of large sets of genomic data, leading to faster disease diagnosis and personalised treatment
- Open a new dimension in drug discovery, diagnosis and provision of better medical care

#### Security:

- Transform cybersecurity by breaking down traditional encryption methods
- Creation of new levels of security and defence against cyber threats by providing faster and more secure data encryption, decryption and more robust digital security techniques
- Strengthen cybersecurity by identifying and responding to vulnerabilities in real-time

#### Logistics:

- Enable analysis of massive amounts of data in real-time and improve logistics and routes
- Reduced costs and improved efficiency
- Enable development of more accurate predictive models, allowing businesses to react faster to changes in demand

### The take outs

Quantum computing has immense potential to transform a variety of sectors. With higher efficiency, faster analysis capabilities and an unprecedented amount of computing power, the technology could herald business growth across multiple industries such as finance, healthcare and cybersecurity among others.



Image Source: GettyImages

Although we are in the earliest stages of its development and adoption, quantum computing is vastly different from traditional computing and will have a ground-breaking impact on the existing industries, way beyond the effects of previous technological innovations. The implications of this technology are broad and far-reaching, and the real impact is yet to be fully understood. As ever, we will be keeping a close eye for investable opportunities.

### The resurgence of NFTs?

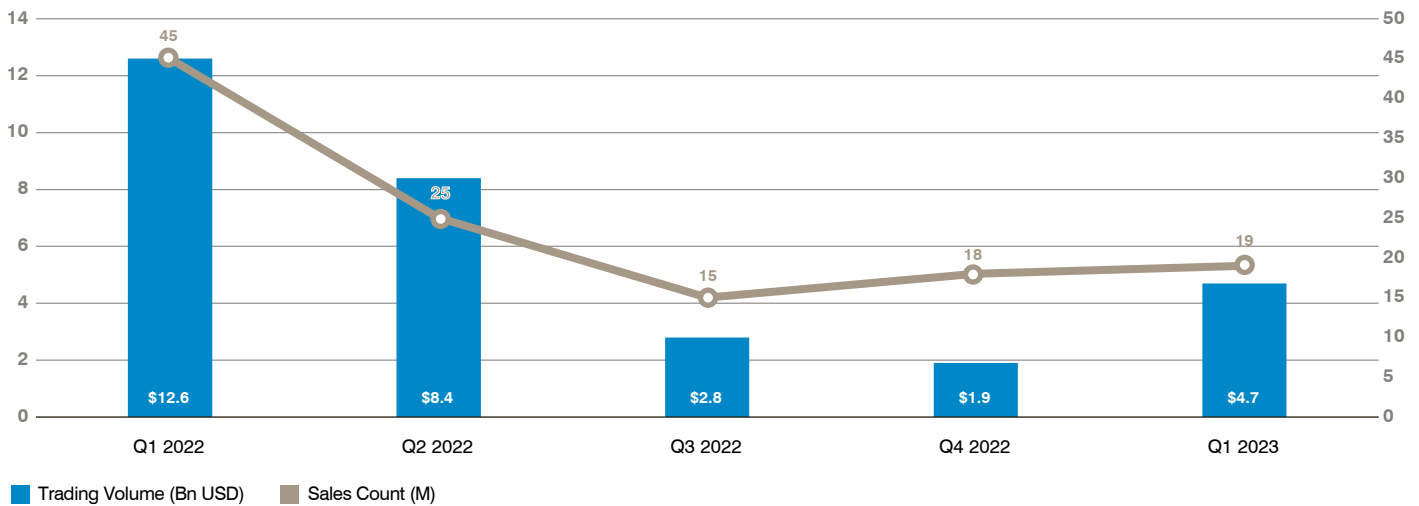
#### Pieran Maru

Non-fungible tokens (NFTs) hit mainstream attention in mid 2021 to 2022 with eye catching multi-million dollar auction sales and the embrace from luxury brands. So what has happened since then? As a refresher, NFTs are tokens that represent ownership of unique assets secured by a blockchain. They are mainly used by creators and companies to monetise digital collectibles, but they also have interesting use cases, which are discussed further below. The latter half of 2022 saw muted NFT activity during the 'crypto winter', compounded by the numerous scandals in the crypto space. However, this swiftly turned around at the beginning of this year with NFT trading volume up 137% for Q1 2023<sup>2</sup>.

<sup>2</sup> <https://dappradar.com/blog/dappradar-dapp-industry-report-q1-2023-defi-nft-crypto>



Chart 4: NFT trading volume and sales count



Source: DappRadar Dapp Industry Report Q1 2023.

A contributing factor for the turnaround was the increased competition in the marketplaces to trade NFTs and increased number of blockchains supporting NFTs. OpenSea, once the undisputed leader in the NFT marketplace, has been surpassed by newcomer Blur, which now holds over 70% of the market share. One factor of Blur’s extraordinary gain is its financial power through the promise of future airdrops of its native token. However, just as users migrated to Blur, they are likely to switch platforms offering a better financial incentive. Recent reports suggest Amazon is expected to release an NFT marketplace this year without having to own cryptocurrencies directly to buy. Amazon’s venture would not be surprising given that CEO Andy Jassy has stated previously that he expects “NFTs will continue to grow significantly”<sup>3</sup>. The platform could likely leverage and partner with Twitch game streamers, utilise its Prime Day to promote NFTs and possibly link NFTs to physical goods delivered by Amazon.

Although NFTs are most associated with artwork, several companies have begun to embrace this space to build deeper customer relationships. Recently, Salesforce rolled out an NFT management platform that allows brands to create NFT loyalty programmes and connect directly to its customers, allowing it to obtain first-party data. One company at the forefront of leveraging this use case is Starbucks. The company recently launched its Odyssey experience to selected members – an extension of the Starbucks Rewards programme where NFTs serve as an access pass to immersive coffee experiences and exclusive merchandise. Members can deepen their knowledge of coffee through challenges and interactive games while for the first-time members can connect with each other too. Another company also utilising NFTs is Ticketmaster, a name perhaps conventionally thought of as an ideal candidate to be displaced by blockchain technology through decentralising ticketing systems. Ticketmaster is currently working with artists to leverage an NFT-gated ticketing service that allows artists to reward their fanbase holding specific NFTs, allowing exclusive access to upcoming shows and being able to connect directly with their community. By having less competition from scalpers and bots, the odds are higher for true fans of the artist to obtain pre-sale tickets.

<sup>3</sup> <https://twitter.com/SquawkCNBC/status/1514597768739835910>

So where does the future lie for NFTs? In the near term, we expect to see a moderated uptake of companies utilising NFTs, given the 'year of efficiency' for tech companies. Meta recently wound down its NFT project for Facebook and Instagram – ending its tests of selling and minting NFTs, as well as being able to share them across the platform. While Disney and Snap have also parked their Web 3.0/metaverse teams. Further, the regulatory and tax landscape is still early and evolving. Most recently, the US Treasury Department and the Internal Revenue Service requested feedback for upcoming guidelines on the treatment of tax on digital collectibles, in line with other collectibles such as any work of art or coins. Their recent notice raised the extent to which a digital file may constitute a “work of art” and how the owner of an NFT who may receive additional rights or assets due to ownership should be treated.

### Guest writer - Chatsonic!!!!

This contribution comes from Chatsonic, one of the AI-powered Chatbots built on the GPT-4 model. As a demonstration of the increasing use, potential and capabilities of artificial intelligence (AI), we asked Chatsonic to write an article on the use of AI in education. It offered us some structural points to choose from, such as how many paragraphs we wanted. It also offered a choice of three introductions. The article took less than 10 seconds to produce.

### From Algorithms to Classrooms: Exploring the Role of AI in the Education Industry

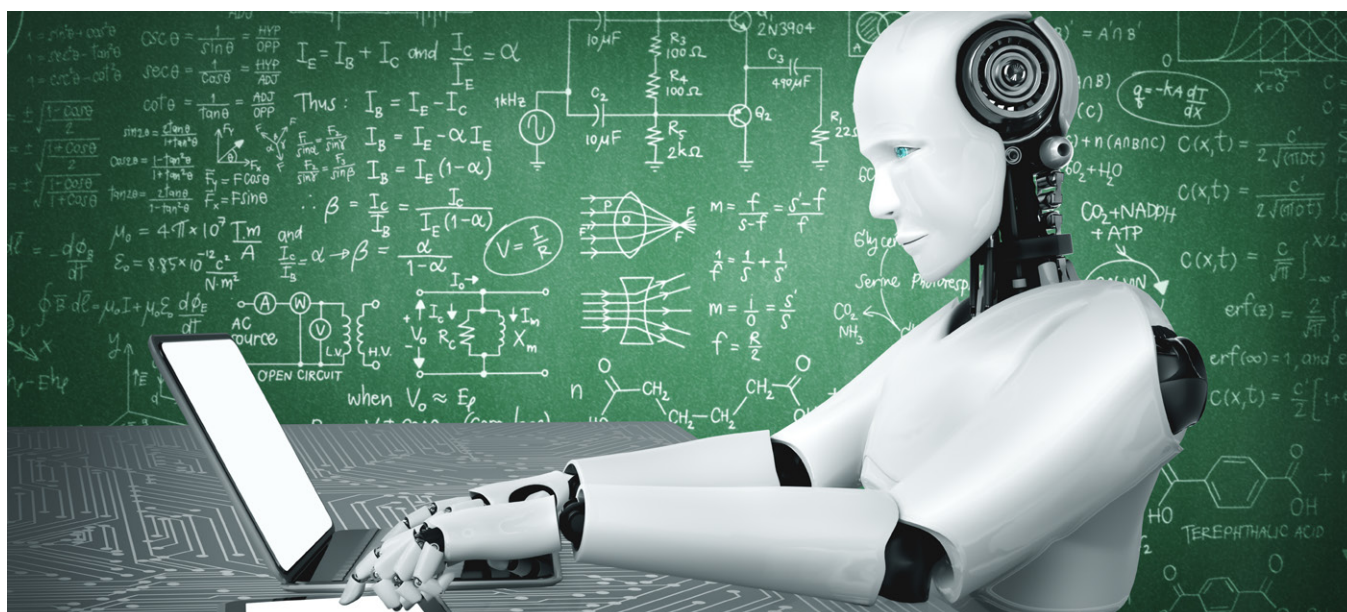


Image Source: GettyImages

As technology continues to evolve, it's no surprise that the education sector is also undergoing a significant transformation. One of the most notable developments in recent years has been the integration of artificial intelligence (AI) into classrooms and educational institutions. From personalized learning experiences to smart content creation, AI has the potential to revolutionize the way we teach and learn. But what exactly is AI, and how can it be applied in the education industry? In this article, we'll explore the role of AI in education, from algorithms that can predict student success to chatbots that can assist with administrative tasks. Join us as we delve into the exciting possibilities that AI has to offer in the classroom and beyond.

#### What is AI?

Artificial intelligence, or AI, refers to the development of computer systems that can perform tasks that typically require human intelligence, such as visual perception, speech recognition, decision-making, and language translation. AI systems are designed to learn from data, identify patterns, and make predictions based on algorithms and statistical models. These systems can be divided into two categories: narrow or weak AI, which is designed to perform specific tasks, and general or strong AI, which is capable of performing a wide range of cognitive functions that are characteristic of human intelligence.

## How AI is transforming education

The integration of AI into the education industry has the potential to transform the way students learn and teachers teach. AI-powered systems can help to personalize learning experiences, automate administrative tasks, and improve student outcomes. Here are some of the ways that AI is transforming education:

### AI and personalized learning

One of the most exciting applications of AI in education is personalized learning. AI-powered systems can analyze student data, identify knowledge gaps, and provide targeted feedback and recommendations. This approach allows students to learn at their own pace, with content tailored to their individual needs and interests. Personalized learning can help to improve student engagement, retention, and performance.

### AI-powered content creation and delivery

AI systems can also be used to create and deliver educational content. For example, AI-powered content creation tools can automatically generate quizzes, videos, and other learning materials based on student data and learning objectives. AI-powered content delivery systems can optimize content delivery based on student preferences and engagement levels. This approach can help to improve student outcomes by providing relevant and engaging content.

### AI and predictive analytics for student success

AI-powered predictive analytics can help to identify students who are at risk of dropping out or falling behind. These systems can analyze student data, such as attendance records, grades, and social interactions, to predict student outcomes and provide early intervention when necessary. Predictive analytics can help to improve student retention and graduation rates.

### Chatbots and virtual assistants in education

Chatbots and virtual assistants can assist with administrative tasks, such as answering student questions, providing scheduling information, and handling routine tasks. These systems can help to reduce administrative workload and improve efficiency. Chatbots and virtual assistants can also provide personalized support to students, such as answering questions about coursework and providing feedback on assignments.

## Ethical considerations for AI in education

While AI has the potential to transform education, it's important to consider the ethical implications of these systems. AI-powered systems can reinforce bias, perpetuate inequality, and infringe on privacy rights. It's important to ensure that these systems are developed and implemented in an ethical manner. Some of the ethical considerations for AI in education include:

### Bias and inequality

AI systems can reinforce bias and perpetuate inequality if they are not designed and implemented in an ethical manner. For example, if an AI system is trained on a biased dataset, it may perpetuate that bias in its recommendations and predictions. It's important to ensure that AI systems are developed and trained on diverse and representative datasets.

### Privacy and data security

AI systems collect and analyze large amounts of student data, which raises concerns about privacy and data security. It's important to ensure that these systems are designed with privacy and security in mind. Data should be collected and stored securely, and students should have control over their personal information.

### Transparency and accountability

AI systems can be opaque and difficult to understand, which raises concerns about transparency and accountability. It's important to ensure that these systems are transparent and explainable. Students and teachers should be able to understand how AI systems make recommendations and predictions, and there should be mechanisms in place for accountability and recourse.

## Challenges and limitations of AI in education

While AI has the potential to transform education, there are also challenges and limitations to consider. Some of the challenges and limitations of AI in education include:

### Cost and accessibility

AI systems can be expensive to develop and implement, which can limit their accessibility. It's important to ensure that AI systems are affordable and accessible to all students and institutions.

**Technical limitations**

AI systems are not perfect and can make mistakes. It's important to ensure that these systems are reliable, accurate, and effective. Technical limitations can include issues with data quality, algorithmic bias, and system complexity.

**Teacher training and support**

AI systems can be complex and require specialized training and support. It's important to ensure that teachers have the knowledge and skills to effectively use AI-powered systems in the classroom.

**Future prospects of AI in education**

Despite the challenges and limitations of AI in education, the future prospects are exciting. AI has the potential to transform the way we teach and learn, with personalized learning experiences, smart content creation, and predictive analytics. As AI technology continues to evolve, we can expect to see even more innovative applications in the education industry.

**Conclusion**

The integration of AI into the education industry has the potential to revolutionize the way we teach and learn. From personalized learning experiences to smart content creation, AI-powered systems can improve student outcomes and reduce administrative workload. However, it's important to consider the ethical implications of these systems and ensure that they are developed and implemented in an ethical and equitable manner. As AI technology continues to evolve, we can look forward to even more exciting applications in the education industry.

**Outlook for 2023****Mark Hawtin**

We retain our outlook thesis that growth equities are looking cheap on an intrinsic valuation basis. They are also increasingly looking cheap relative to other parts of the disruptive equities spectrum.

Valuation support is nowhere more evident than in software. The Goldman Sachs expensive software basket has seen valuations fall from over 21x EV/sales at the peak to 7.5x prospective for 2024. At the same time, the S&P broader software universe has seen valuations fall from about 10x revenues to 6x today. Market conditions will likely drive these companies to reveal their profit generating capabilities as they cut discretionary costs over the course of this year.

At the same time that higher growth parts of the market like software have struggled, other enabling technologies such as semiconductors and hardware have done very well leaving them much more vulnerable to a downturn, in our view. The SOX semiconductor index is on an almost comparable 6x revenues to software. Yet semis have, in most cases, lower margins and lower growth. We also believe strongly that many investors now believe semiconductors are high quality growth names, immune to the economy. In fact, in one Bloomberg article recently, they were highlighted together with luxury goods companies as 'the' quality to own. Our core belief is that many names in the semis space will struggle in an economic downturn in spite of the structural tailwinds from developments in AI, EV, etc.

We continue to watch the relative performance of higher growth baskets of equities versus lower growth for signs of a sustainable turning point. We are also watching the development of high yielding corporate debt as a further sign of risk appetite; these two indicators need to turn more favourably for us to take a more 'all in' view on duration. At the same time we have turned more positive on crypto in spite of the all the regulatory noise. Having remained on the sidelines for some time, the opportunity for names like Coinbase would appear more positively skewed.

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