

RESEARCH INSIGHTS



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Technology Outlook: Here to stay, or another bubble?

Equities are at an all-time high despite a pandemic year; It's feeling like 2000 all over again where many believe that we are currently in an environment of dichotomy between the economy and market. Should investors be wary of yet another asset bubble? Or is this the norm moving forward? This article seeks to uncover an overview of the technology industry – what the key trends are and challenges the tech industry might face.

With the rise of digitalization alongside the exacerbated WFH effect caused by the pandemic, the dominance of tech is only booming. With Nasdaq being the tech-heavy index, the graph illustrates the rise in stock prices of tech companies. Moreover, it has generated higher returns in comparison with the S&P500 index to date. The dip in March was only temporary, before stocks went on a rally – indicating room for more gains.



Source: Bloomberg Markets

Key trends

While it is undeniable that the world of today is pushed forward by the waves of technology, notable areas of interest over the past few years such as Artificial Intelligence (AI), Robotics, Virtual Reality (VR), semi-conductor and Electric vehicles(EV) have been gaining traction.

The table below shows the expected compound annual growth rate (CAGR) for each technology trends over the next 5 years from 2020 – 2025.

Key Trend	Expected CAGR (%)
Artificial Intelligence (AI)	33.10
Robotics	25.38
Electric Vehicles (EV)	22.00
Virtual Reality (VR)	21.60
Semi-Conductor	11.10

Table of expected CAGR over 5 years

Semi-conductor

Tech companies are poised to benefit from the 5G technology as market demand rise for newer and smaller transistor chips that are 5G-compatible.

With the possible new norm of remote working and learning, demands for PCs components is expected to continue rising. Certainly, graphics card from AMD and Nvidia has been unable to meet the high demand recently. Another reason was said that bitcoin miners have scooped up the products for better and faster performance.

Besides the commonly-known computers and phones, semiconductors are also used in cars, contactless solutions such as touch screens and elevator buttons ambient assisted-living devices, sensors, digital work processes and IoT in sectors like healthcare, government, and defense.

Electric Vehicles

With the world becoming more environmentally-conscious, electric vehicles would be the future of the automotive industry. Many countries have already taken steps to show they are moving toward this trajectory.

Take America for instance. With Joe Biden campaigning for a carbon-free America, U.S. could spend as much as \$1.7 trillion on clean energy initiatives over the next 10 years. This has sparked more companies to venture into this space, even Apple, to capitalize on this.

Meanwhile, China is expected to be the world’s largest market for EVs powered by fuel cells and aims to build 1m such vehicles by 2035. China has announced extended state subsidies and tax breaks for consumers purchasing new electric vehicles. Shanghai-based EV company Nio has delivered over 17,000 units, a 110% y-o-y rise since 2019. Furthermore, they now have plans to make mass market products under another marque. Additionally, Hyundai is set to build its China factory come February, as it seeks to strengthen its foothold in the space.

Likewise, UK’s 2030 petrol and diesel car sales ban has EV charging groups racing to meet its deadline. Prime minister Boris Johnson announced that £1.3bn would be made available to accelerate the rollout of charging infrastructure in England.

Software

Globally, as most people stay home or start to work remotely, demand for online services will rise. Software accounts for 80% of all AI revenues. Video games, machine-learning, e-commerce and cloud-computing technologies are one of the many trends that would remain relevant in the upcoming years.

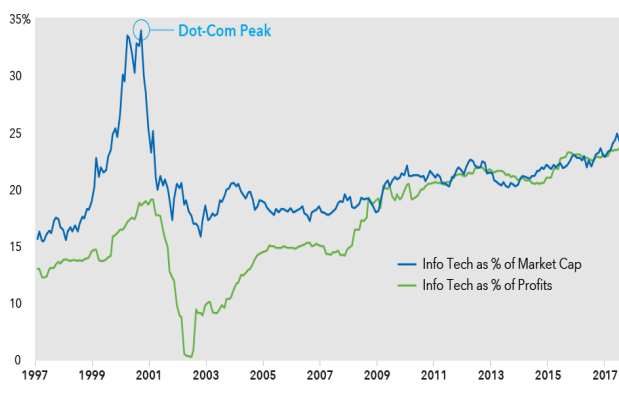
Data centers stands to benefit as demand for cloud-computing accelerates; as will the gaming sector as more people stay home. Fintech is deemed to have growing demand as well, as evident from investors scrambling for bitcoins, and banks venturing into digital banking.

Risks

Despite the inherent growing industry, technology faced its share of challenges and the risks it may come with. Potential risks include both micro and macro risks.

Asset Bubble

With high equity valuations and growing inflation, it is unpredictable if this would echo a replay of the dotcom era which occurred two decades ago. This is further exacerbated by low-yields since the global financial crisis in 2008, as well as the fear of missing out on capital gains given the stellar performance of the tech industry over the course of these few years, especially during the period of the covid19 pandemic.



Cybersecurity

Privacy has been the latest and growing concern especially under Big Tech. With most data stored on supposedly airtight software, these organisations are susceptible to being hacked.

Last month in December 2020, US Department of Justice alleged that a former China-based executive of Zoom, was spying and disrupting certain zoom users on behalf of the Chinese police and state security agents.

Another prominent incident of a massive cyber hack not long ago was regarding software-company SolarWinds. US Agencies have accused Russian hackers. Investigations have shown that the attack was done with high degrees of expertise that went unnoticed for long periods of time. According to sources, 18,000 of its clients which includes federal agencies and almost all Fortune 500 companies like Microsoft, has had their data compromised including propriety information.

Given the ever-growing reliance on technology, cyber issues present serious risk to both countries and individuals. It is therefore expected that a huge part of budget would be set aside in the years to come, to prevent cybercrimes. The advantage though, is that job creation would result from the higher demand for more talented people in the field.

Monopolies

With the further expansion of the technology industry, so will the capabilities of big tech companies. Their increasing dominance implies the potential for a market monopoly. In order to curb such monopolistic practices behaviors in the industry, many countries have created their own antitrust watchdog.

Beijing for example have recently laid out regulations to curtail the growing dominance and potential systemic risk that corporations might potentially post to the system, such as Alibaba Group Holding and Tencent Holdings. The Chinese government in December 2020 derailed what would have been the world's largest IPO offering of Ant's S\$49.8 billion IPO just 2 days before the launch, citing a lack of liquidity and asset qualities on its balance sheets.

Similarly, in recent months, US and EU has slapped lawsuits on big tech companies such as Google and Amazon, over concerns that the company crossed antitrust laws by maintaining monopoly power and cutting off competition.

Trade wars

While technology has provided efficiencies in all aspects of our lives, it has also got onto the radar of countries political agendas. Over recent months, the Trump administration announced the expansion of the "Clean Network" initiative aimed to tackle technology and financial sanctions on China's companies. Firms like Tencent, Alibaba and Huawei were denied access to key technologies. In January 2021, NYSE delisted China's three largest telecommunications companies over ties with the Chinese military.

Additionally, US tech companies have been largely banned from doing business in China for years due to its "Great Firewall" of internet censorship. This prevented Facebook, Google, and Dropbox from reaching China's over 800 million internet users. Apple also had to remove apps from its App Store that were potentially offensive to China; HKMap Live, used by protesters in Hong Kong to track police activity, was removed after Apple said it was being used to "target and ambush police."

However, despite the ban, China still generates much revenue for US companies. An estimated \$5 billion in ad revenue came from Chinese-based companies in 2018 for Facebook.

Writer's Opinions

Amidst the unprecedented times we are facing, there is reason to believe that technology will lead the next economic cycle. This would only further intensify given the dependence of technology in our lives.

Even so, there could still be disruptions along the march of technology. Given that technology is a growth-sector, smaller companies potentially could lose out to larger companies due to the lack of latest technology or capital to compete.

With that being said, it is not all doom and gloom for smaller companies as there has been a heightened scrutiny of monopolies in recent times. With stricter regulations intended to enforce a competitive marketplace, it aims to encourage innovation and creation of revolutionary products and services.

Ideally, the current changes in the political atmosphere could provide greater political stability and less volatility in the business environment. Such outcomes would restore confidence to businesses and investors alike, globally. Whether we like it or not, technology is here to stay. The future is here.

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