

Embracing Disruption

Digital Darwinism: the new disruption

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Disruption has always been around us, but we are moving to a new “survival of the fittest” digital era. We’ve identified key themes – from climate tech to AI – that are driving this new shift in a profound way, making disruption a critical factor for investors to build into their portfolios.

It is time to rethink what you thought you knew about disruption. It was once primarily associated with the technology sector – particularly the new platforms that were shaking up traditional means of ride-hailing, rentals, food delivery and more. But now, transformative advances in hardware and software – and the sheer proliferation of data – are pushing disruptive forces into more sectors and areas of our lives than ever before – and at an exponential rate.

This is leading to a kind of “digital Darwinism” – a global phenomenon that will sweep some businesses aside, allow others to secure a dominant market share and potentially even affect the world’s geopolitical order. Like the evolutionary process after which it’s named, digital Darwinism is a shift at the cellular level, and it’s changing the world we live in. But there’s good news for investors. Not only can you invest in and benefit from growth and profit opportunities – you can also contribute to positive real-world outcomes.

Three key investment themes for the new disruption

1. Climate and technology

In May 2021, US climate change envoy John Kerry claimed that half of the reductions necessary to achieve net-zero emissions “are going to come from technologies we don’t yet

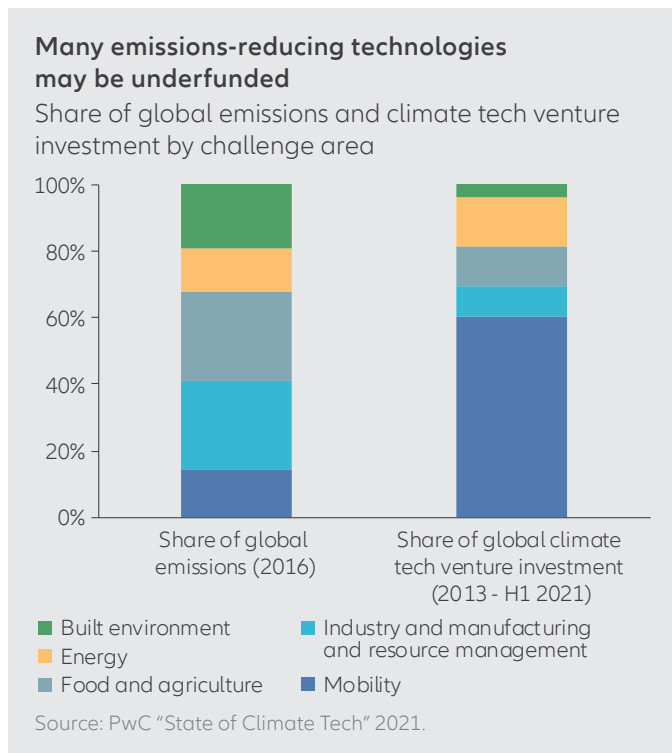
have”. “Climate tech” advancements – from artificial intelligence (AI) powered marketplaces for carbon offsets to improved power transmission infrastructure – can help reduce the impact of global warming.

According to PwC, in the year leading up to June 2021, USD 87.5 billion was invested in companies combating the climate crisis, compared with USD 24.8 billion the year before.¹ And since 2013, more than 60% of all venture capital funding has poured into technologies related to mobility and transport – an area that includes electric vehicles. (See chart.) There also seems to be a disconnect between the amount of greenhouse gas (GHG) emissions that certain sectors produce compared with the funding

By the numbers: investment to fight the climate crisis



1. Source: PwC “State of Climate Tech 2021” report, December 2021.



they receive. For example, only 9% of funding went to manufacturing during the same period, even though it contributed 29% of GHG emissions. This could give investors a prime opportunity to fund new climate-focused technologies.

2. Data and connectivity

With so much of the world's population connected digitally, disruptive innovations can sweep across the globe at a breakneck pace. Consider that more than 60% of the world's population is connected to the internet² – compared with approximately zero percent in the early 1980s. All this connectivity is generating 2.5 quintillion bytes of data a day.³ What's more, the internet of things (IoT)⁴ grew by 9% in 2021, reaching 12.3 billion connections.⁵ And "6G" technology (where China is currently leading the way) could be 100 times more powerful than 5G. This could move far beyond "smart homes" to "smart cities",

which could help address significant economic, social and environmental challenges.

So what is all this infrastructure – and the data it transmits – leading to? The next phase of the internet – which some call the "metaverse" – could bring the virtual and online worlds closer together. How many students would not prefer to "walk" into an old Roman village rather than simply read about it, and who wouldn't want to "tour" a remodeled kitchen before work starts? The metaverse could lead to new revenue streams for well-positioned companies, especially those connected to fields such as shopping, education, entertainment and electronic payment systems.

3. Man and machine

Throughout history, there have been great evolutionary leaps that have propelled life forward – the original "biological disruption". We may be approaching a similar moment today. Some estimate that by 2045, machine learning and AI could usher in the "singularity" – the moment when machines will be smarter than humans.⁷ But even if that moment never comes, new technologies are having a profound impact on the quality and length of life.

Consider how science seems to be following its own "Moore's law", with new technologies being implemented at an increasingly rapid rate while the cost steadily declines. The fast-growing field of genomics⁸ offers the prospect of earlier identification and treatment of genetic illnesses, and has led to the speedy introduction of new solutions to the Covid-19 crisis. And in the field of nanotechnology,⁹ scientists have developed an injectable "liquid retinal prosthesis" that may someday be able to help blind people see again.¹⁰

By the numbers: data generated globally per day

2.5
quintillion bytes

2,500,000
terabytes

1 terabyte = 75 million pages of printed text⁶

2. Source: DataReportal: "Digital around the world – global digital insights", October 2021.

3. Source: SeedScientific.com: "How much data is created every day?", 2018.

4. IoT: the hyperconnected world in which physical objects are embedded with sensors and can be connected and controlled.

5. Source: FirstPoint: "Top 4 challenges in IoT data collection and management", October 2021.

6. Source: CloudNine.com: "Perspective on the amount of data contained in 1 gigabyte".

7. Source: Futurism.com "Kurzweil claims that the singularity will happen by 2045", February 2017.

8. Genomics: the mapping and potential editing of genomes, an organism's complete set of genetic instructions.

9. Nanotech: the manipulation of matter at a molecular scale – one nanometre is one millionth of a millimetre.

10. Source: DigitalTrends: "Nanotech injection successfully restores vision in blind rats", July 2020.

Prepare for “digital Darwinism”

Just as Charles Darwin and other naturalists expounded a theory of evolution founded on the “survival of the fittest”, we are seeing a competitive landscape reshaped by the ability of individual businesses to adapt and thrive. But the “winner takes all” implications of this race to technology supremacy – and the influence that comes with it – has wider resonance. Arguably it is at the heart of geopolitical tensions, for example between the US and China, perhaps even more so than questions around trade. Control of data gives control of power. And with an imperative to protect digitised businesses, robust cybersecurity is a must. The cost of global cybercrime could reach USD 10.5 trillion in 2025, up from USD 3 trillion in 2015.¹¹ This represents a fast-growing industry in itself: global spending on cybersecurity is estimated to exceed USD 1.75 trillion from 2021-2025.¹²

Two takeaways for investors

1. Rethink how portfolios are constructed

In this low-yield environment, where growth and income potential are at a premium, it’s important to take a different approach to portfolio construction – one that may be able to capitalise on disruptive opportunities. Perhaps in addition to core diversified funds, investors should consider these areas:

- **Thematic investing** can help investors capitalise on opportunities emerging from this wave of disruption. Thematic funds – such as those focused on “healthy living” or “smart cities” – can provide a window into future opportunities, a new prism alongside traditional ways of classifying investments by sector or geography.
- **Sustainability** in all its guises is an essential consideration for investors today – particularly the need to combat climate change, which is one of the dangerously disruptive forces in the world. Fortunately, investors can align their portfolios with investments that can help effect real-world change. “Green” and “blue” bonds can help finance projects specifically associated with climate change and ocean conservation. But sustainability has also moved beyond climate, and now impacts every area of our lives. Investments aligned with the UN’s Sustainable Development Goals can help align countries, organisations, companies and individuals from around the world to help protect the planet, end poverty and improve life for communities

How a grain of rice can illustrate exponential growth

Recall the Indian folk story of the origins of the game of chess. Thrilled with this new game, the king asked its inventor what he would like in return. The inventor asked for one grain of rice for the first square of the chessboard, two for the second, four for the third and so on – the amount doubling with each square. The king agreed to this apparently modest request, but by the 64th square, he owed 18 quintillion grains of rice – enough to cover India in a layer one metre deep.



globally. Disruption and sustainability go hand-in-hand from an investment perspective. When seeking to identify the winners of this era of disruption, it is more critical than ever to use sustainability factors to assess the true roots of resilience, success and longevity for the companies we invest in.

2. Tap the power of disruptive tech in the investment process

To take full advantage of the “new” disruption, investors should incorporate new, possibly disruptive technologies into their investment process.

Consider all the factors that go into creating long-term investment solutions – whether growth or value, fundamental or quantitative. Portfolio managers must assess business models and valuations, analyse sustainability factors, and evaluate management teams, corporate governance and organisational culture. The ability to harness the explosion of available data on companies and trends – from multiple sources around the world in real time – is critical. So is the ability to analyse it expertly – and focus on what is relevant.

At Allianz Global Investors, we are constantly developing tools to support our portfolio managers in their search for alpha – including financial and “outcome-linked” alpha – while staying agile in the face of changing market conditions. Within our investment processes, we are using data in greater volumes than ever before. We are deploying AI and natural language processing (NLP) in multiple languages to put the latest insight at our fingertips.

Disruption may be intrinsically unsettling. But we are convinced that it is something to be embraced because of the opportunities it presents and the sheer, urgent necessity of turning its repercussions to your advantage.

11. Source: Cybersecurity Ventures: “Cybercrime to cost the world \$10.5 trillion annually by 2025”, November 2020.

12. Source: EINNews.com: “Global cybersecurity spending to exceed \$1.75 trillion from 2021-2025”, September 2021.

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