

NAVIGATING THE DISRUPTIVE ECONOMY

AS DIGITALIZATION INTENSIFIES AND CONSUMER SENTIMENT AND PUBLIC POLICY SHIFT, INVESTORS WILL NEED TO DISTINGUISH BETWEEN COMPANIES THAT CAN ADAPT TO A DISRUPTIVE ECONOMY AND THOSE THAT CANNOT.

Investment Insights Series

The disruption taking place in the global economy is momentous. It is occurring in every industry and region, at every stage of the supply chain, and is reshaping the way we work, live and consume. Whatever you want to call it – the digital revolution or the digital transformation – it is all-pervasive and, in many ways, just getting started.

Driving this change are rapid advances in new technologies: the Internet of Things (IoT), artificial intelligence (AI), machine learning, cloud computing, virtual and augmented reality, and 5G wireless. A decade ago, these high-performing digital systems were largely conceptual. Now, they increasingly dictate how businesses operate and create value, a reality accelerated by the COVID-19 pandemic, growing climate change concerns and geopolitics.

Amid this disruptive economy, companies must adapt, or risk being left behind. Investors face an even bigger challenge: ascertaining which technological shifts will be broadly adopted, as well as which companies can maximize current and future computing power to innovate, improve cost efficiencies, grow revenues and enter new markets. Successfully doing so could make all the difference to investment portfolios over the next decade.

Key Takeaways

- Rapid digital advances, along with the COVID-19 pandemic, geopolitics and a heightened focus on sustainability, are converging to create extreme disruption in the global economy.
- Amid this change, companies that leverage advance computing power to collect and analyze data and innovate new products and services – in short, disrupt themselves – could be better equipped to outperform.
- Even then, investors will need to be disciplined, taking a long-term perspective to the innovation cycle, staying focused on fundamentals, and assessing new risks as public policy, consumer sentiment and technology continue to evolve.

Innovation Drives Earnings Growth

The global economy is on track to rebound in 2021 from its pandemic-caused contraction, but starting in 2023, annual growth could slow to less than 1.8% in advanced economies and under 4.8% in emerging markets.¹ To deliver faster earnings growth, companies will need to innovate new products or services, take market share, improve productivity and/or find cost savings.

Much of this will likely be achieved through technology. A report by Boston Consulting Group (BCG) found that from 2017 through 2020, firms that had “engrained human and technology capabilities into core processes” – so-called bionic companies – increased earnings before interest, taxes, depreciation and amortization (EBITDA) 1.7 times faster than enterprises that were still building digital proficiencies. Bionic firms also saw their market capitalization expand at a faster rate during the pandemic, rising 27% from February 2020 through January 2021, whereas companies just beginning to explore digital initiatives appreciated a mere 3%.²

Exhibit 1: Digitalization Boosts Performance

Bionic companies have been growing at a faster rate than digitally proficient firms in some key measures:

February 2017 – December 2020

2.2x **1.7x**
Enterprise Value EBITDA

Source: “The Moment of Truth in Every Digital Journey,” Boston Consulting Group, April 2021.

Note: Data based on 2,296 companies across 28 countries. EBITDA measures a firm's net income after interest, taxes, depreciation and amortization are added back. Enterprise value is the sum of a company's market capitalization and short- and long-term debts, less cash, and is considered a measure of a firm's value.

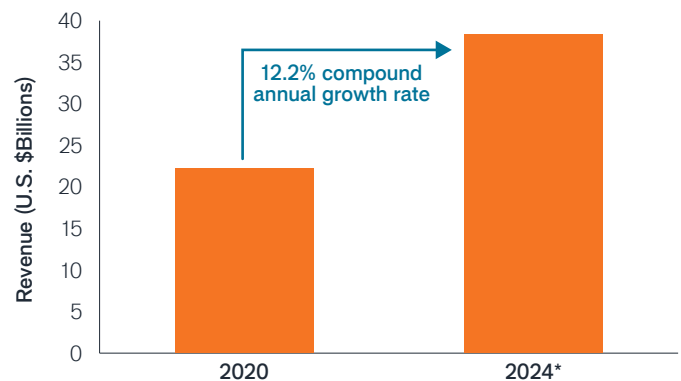


“Companies that leverage technology to reevaluate processes, collect and analyze data, and innovate new services or products will likely be better equipped to thrive amid the digital transformation.”

This performance differential could widen in the wake of COVID-19. The shift from on-premises software to the cloud and from analog products to sensor-equipped devices has been occurring for more than a decade; the pandemic fast-tracked demand for these and other technologies out of necessity. And while not all habits formed during COVID will persist, those that improve productivity, ease daily life or offer other benefits are likely here to stay. Warehouses, for example, have increasingly started to rely on robots and other automated technology to meet the surge in e-commerce demand. Going forward, these tools should allow producers to more easily accommodate fluctuating order volumes (as well as potential labor shortages), reducing costs and improving productivity.³

Exhibit 2: Rise of the Robots

The global industrial robotics market is projected to grow at a double-digit rate over the coming years.



Source: Frost & Sullivan, as of 21 April 2021.

Note: *Estimated.

Digital solutions that facilitate business as usual are only the beginning. Companies that leverage technology to reevaluate processes, collect and analyze data, and innovate new services or products will likely be better equipped to thrive amid the digital transformation. The bionic firms in the BCG study did just that: they invested in data and technology capabilities, built a culture that focused on end products and, increasingly, leveraged AI to innovate. As evidenced by bionic firms' outperformance, the willingness of companies to enhance their workforce with digital capabilities, use data to identify new revenue streams and create seamless digital interactions with customers – in other words, disrupt themselves – can be critical to future growth.

Disruption Is Likely to Accelerate

While the pandemic helped turbocharge the shift to digital, a number of powerful secular trends are also gaining momentum as they converge with new technologies, compounding disruption.



MEDICAL ADVANCES

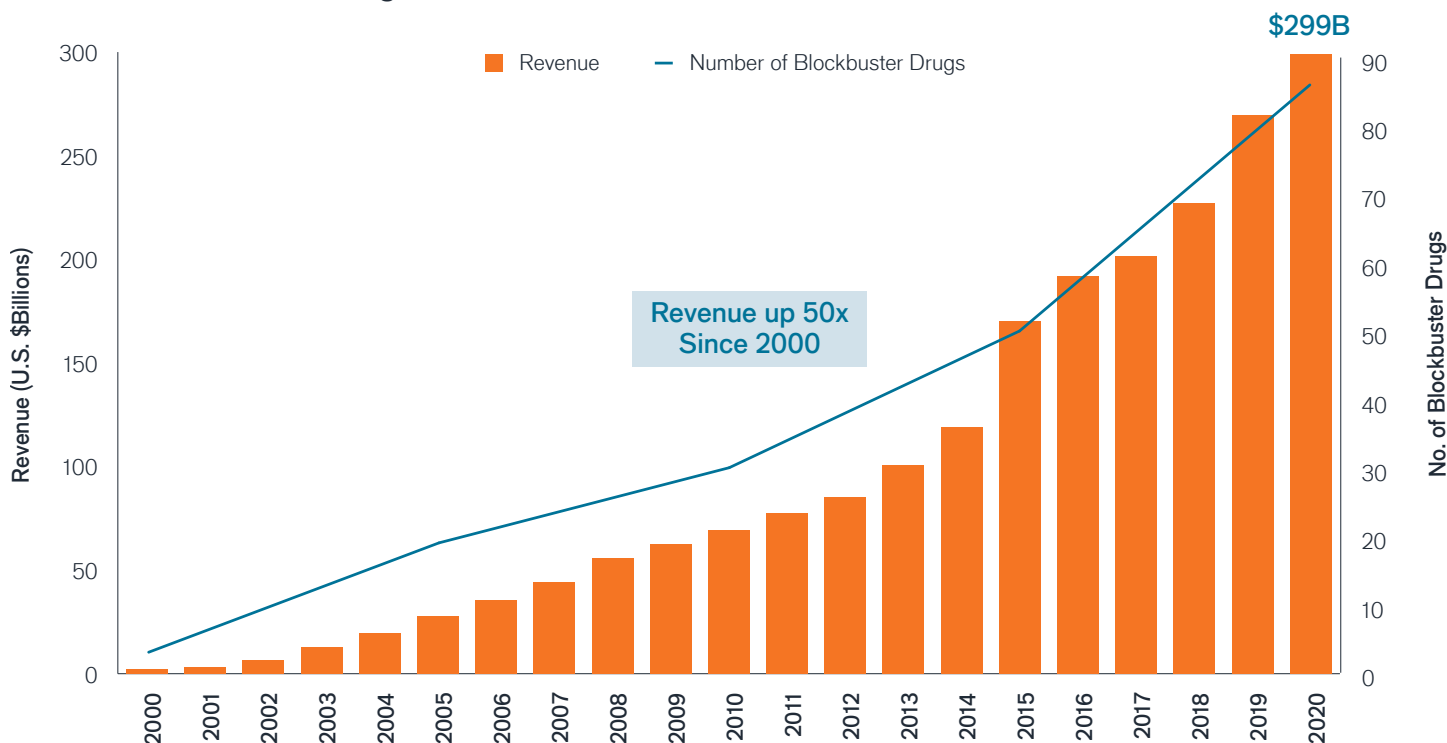
By now, most of us have heard of the revolutionary mRNA vaccines for COVID-19, which were developed in record time and are highly effective at preventing severe cases of the disease. But mRNA technology is just one of thousands of novel therapies being researched today that have the potential to revolutionize the standard of care for people globally. These medicines – many of them new mechanisms of action such as gene and cell therapies, precision oncology and monoclonal antibodies – are being developed to address large, often devastating areas of cancer, autoimmune disease and genetic disease, some of which have no available treatments. The progress has been so swift that during the five years through 2020, the U.S. Food and Drug Administration

approved 228 novel therapies, an increase of more than 100% from 10 years earlier.⁴ Sales of blockbuster drugs have also soared from U.S. \$6 billion in 2000 to roughly U.S. \$300 billion in 2020 (see Exhibit 3).

Drug discovery could quicken from here. A decade ago, sequencing the human genome cost U.S. \$10,000 and took roughly two weeks; today, it can be done in under a day for less than a thousand dollars.⁵ As a result, our knowledge of the genetics and mechanisms of disease is improving dramatically, clearing a path to better tolerated and more targeted therapies. Machine learning and AI also assist in these efforts by making it possible for scientists to analyze vast amounts of data and test more compounds.

Drug development is not the only area of health care experiencing breakthroughs. Medical devices such as sensor-enabled continuous glucose monitors can send real-time data to physicians about blood sugar levels, while new valves are being developed that allow doctors to more accurately and safely treat patients with aortic stenosis, a common and serious heart valve disease. And COVID-19 has helped to expand the use of advanced diagnostic tools and telemedicine, broadening access to health care globally.

Exhibit 3: Blockbuster Drug Sales



Source: Janus Henderson Investors, ISI Research. Data as of 31 December 2020.

Note: A blockbuster drug has U.S. \$1 billion or more in annual revenue.



SUSTAINABILITY & ESG

A focus on sustainability and environmental, social and governance (ESG) issues has long been gaining attention in corporate boardrooms. But these matters came into hyper-focus over the past year as advances in technology and shifting public sentiment achieved critical mass. For example, in the U.S., the “green economy” investment opportunity is now estimated at U.S. \$4 trillion, the equivalent of roughly 5% of the listed equity market and by some estimates, larger than the oil and gas sector.⁶

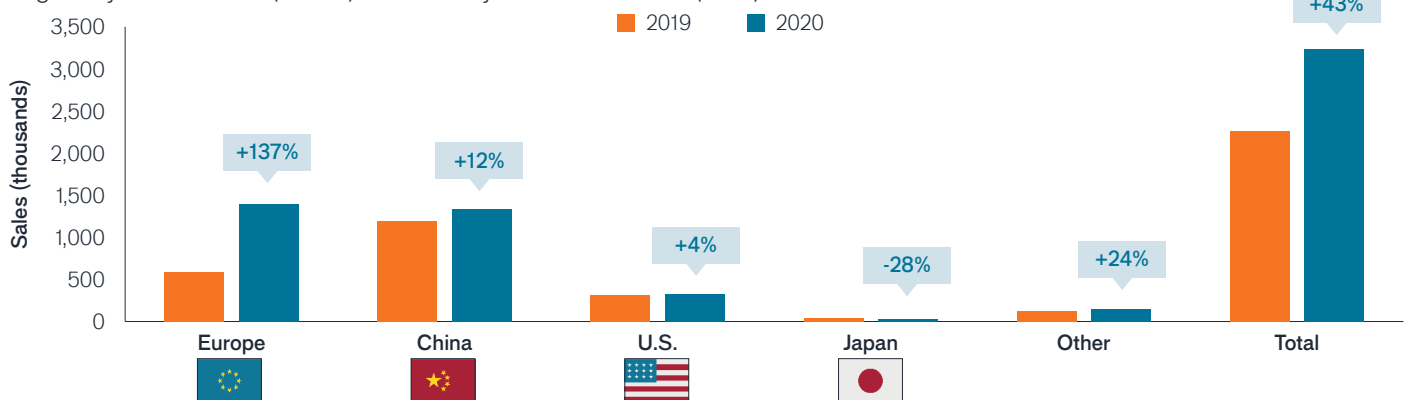
In our view, there's ample room for this trend to grow as digitalization, electrification and decarbonization converge to create dramatic change. Entire industries, from manufacturing and agriculture to transportation and infrastructure, could be overhauled, creating significant investment opportunities. Indeed, 10 years from now, some parts of the global economy could look remarkably different. Electric vehicle adoption, for one, soared in 2020, particularly in Europe, which saw annual sales growth of 137% (see Exhibit 4). Auto manufacturers have been launching a flurry of new all-electric models while also

setting ambitious goals for ending production of internal combustion engine vehicles over the next decade.

Some industries are undertaking ESG initiatives in more subtle ways, but the impact to the long-term sustainability of earnings could be just as important. Firms that seek to reduce energy consumption, for example, may lower costs. Diversity and inclusion and wellness programs can help attract talent, boost employee morale and benefit productivity. Initiatives that aid the broader community can lead to less stringent regulation or provide an advantage when competing for contracts. And a focus on sustainability could guide companies to make capital investments that attract customers or otherwise have long-term payoffs. A Eurobarometer survey conducted in late 2019 on the attitude of European Union (EU) citizens toward sustainability showed that the environment was very or fairly important to 94% of respondents, with one-third saying altering consumption patterns was the best way to address environmental problems, followed by changing production and trade practices (30%).⁷

Exhibit 4: Global EV Sales

Plug-In-Hybrid Vehicles (PHEV) and Battery Electric Vehicles (BEV)

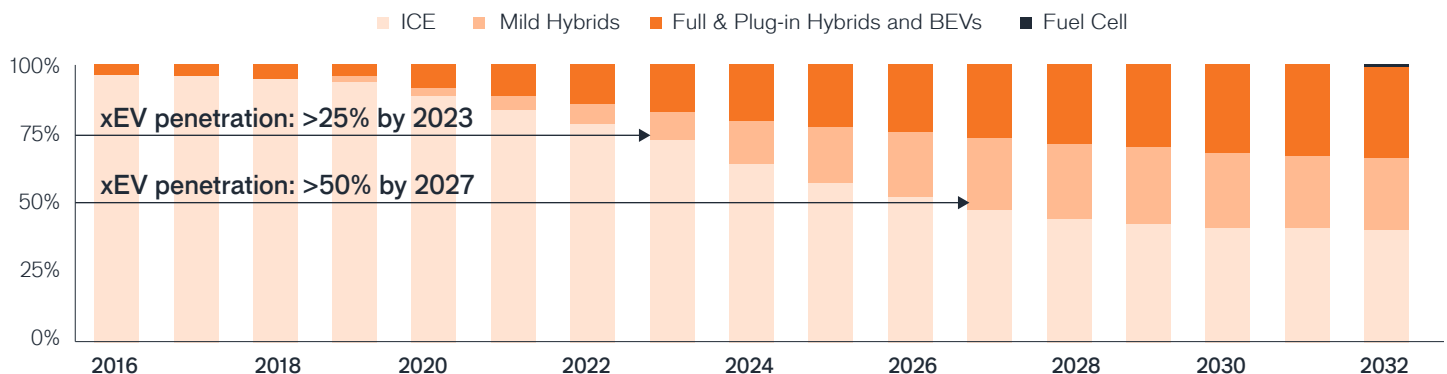


Source: EV-volumes.com, January 2021.

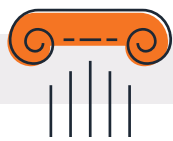
Note: Other includes Canada, South Korea, Taiwan and several other smaller countries.

Exhibit 5: EV Penetration

Car Production by Fuel Type



Source: Infineon Technologies, automotive division call presentation 5 October 2020. Based on or includes content supplied by IHS Markit, Automotive Group. Alternative propulsion forecast, July 2020.



PUBLIC POLICY

Just as consumer priorities are beginning to shift, government spending is evolving in ways that support digitalization, health care research and sustainability. Some of these efforts were borne out of COVID-19, as the pandemic laid bare the importance of digital capabilities, secure supply chains, diagnostics and vaccinations. Other initiatives have been driven by market competition and concerns around future economic growth.

Last year, China introduced a U.S. \$1.4 trillion infrastructure package aimed at developing advanced tech such as AI, the industrial internet and 5G, as well as building out the country's electric grid, high-speed railway and EV charging stations over a six-year period. The initiative comes on top of other development programs, including Made in China 2025, which is focused on nurturing a high-tech manufacturing sector, and Healthy China 2030, a policy that seeks to expand health care coverage and the domestic biotech industry.

In the EU, the Green Deal, rolled out in late 2019, sets a goal of net-zero carbon emissions in the 27-country bloc by 2050. The ambitious agenda has been described by Ursula von der Leyen, the European Commission president, as "Europe's man on the moon moment." The UK also has adopted a net-zero goal by 2050, and, in April, announced plans to reduce carbon emissions by 78% of 1990 levels by 2035, accelerating a previous target by nearly 15 years. Meanwhile, in the U.S., lawmakers are uniting across the aisle to invest in scientific innovation and cutting-edge technology to compete with China. President Biden has also pledged a net-zero emissions goal by 2050 for the U.S. and has proposed spending as much as U.S. \$2 trillion to build out the country's clean energy infrastructure, including providing incentives for electric vehicle purchases and retrofitting homes and commercial buildings to be more energy efficient.

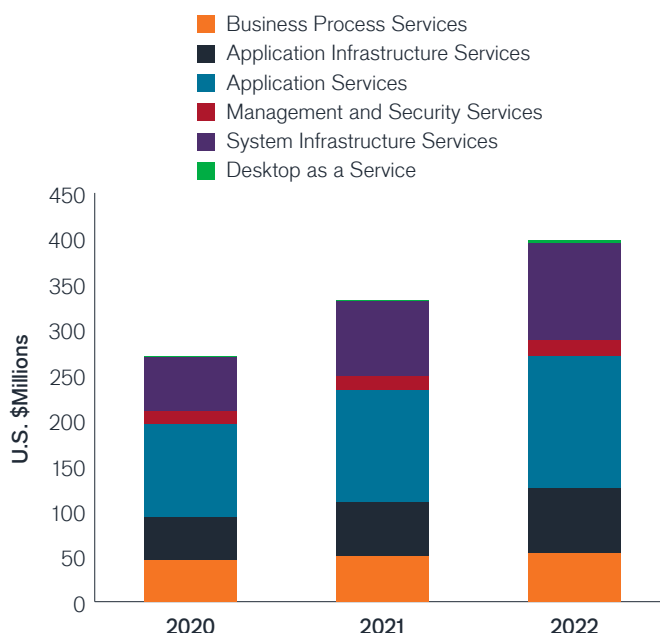
The generous monetary policies of 2020 have helped to whet investor appetite for high-risk assets. As a result, capital has flowed into innovation-centric sectors.



CAPITAL INVESTMENT

While COVID-19 slowed some parts of the global economy, the pandemic served as a stimulant for other areas, including enterprise investment in digital capabilities. In a 2020 survey of more than 2,500 corporate decision-makers globally, 97% reported that the pandemic had accelerated their organization's digital transformation at least somewhat.⁸ That transformation could translate into more dollars spent on IT capabilities such as cloud computing and hyperautomation.⁹ According to a study this year by Gartner, worldwide IT spending is projected to hit U.S. \$4.1 trillion in 2021, up 8.4% from 2020¹⁰ – spending that could be financed by the record levels of cash that corporations stockpiled during the pandemic or acquired through issuing debt at ultra-low rates.¹¹

Exhibit 6: Projected Global Cloud Spending by Application



Source: Gartner, as of April 2021.

Speaking of low rates, the generous monetary policies of 2020 have helped to whet investor appetite for high-risk assets. As a result, capital has flowed into innovation-centric sectors such as biotechnology. During the first quarter of 2021, biotech initial public offerings raised U.S. \$8.5 billion, more than 2.5 times as much as the same period the year prior.¹² Meanwhile, investors are using their voting power to mandate corporate change, including meeting ESG goals. In Europe, for example, some institutional investors are considering linking the compensation of private equity managers to measurable positive ESG impacts.¹³

Speed Bumps Ahead

While the direction of travel for the disruptive economy may be coming into focus, the path it will take is less certain. Innovation is not linear and can take years, if not decades, before becoming widely adopted. Along the way, markets can enter short-term rotations that belie long-term trends. In 2020, for example, global shipments of traditional personal computers (PC) rose 13.1% as the pandemic forced consumers to work from home and do remote learning.¹⁴ The last time the industry had delivered a similar pace of growth was in 2010. The reason: the proliferation of smartphones and the extended durability of computers, curtailing demand. Thus, while PCs may seemingly have experienced a renaissance in the past year – with some stocks responding in kind – long-term trends still suggest limited growth for the industry.

Lags in regulation and supply chain development can add to the volatility. In May, a study by the International Energy Agency found that governments globally must take action to ensure access to minerals that make up key components of clean energy systems. Demand for these minerals, including

cobalt, lithium and copper, is expected to rise considerably in the coming years and could face supply disruptions and price volatility if policy makers don't safeguard resources.¹⁵

The recent shortage of semiconductors exemplifies the risk of supply-chain imbalances. When demand for consumer electronics surged during the pandemic, semiconductor manufacturers could not keep pace, hindered by a perfect storm of capacity constraints, weather disruptions and geopolitics. Bottlenecks ensued, forcing some end markets, including a handful of North American automakers, to temporarily halt production.

Finally, consumption patterns can also be slow to adapt. In the Eurobarometer survey referenced earlier, nine out of 10 consumers said protecting the environment was important to them, but less than a quarter had bought products with an environmental label and only 66% said they separated most of their waste for recycling. This intention-action gap is influenced by a range of factors, including price, convenience and habits, and can take a while to overcome.

STAYING DIVERSIFIED THROUGH DISRUPTION



In recent years, the digital transformation has heavily favored mega-cap technology stocks. In 2020, returns from Facebook, Amazon, Apple, Netflix and Google (FAANG), Microsoft and Tesla dwarfed that of other major large-cap indices by a significant margin, helping widen the long-term performance gap between growth and value stocks. What's more, this basket of stocks now makes up roughly 40% of the Russell 1000® Growth Index and nearly 15% of the MSCI World IndexSM. But the digital transformation is occurring throughout the global economy, blurring sectoral boundaries as technology redefines business models. As such, investors may be able to access differentiated cash flows by casting a wider net, looking for opportunities across market capitalization, sector and geography. Such an approach requires abandoning the traditional "growth versus value" paradigm in favor of one oriented to innovation and potentially misunderstood opportunities. But it could be key to building a diversified portfolio in the disruptive economy.

Source: Morningstar, iShares and MSCI.

Notes: Return data as of 31 December 2020. Russell 1000 Growth Index measures the performance of the large-cap growth segment of the U.S. equity universe; weightings as of 28 May 2021. The MSCI World Index captures large- and mid-cap representation across 23 developed market countries; weightings as of 1 March 2021.

Identifying Durable Growth Amid Disruption

Given so many variables, we believe maintaining a long-term view can help identify innovation with the potential for staying power. As data has become the means of identifying business trends and wringing out efficiencies, today's mega-cap tech and communications companies stand to create a flywheel that results in unit economics unlike anything the tech sector has previously seen. Outside of tech, companies that leverage AI, the cloud, IoT and 5G are building their own competitive moats and, in some cases, entire new industries. Against this backdrop, we believe investors should focus on companies with the following attributes:

- **A Culture of Innovation.** As the economy turns increasingly digital, there is little place to hide; companies must undertake digital transformations to improve both front-office and back-office experiences and deliver new products. In health care, for example, computing power is helping researchers develop therapies that once seemed like science fiction, while cost pressures and generic competition threaten firms that fail to deliver value to the health care system. As such, we think businesses with a culture of innovation that stay focused on today's transformational themes will likely be well positioned for the long run.
- **Deep-Rooted Competitive Advantages.** Companies situated on the right side of the digital divide have tended to deliver above-average earnings growth in recent years. But as disruption continues to accelerate, we believe a company's competitive advantage will be important for

sustaining that growth. Firms with trusted customer relationships, solid balance sheets and high returns on capital can build defenses against market entrants and allocate capital appropriately to emerging opportunities.

- **Disciplined Management Teams.** To build a culture of innovation and a competitive advantage, companies need proven management teams. These leaders should show a record of driving innovation while still prioritizing fundamentals such as operational efficiencies, profit margin expansion and positive free cash flows over the long term.
- **Sustainability & ESG.** Natural resource constraints, climate events and shifting public sentiment will increasingly impact business operations. We think ESG analysis should be an integral part of the fundamental research involved in stock selection. Looking through the ESG lens, investors can attain a more holistic assessment of risk, the sustainability of earnings and ultimately future performance, in our view.

With this approach, investors may be better able to fortify their portfolios for the economy's digital transformation, potentially capturing upside growth while minimizing exposure to companies that become disintermediated or fail to turn innovation into sustainable earnings expansion. Doing so is no easy task as we emerge from a global pandemic and technology, public policy and consumer tastes change dramatically. As such, we believe investors need a strategy built on sector expertise, fundamental research and disciplined analysis – a formula we think will help investors navigate the disruption we are experiencing now and will continue to face in the years to come.



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Article Contributors



¹ Forecasts are through 2026. International Monetary Fund, World Economic Outlook Database, as of April 2021.

² "The Moment of Truth in Every Digital Journey," Boston Consulting Group, April 2021.

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⁴ Food and Drug Administration, as of 31 December 2020.

⁵ Genome.gov, as of 7 December 2020.

⁶ "Investing in the green economy – sizing the opportunity," FTSE Russell, December 2020.

⁷ Special Eurobarometer 501, "Attitude of European citizens towards the Environment," December 2019; "Sustainable Consumption: Helping consumers make eco-friendly choices," European Parliamentary Research Service, October 2020.

⁸ "COVID-19 Digital Engagement Report," Twilio, August 2020.

⁹ Hyperautomation combines tools such as Robotic Process Automation (RPA), machine learning, and artificial intelligence to automate complex business processes.

¹⁰ "Gartner Forecasts Worldwide IT Spending to Reach \$4 Trillion in 2021," Gartner, as of 7 April 2021.

¹¹ Quarterly Financial Report: U.S. Corporations: All Information: Total Cash on Hand and in U.S. Banks, Federal Reserve Bank of St. Louis, as of 31 December 2020.

¹² Nature Biotechnology, Vol. 39, May 2021.

¹³ "Private Equity Weighs Linking Manager Pay to ESG Performance," The Wall Street Journal, 1 June 2021.

¹⁴ IDC, as of 11 January 2021.

¹⁵ "The Role of Critical Minerals in Clean Energy Transitions," International Energy Agency, May 2021.

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